U N I V E R S I T Y   O F   R E A D I N G

AN ANALYSIS OF THE EFFECTS OF PREFERENTIAL

TRADE POLICIES THROUGH THE ESTIMATION OF

QUANTITATIVE MODELS : THE CASE OF PORTUGAL

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ABSTRACT

The purpose of this dissertation is to study the trade and welfare effects of the preferential trade policies adopted by Portugal, with a view to assess the future impact of full membership of the European Communities, and recommend policy options in this context.

The dissertation is organized in four Parts. Part I examines the main orientations in trade and industrial policies and their impact upon the Portuguese pattern of industrial development. This study serves to illuminate the historical context in which preferential trade policies were conceived and implemented in the past.

In the two following Parts, the methodological and theoretical background to the construction of quantitative trade models is developed. Part II surveys the "theory of customs unions". Economic rationale for the adoption of preferential trade policies are sought for, under alternative frameworks characterized by different market imperfections. Part III surveys available methodologies that quantify the trade and welfare effects of preferential trade policy under two different headings: "residual" methods and "analytical" models of trade.

The conclusions are based upon the results obtained with:

- a gravity model, describing the geographical pattern of manufactured exports and imports, between 1971 and 1982.
- and a time-series model of demand functions, specified in a three-stage framework for the period 1961/80.

The quantitative analysis yielded substantial export gains, with strong concentration on a few commodity groups. This pattern is very similar to that arising from EFTA membership, in the sixties., which suggests poor ability to diversify exports. On the import side, the Free Trade Agreement with the EEC produced significant trade reversion away from EFTA sources. However, the expected outcome of preferential policy was frustrated by the simultaneous adoption of non-tariff barriers, with a net trade eroding effect. Full membership of the EEC calls for a careful evaluation of the consequences of a non-programmed removal of implicit barriers. A transitional period is justified in this respect also, in coordination with adjustment assistance. Import liberalization will not be sufficient though to promote expansion and diversification of exports. Adequate intervention is needed in order to achieve smooth resource reallocation without increasing the rate of unemployment.

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To My Mother

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INTRODUCTION

The application of Portugal to EEC's membership in 1977 has provided a very important stimulus to social and economic applied research. Among industrialists, government officials and other policy-makers soon developed a concern about the predictable impact of membership on economic activities, institutions and social relations in general. As a consequence, researchers and academics, both at home and abroad, were encouraged to produce monographs and empirical studies ultimately aimed· at assessing the foreseable consequences of full EEC membership.

However, as these efforts proceeded, a growing skepticism arose, especially in academic circles, as to the possibility of obtaining valid forecasts of the impact on the basis of the existing state of knowledge about national reality. The political circumstances prevailing before April 1974 were not particularly encouraging for the progress of social sciences or of applied social research. Now, the perspective of future transformations induced by a deeper involvement in international relations is supplying, even if in an indirect way, the stimulus to more ambitious research, supported by more solid methodology than traditionally had been the case.

The present study shares this common departing point with an already sizeable number of current research efforts on Portuguese social and economic reality. Our original purpose being the evaluation of the impact of EEC membership on Portugal's industrial development, we became progressively aware of the need to find satisfactory answers to a series of questions, without which any forecasting attempt could not be more than a speculative exercise.

The first question to ask is about the connection between the structure and development stage of the Portuguese economy, in particular of its industrial activities, and the economic policies followed in the recent past, with direct influence on industrial development and foreign trade.

We were able to find good monographs and global synthesis that described the Portuguese process of industrialization. However, with some surprise, we could not find any updated and systematic study relating economic policies followed in the context of the so-called import-

substitution strategy to their outcome in terms of industrial structure, income distribution, external competitiveness, etc.. For other countries, like Brazil, Mexico or Korea, which had followed similar development strategies after the Second World War, that kind of material has been available for quite a long time - it was produced inter alia by international organizations.

The generalized lack of interest for the Portuguese development case must be attributed to some extent to the attitude of "proud loneliness" that had prevailed among Portuguese leading circles until 1968 at least. Another reason was the misleading impression that the Portuguese economy, albeit showing poor indices of development, shared more similarities with the developed industrialized countries with whom it coexisted in organizations like the OECD and EFTA, than with the countries in the Third World. This image had been traditionally cherished by Portuguese authorities in the past (but also to some extent in the present) for reasons of national prestige : the relatively liberal economic environment, the moderate degree of protection, the needless foreign borrowing.

These fallacies could not stand up as far as the perspectives of future trade liberalization uncovered the basic lack of competitiveness in a large number of industrial branches. There is now widespread concern in business and official circles about their survival once the traditional economic policies are replaced by the same policies that apply to today's EEC members. It is the extent to which the existing pattern of industrial activities is dependent on traditional policies, that is necessary to examine! How great is the role of State intervention? Which types of industries have been favoured by economic policy and with what justification? Are industrial firms encouraged to export or to orient sales towards the domestic market? How high is the degree of protection afforded to domestic producers?

The second question is related to the degree and type of external shock that the Portuguese economy is supposed to receive as a consequence of EEC membership. There are several integrating mechanisms that will influence in one way or the other the future industrial development of Portugal. Which ones will be the most decisive?

In the first place, the integration into the EEC's Customs Union will bring about the complete removal of tariffs and other trade

distortions in trade with other members, and the progressive adoption of the Common External Tariff and of other elements of the EEC's commercial policy towards third countries. This is indeed the first and most crucial step in the process of economic integration. The direction and volume of trade is due to be substantially affected, and this in turn will raise welfare effects, that were defined by Viner in a path-breaking study as "trade creation" and "trade diversion".

From the importing country's point of view, when domestic production is replaced by imports, there is trade creation, and when imports from third countries are replaced by customs union partners' exports, there is trade diversion. From the exporting country's point of view, trade creation and trade diversion in the partner countries taken together add up to "export expansion". The importance of these effects should not be considered only in static terms, i.e. as marginal changes in real national income. More importantly perhaps they concern changes in the reallocation of domestic resources with lasting effects in the long run. Resources tend to be pulled from internationally inefficient branches of industry that were made obsolete by free competition, towards branches holding actual or potential comparative advantages that are benefited by the opening up of foreign markets. As a consequence of this adjustment process, one may expect that productivity will increase in the long run, and that the economic system is allowed to operate without major policy-induced distortions. Economic integration may therefore contribute to a shift in economic policy from an inward-looking strategy towards an export-oriented one. Dynamic benefits will be greater the more emphasis has been previously put into import-substitution policies, but the costs of adjustment will also be corre - spondently greater.

Secondly, full membership is meant to bring about a process of harmonization in several fields, which is ultimately designed to remove artificial, non-tariff, sources of distortion in trade with the Union members. The adoption of the VAT system and of other measures of fiscal harmonization, the adoption of common procedures as to industry subsidies and government purchasing, the acceptance of common technical standards, etc. pursue a common objective. While tariff removal will certainly create adjustment problems in individual sectors, these must be solved positively by reorganization internal to the firms or resource

reallocation and not by continuous resort to non-tariff distortions that tend to spread into the whole network of trade relations.

Thirdly, the EEC has been implementing common policies in several fields (agriculture, social affairs, regional development) that are likely to influence industrial development in a variety of ways. At a microeconomic level, the inflow of funds for investment in infrastructure and specified projects under the Community's programs of assistance will prove a decisive element of modernization particularly in food and related industries, small and medium-sized firms and recycling of manpower. At the macroeconomic level, the prospects are not so bright, as the budget and the foreign currency available for food imports will tend to be drained to a considerable extent as a result of the EEC's Common Agricultural Policy. Compensatory financing will almost certainly be needed in order to avoid that the member with lowest income per capita within the Community be a net contributor to the EEC's budget. Furthermore, the existing arrangements involving coordination of national economic policies by means of a smooth working of present exchange parity agreements until a common currency is created, are not likely to affect the Portuguese economy directly, at least until a greater degree of convergence in macroeconomic performance is achieved.

Finally, after accession, Portugal will have to eliminate existing barriers to foreign direct investment and capital transactions in general, whereas, as a result of the extension of social security rules to Portuguese emigrants abroad, their numbers will tend to stabilize. As an outcome of freer factor movement, it is expected that foreign capital will play a more decisive role in the modernization of the domestic industry, and that industrial wages will tend in the long run to reduce the present gap in relation to the EEC average.

The final impact of EEC membership on Portugal's industrial development will be the joint result of the operation of these integrating mechanisms. However, the importance and timing of each of them are not identical. Tariff changes associated with customs union formation are responsible for long term shifts in prices and resources. These constitute the background against which fiscal, financial and resource mobility policies will play their respective roles. Furthermore, in the Portuguese case, tariff changes represented for a long time the sole mechanism of integration . Portugal's experience in European integration

started in 1959 with the membership of EFTA and was given an important extension in 1972 with the establishment of a Free Trade Agreement with the EEC. As a consequence trade between Portugal and its European partners is already substantially liberalized in both directions, in respect of tariffs levied on industrial products. Innovations brought about by full EEC membership in what concerns tariff policy are mostly related to agricultural trade and imports from third countries.

Despite the fact that integration through tariff policy is relatively advanced, it is by no means clear that the inherent adjustment in domestic prices and resources has kept pace with the process of tariff removal vis-à-vis the EEC and EFTA countries. The adjustment process is a lengthy one and may be hampered by a variety of reasons. New opportunities in foreign markets will only be exploited if new capacity is added by investment in those branches holding comparative advantages. The incentive to take advantage of tariff preferences may be counteracted domestically by protective policies that provide a rent on domestic market sales. The closing down of uncompetitive firms may be delayed if the government supports their prices with some form of subsidy or erects new barriers to imports.

Consequently, we are faced with a third and final question: How far did the adjustment process in Portugal go? Or, in other terms, up to what extent does the Portuguese industrial structure already adjust to bilateral comparative advantages within the context of the industrial free trade area grouping the EEC and EFTA together?

There is today almost unanimity as to the beneficial effects of EFTA membership during the sixties, thanks in particular to the extensive empirical studies carried out by the EFTA Secretariat. By contrast, there is no widely agreed conclusion about the effects of the preferential trade policy followed during the seventies. A prime reason for this gap in information is the fact that, simultaneously with the EEC Agreement, the Portuguese economy became subject to a number of domestic and external disturbances after 1974/75 (nationalizations, new institutional background, wage rises, oil price shock, exchange fluctuations, end of colonial rule, etc.). Not only the effects of tariff policies become less determinant in the face of seemingly more direct factors, but also the methodological task of isolating and evaluating ex post integration effects becomes rather more complex.

It is an essential prerequisite in the definition of post-accession industrial policies to be able to anticipate the extent and character of the adjustment stages still to come, as a result of integration. Under an extreme assumption, Portugal would have been able to take maximum advantage of its liberal access to EEC markets for manufactured products, while exposing its domestic producers to practically free competition from imports originating in the EEC and EFTA countries, and for a sufficient length of time. Under this assumption, that corresponds to a more or less perfect working of the trade arrangements, one would expect that most domestic firms would be operating under internationally competitive costs and profitable working capacity. It would be therefore wise to give priority to promoting investments in innovative technology, launching new industrial firms with generous State support and encourage in general the activities in the areas of research and development. This would be to a large extent an "advanced economy" model of industrial policy, primarily designed to achieve an "alternative", more dynamic pattern of specialization.

Under another, but equally extreme, assumption, Portugal would have been able to avoid full exposure of domestic industries to foreign competition by resorting to economic policies with distortive effects on trade, while exports would not have grown to their full potential due to new forms of protectionism erected in the meanwhile by Portuguese trade partners. In this case, the allocation of resources would not yet reflect the international pattern of prices, and consequently attention during the next decade or so should be primarily concentrated into the social and economic problems raised by the adjustment process. In particular, priority should be given by authorities to support existing plans for the reorganization of potentially viable firms, to provide adequate training and recycling of manpower, to practice a more realistic policy of prices and subsidies, especially in what concerns the public sector, and to engage into more efficient and far-reaching social security schemes in the areas of unemployment and housing. The launching of new projects requiring sophisticated technology and/or huge capital expenditures would be particularly subject in this case to the restrictions imposed by budget and current balance equilibrium, that would be harder to achieve under mounting pressure of imports directly competing with domestic production.

The organization of the present dissertation reflects the sequence of questions, that we have just raised. Part I examines the main orientations that have been followed in Portugal as to commercial and industrial policies, and their impact on industrial development , with the emphasis being laid on the period after the Second World War. Part II surveys existing literature on trade and welfare effects of economic integration. Part III examines and discusses the available alternatives as to the methodology of estimating trade effects of preferential trade policies. And finally Part IV presents the conclusions obtained with our own empirical work designed to establish the ex post impact of the preferential arrangements in force during the last 15 years.

The three chapters that comprise Part I follow an historical sequence. Chapter 1 deals with trade policies during the pre-industrial period and with the import-substitution strategies prevailing until the end of the 1950s. Chapter 2 examines the coexistence between these and an emerging outward-looking orientation that starts to take shape under the early effects of EFTA membership. Chapter 3 is focused on the contradiction between the liberalizing contents of the policies adopted in the early 1970s , i. a. the EEC Trade Agreement, and the adjustment-blocking orientations prevailing after the 1974/75 crisis. Our contribution has consisted mainly in compiling and discussing a variety of partial accounts and studies relevant for the purpose of assessing the influence and effectiveness of past commercial policy in Portugal. Where necessary, independent information was added in order to clarify some issues, not yet duly quantified. This became particulary necessary in respect of tariff policy and of recent policies adopted with the purpose to promote exports or to restrict imports. The theoretical background for this task was provided by Corden's and Johnson's contributions to the theory of effective protection, by the distinction between inward-looking and outward-looking strategies of development, as elaborated by D. Keesing and B. Balassa, among others, and by the now uncontroversial evaluation of the effects of import-substitution programs of growth, as spelled out in the collective works led by I. Little, A. Krueger and J. Bhagwati.

Since the decisive contribution of Cooper and Massell to the theory of customs union, the inquiry for an economic rationale supporting the formation of preferential areas of trade has been a constant

concern. Among the several directions that have been explored in this respect , we privileged those that might offer some insight into the economic justifications of preferential trade policy as conducted by a small, semi-industrialized economy. In the survey of Part II we drew most heavily from the contribution of H. Johnson on the public-good argument for preferential trade; from Corden's argument in terms of economies of scale; from the works of Vanek and Kemp that formulate a general equilibrium model for custom union formation with emphasis upon the changes in intra-union terms of trade; and from the recent contributions of authors like Dutta, Yu, El-Agraa and Jones, who consider preferential trade policies in the context of the traditional confrontation between non-discriminatory trade policies and fiscal policies as a remedy to existing market distortions.

In part III we review available empirical methods whose purpose is to isolate trade and welfare effects of integration under two headings : "residual" methods, to be examined in Chapter 6, and "analytical" methods, in Chapter 7. Special consideration was given to the assumptions and conclusions of those studies that included Portugal as a specific object of estimation - namely the studies carried out by the EFTA Secretariat and by Silva Lopes.

The purpose of this methodological survey was to select the methods that best combined a certain number of properties, that had been previously deemed as desirable in the case under study. The estimation models that served to provide the final conclusions of this dissertation were derived from two independent methodological sources:

- the application of gravity trade models to the estimation of trade effects of integration, as carried out originally by N. Aitken; and
- the adaptation of consumer allocation models to the same purpose, as developed by S. Resnick and E. Truman.

PART I

COMMERCIAL POLICIES AND

INDUSTRIAL DEVELOPMENT IN PORTUGAL

'One might say of the Portuguese what several authors say of certain African peoples: that they have no skills: that they have plenty of precious metals, directly received from the hands of Nature: that all civilized nations are able to do profitable business with them: that they can be made to value dearly worthless things and to accept others for an excessive price.

'This inaction of Portugal is old as time; but it was always caused by Britain (...). Clothing and food being two equally needed things in every nation, it forcefully follows that, by supplying these to the Portuguese, Britain has managed to keep them under the greatest dependence and submission'.

From an anonymous pamphlet published in Lisbon, in 1808.

'The notion, for example, that a government should choose opinions for the people (...) may be said to be altogether abandoned as a general thesis. It is now well understood that a regime of this sort is fatal to all prosperity, even of an economic kind (...)

'The decline of Portugal and Spain in national greatness, and even in material civilization, while almost all the other nations of Europe were uninterruptedly advancing, has been ascribed to various causes, but there is one which lies at the foundation of them all: the Holy Inquisition, and the system of mental slavery of which it is the symbol'.

J. Stuart Mill, "Principles of Political Economy", Book V, Ch. X, §6.

CHAPTER 1

THE POLICIES OF IMPORT-SUBSTITUTION

Commercial policy can be broadly defined as any intervention of the
State in the economy that, intentionally or not, provokes a change in the
effective domestic value of foreign currency, thereby modifying the relation
between the prices of domestic and foreign goods and services. Commercial
policy instruments cover a variety of forms, which either affect directly
prices in international transactions or restrict their volume: tariffs, ex-
port subsidies, exchange regimes, quotas, etc. Theoretical interest has been
focused mainly on the protective role of commercial policy, whereby the State
discriminates between activities and branches with the purpose of diverting
investment and employment to those that are favoured with higher rates of
domestic value added. But other roles can be assigned to commercial policy, such
as the financing of public expenditure, or the correction of external im-
balance. These different roles are interrelated in the sense that the achieve-
ment of one may hamper, or by the contrary, facilitate the achievement of
the others.

In Part I, we shall discuss the role that commercial policy has played
in defining and promoting the pattern and growth of Portuguese manufacturing
industries. We hope that this study will illuminate the present options as
to the future industrial development of the country in what concerns com-
mercial policy alternatives. In historical terms, it is not possible to en-
visage the influence of economic policy upon economic reality as a simple,
direct relationship between one cause and one effect. The pattern and growth
rate of the industrial activities have been subject to a variety of factors,
some of which do not even depend directly on government action, such as cul-
ture, habits of the population, geographical location, natural resources,
etc. Among the policies that intentionally and directly affect industrial
development, we may mention public investment, fiscal incentives, licensing
regimes, etc., all of which are usually covered by the label of "industrial

policy". Besides, a vast number of economic policies, even if not specifi-
cally oriented towards industrial objectives, will certainly influence them
— that is the case, among others, of stabilization policies, wage and price
policies, land reform, etc. It is therefore preferable to envisage the object
of our study as a complex network of relationships, instead of a simple cause-
effect link. The problem is how to emphasize the role of specific commercial
policy measures without divorcing them from their general environment.

In theory, there are two possible approaches to our problem. One is
purely historical and consists in finding the explanations for a specific
policy measure in the economic, political and social context that surrounded
the making of that decision. The other is purely economical, and consists
in:

(i) evaluating that policy in terms of its efficacy, by comparing
the actual results with the expected outcome;

(ii) inquiring about the foundations of the defined outcome, on the
basis of some principles of economic rationality.

Given the nature and purposes of the present research, it would
be natural that we emphasized this second approach. In fact, a compromise
had to be established with the "historical" perspective, which is revealing
about the limitations of the current methodology in economics. Commercial
policy has been particularly subject to strong political and cultural in-
fluences, as it operates directly in the area where the relations between
the Nation-State and its foreign environment are defined. Traditionally,
it has been regarded as a branch of diplomacy, the economic arguments being
often overrun by a mass of considerations in terms of national prestige,
security, or geostrategy. In countries where, until very recently, the in-
terests of the individual were totally submitted to State authority, it
seems fruitless to search for economic rationality in commercial policy,
especially if we identify it with the maximization of utility enjoyed by
individual consumers. Nevertheless, the contributions of modern theory of
commercial policy will be used as far as possible to illuminate the main
issues. An introductory presentation of that theory will not be done, how-
ever, as its principles have been extensively treated in recognized text-
books[1/], and it would be difficult not to follow the same steps too closely.

The study of the commercial policies in Portugal and of their impact
upon industrial development is organized into three different periods, cor-
responding each to a specific orientation in terms of development strategy:

(i) Unlike other countries that arrived late to industrialization
(Korea, India, Mexico, etc.), Portugal attempted several ex-

periences of import-substitution since very early times. Two were of special importance due to the magnitude of results and the relative coherence of the policy instruments — the ones occurring after major international crisis, in 1890/92 and 1939/45. Inward-looking industrialization persisted until 1959, when Portugal became a member of EFTA.

(ii) Timidly at first, but more openly after 1965, several measures were taken to integrate further the Portuguese man-ufacturing activities into the international division of la-bour. However, inward-looking policies persisted until the end of the decade.

(iii) It was only in 1968/69 that a shift towards outward-looking industrial development took place, involving greater liberal-ization of imports. In spite of this orientation being reversed after 1975, a crucial off-shoot remained, the Free Trade Agreement with the EEC, against which many of the current orientations in commercial policy have to be confronted, and that decisively conditions the terms of the future accession of Portugal to the European Communities.

1.1. The pre-industrial period

After occupying one of the most dominant positions in the world scene during the 15th and 16th centuries, as a maritime power, Portugal entered progressively into a state of spiritual and material backwardness. This decline became particularly noticed during the 19th century, in a period when Portugal was unable to be more than a passive observer of the deep transformations that the Industrial Revolution was operating in most societies of Europe. After the debates that took place in the last century between supporters of free trade and of protectionism, it became customary to identify the reasons of Portugal's backwardness with an alleged "informal colonialism"[2] that would have dominated Anglo-Portuguese relations during most of the 18th and 19th centuries. Industrialization would have been blocked essentially by a free trade policy that deprived domestic manufac-turers from protection against cheap British goods. Such a policy was not dictated by national interests, but served the particular interests of a social bloc formed by agrarians and merchants, and supported by Britain[3]. However, recent historical investigations have brought out the conclusion that, despite the fact that liberal and protectionist ideologies alternated

in power, domestic producers were not left unprotected relative to foreign
competitors, except for very short and special periods . The fact that
high protective tariffs have been the rule, rather than the exception, in
modern Portuguese history,confirms the dominant role played by public fi-
nance in the making of commercial policy, even in confrontation with even-
tually liberal positions in the Government. Consequently, the practically
inexistant development of Portuguese industry until the end of the 19th
century has to be explained by a more complex combination of factors than
simply the hypothetical submission to British commercial interests , on
the basis of a careful examination of each historical attempt of industri-
alization.

   Due to the exceptional expenditures required by the Independence
War, a critical lack of precious metals arose in the last quarter of the
17th century. Following the Mercantilist prescriptions, Ericeira imposed
a series of prohibitive restrictions to imports of several consumption goods
(the "Pragmatic Sanctions") and established State factories to supply some
of these (especially silk and woollen clothes). Amidst an unfavourable back-
ground, marked by lack of basic skills, poor roads, and heavy smuggling,
this first attempt failed to produce any self-sustained development. Be-
sides, the prohibitive restrictions could not meet the increasing financial
needs of the State[4/].

   In 1703, the trade policy was completely reversed with the Methwen
Treaty, which was due to become famous as an illustration of Ricardo's law
of comparative advantages. In fact, it was a distant predecessor of today's
free trade agreements, whereby Britain granted a minimum preference of 33%
to Portuguese wines relative to French substitutes, in exchange for the elim-
ination of quantitative restrictions on the imports of woollen clothes. That
tariff preference led to an important surge in the exports of Port wine, which
promoted a significant development of agriculture in the Northern regions[5/].
On the other hand, the Treaty did not grant a monopoly position to Britain,
the liberalization of imports being gradually extended to other foreign sup-
pliers, or destroy domestic manufactures. These were scattered around the
whole country, and continued to supply the largest share of the domestic
market with low-priced, low-quality products. Protection was afforded not
only by tariffs, but also by transportation costs (especially high between
the coast and the interior).

   Due to massive imports of Britain gold and diamonds, and to the
prosperous wine business, there was no need to erect new import-substituting
factories, and Portugal remained an essentially mercantile and agricultural

economy[6]. In the second half of the 18th century, however, the government had to deal with a new payments crisis caused by the exhaustion of Brazilian mines. Pombal launched a State supported process of import-substitution in the Mercantilist fashion. But, instead of prohibitive restrictions, that would be contrary to the Methwen Treaty[7], direct encouragement was given to (foreign and national) enterpreneurs through monopoly licenses, privileges in the use of raw materials (whose exports were forbidden), etc. As a result, not only some large scale factories but also a large number of small workshops flourished in the last quarter of the century. Their production was directed to both the domestic and the Brazilian markets.

This relatively prosperous period was not followed, however, by the introduction of the technology that corresponded to the Industrial Revolution. A very serious crisis came about in the first decade of the 19th century (especially around 1807), which destroyed most factories and workshops and disrupted the external balance. Several factors were at the origin of this crisis: the Napoleonic invasions, the withdrawal of the intelectual élite to Brazil following the royal family, the loss of the monopoly position in trade with Brazil after the Treaty established with Britain in 1808, and the unilateral tariff preference of 15% granted on all imports from Britain after the trade agreement of 1810. The consequences of this unequal arrangement (only possible under conditions of extreme political dependence) can not be underestimated in a period when the introduction of steam engines gave British manufactures, especially of cotton and metals, an almost unbeatable cost competitiveness. However, it would be equally erroneous to attribute to the 1810 Treaty the whole responsibility for the state of industrial and technological backwardness that persisted throughout the next fifty years. As early as in 1822, the preferences were unilaterally abolished by the first liberal government. And even before, in 1814/15, with the end of the War and a falling trend in prices[8], a general recovery could be observed in manufacturing industries.

A more fundamental explanation must be found elsewhere. Economic historians have pointed out the crucial role played by modernization in agriculture during the 18th century as a pre-condition for the industrial take-off that was experienced immediately afterwards by today's industrialized economies[9]. The release of the workforce, the enlargement of the domestic market and the improvement in the division of labour, all made more attractive the investment in manufacturing activities. In Portugal, that modernization occurred only in the second half of the 19th century

under the impulse of social reforms and of an improved transport network[10/], therefore delaying the industrial take-off by one hundred years at least.

The need to free society from all feudal heritages (such as the system of land ownership, the restricted access to trade and industry, and the discriminatory fiscal system) and to liberalize imports of food products, as a prerequisite to the progress of industrial activities based on modern machinery, was clearly perceived by a Portuguese contemporary of Ricardo, Acúrcio das Neves. However, the liberal reforms in this direction took a long time to materialize. The early liberal governments failed to carry out a systematic program of reforms, and the traditionalist opposition, eager of the prerogatives enjoyed by the nobility and the Church, forced a series of civil wars that ended only in 1834. It was then possible for the liberals to abolish some of these privileges, especially the fiscal discrimination in favour of these two classes and the freedom of access to economic activities, but others remained until the 1860s[11/]. Corn protection lasted until 1865.

Protection to industry remained a fundamental issue in the political fight opposing the different liberal fractions until the end of the century. Free trade views prevailed among the "Right", not only for ideological reasons, but also because it was feared that industrial protection might provoke British retaliation by abolishing tariff preferences on Port wine[12/], and decrease the profits and the activity of the powerful import-export trade. The "Left", that was supported mainly by craftsmen and the urban petty-bourgeoisie, was unanimously protectionist. Until 1842, it was this last mood that prevailed. In 1820/22, duties on British products were unilaterally increased (to 24 percent first, and to 30 percent afterwards, just for woollen cloth). The Customs administration was modernized by Silveira, and in 1837 Passos Manuel introduced the modern Tariff. The medieval duties, that varied according to the port of entry and the value of the merchandise, were replaced by specific duties, valid for the whole country. The level of the duties was generally high, but this reform did not produce any significant surge of industrial development.

In 1842, a new trade agreement with Britain was signed. It established mutual tariff preferences in wine and manufactures, and accepted the principles of the most favoured nation and of reciprocity. A major tariff reform followed in 1852. Sideri and Pereira interpret these two policy measures as a full shift towards free trade, and the main cause why industrialization was blocked and the country was "condemned" to export primary goods. However, D. Justino (1984) could not find empirical evidence

for these claims. There was no noticeable decline in industrial activity; instead, new factories were established with modern technology, and some industries (especially cotton textiles) seemed to have known a period of relative prosperity. Between the Tariffis of 1837 and 1852, protection increased for some manufactured goods of wool and cotton. Between 1842 and 1856, the average rate of duties decreased from 24.5 to 19 percent but remained at a steady level for woollen (35 percent) and cotton manufactures (25 percent), which were the main ground for competition between domestic and imported goods. Since the year 1856 marks the height of the free trade movement in Western Europe, one might say that the level of nominal protection in Portugal was high by international standards.

Import duties could not be lowered, because customs revenue represented 38 percent of public receipts at the time, and there were no alternative ways of financing public expenditure through taxation. The small scale of most firms limited the effective basis for industrial taxation to certain major products and larger establishments, and the atomistic structure of retail outlets barred effective retail sales taxation. No single transaction tax might exist in these circumstances and instead, expenditure was taxed through several consumption taxes, stamp taxes and special duties connected to fiscal monopoly regimes. Personal income was taxed separately by a complex system of schedular taxes on estate, industry profits and interest gains. In such conditions, trade taxes were the politically most convenient and administratively cheapest way of obtaining fiscal receipts (R. Musgrave, 1969). However, when the fiscal purpose of duties becomes dominant, their role in promoting development is correspondingly reduced. Export duties discourage investment in those branches holding comparative advantages. Import duties, if aimed at revenue maximization, will tend to charge those goods showing lower price-elasticities of import demand, among which raw materials and intermediate products represent the largest share. The effective rate of protection to domestic activities is thereby reduced, especially in those that are export-oriented. These ones suffer a negative protective rate, since they have to sell at world prices, while paying higher than world average prices for their inputs. Therefore, the role of tariff policy in industrial promotion cannot be made more efficient, while a sufficiently large basis for direct taxation does not exist[13/].

After 1852, Portugal enjoyed a more or less stable political period, that lasted for almost forty years. This stability allowed the Government to follow a more or less coherent strategy of development — the

"Font sm". Such strategy was based on the belief that economic development would naturally follow as soon as a network of transports and communication were set up. This ambitious plan of public works had to be financed, first by borrowing, and afterwards · by increasing tax receipts made possible by economic growth. While relatively successful in terms of its primary objectives, the strategy proved to be a financial disaster. Widening trade deficits and bad borrowing terms increased enormously the share of public receipts devoted to the service of public debt, which jumped from 27 million pounds in 1854 to 47 million in 1869. A large proportion of the debt was apparently credited on behalf of foreign banks, most of which in the City of London. Despite a regular increase in tax revenue between 1871 and 1876, it was insufficient to pay back the previous debt. Therefore, basic infrastructures were financed by public deficits and indirectly by foreign capital[14].

Together woth emigrants' remittances, capital imports also financed an ever growing trade deficit, which had its origins in the loss of the monopoly trade with Brazil. Portugal exported primary goods, such as cork, cattle, fruit and vegetables, wood, wine and minerals, whose markets were generally characterized by low income-elasticities and high price-elasticities; and imported mostly high-income-elasticity manufactured goods, for final consumption and investment. In order to improve the trade balance, a series of preferential agreements were signed, first with France in 1866, and thereafter with Spain, Austria and Germany. They led to a significant diversion of trade with Britain[15], and to a remarkable expansion in primary exports. This export boom helped to raise agricultural productivity and generated substantial earnings that financed a surge in investment in banking and manufacturing, according to today's version of an "export-led growth" (M.V. Cabral, 1979, p. 20).

The Portuguese trade policy followed more or less closely the dominant trends in the international scene. Between 1850 and 1880, free trade prevailed, especially in Britain, where most duties were unilaterally removed after Gladstone's 1860 budget. This environment must have influenced the Portuguese government not to raise the specific duties on cotton clothes, even after the American Civil War has caused a sharp increase in world prices. This erosion of tariff protection was at the origin of a renewed debate with the protectionists that influenced contemporary writings. Bilateral preferential agreements were also current between European countries. The fact that the m.f.n. principle was included in these agreements was a powerful instrument for the generalized reduction of tariff levels.

However, because they were of short duration and bilateral, these treaties were subject to a series of tactical bargaining manoeuvres that allowed for the gradual re-establishment of protectionism in international trade relations[16].

1.2. The first sustained effort of import-substitution

The reversal of the liberal tendency in European trade coincided with the end of the "export-led growth" in Portugal. Increasing levels of productivity in the agriculture of the New World led to a general fall in the prices of meat and maize that drove Portuguese similar products out of the European market. The loss of preferences affected negatively the exports of wine, cattle and vegetables. In Brazil, payments difficulties and the increasing inflow of non-Portuguese migrants led to a significant decline in the exports of traditional foodstuff (olive oil and table wines). The shift in development strategy regarding agriculture became apparent in 1889, when protection to domestic corn was reintroduced. This measure had been demanded by landowners, who became dissatisfied with the poor prospects for agricultural exports.

As new factories were set up during the period of prosperity especially around the urban zones of Lisbon, Oporto and Braga, an increasing pressure built upon the government in order to raise infant-industry protection duties. As a result, several tariff revisions were carried out in 1882, 1885 and 1887. Finally, in 1892, Oliveira Martins launched an openly protectionist tariff, with a two-fold purpose: to increase nominal protection as a compensation for the increase in labour costs due to corn protection, and to raise revenue for ever-increasing public expenditures[17]. The level of duties was very high, ranging from 75 to 250 percent for most manufactured goods of final consumption. The rates were moderate for imported inputs and machinery. The average tariff rate increased from 23.4 to 27-28 percent between the periods 1889-92 and 1893-1900. In the following decade, that rate declined to 23 percent, as specific duties were eroded by inflation, but the officially protectionist mood remained as dominant for decades.

The sharp devaluation of the domestic currency, the "Real", against Sterling — 36 percent in the eight-year period following the decision to suspend its external convertibility in 1890 — also contributed to increase the protection afforded to domestic industrial production. Portugal's balance of payments was traditionally positive, due to the emigrants's remittances from Brazil, which reached 4 million pounds in some years. When the parity of the Brazilian currency against Sterling declined in 1890, the immediate effect was a fall in the Sterling value of Portuguese current receipts, which

was aggravated by a record trade deficit in that same year (5.1 million pounds, or 30 percent of total foreign trade). Consequently the course of the Portuguese and Brazilian currencies showed a parallel evolution[18].

A third factor was the control of the markets in the Portuguese territories of Africa under strict protection vis-à-vis third countries[19]. After Angola and Mozambique had been effectively occupied, white settlement began, and as a result the exports of consumption goods (especially cotton textiles and wine) increased rapidly. In 1900, the share of colonies in Portuguese exports reached already 18 percent[20].

It is possible to infer from the available statistics on corporate investment, consumption of energy and imports of intermediate goods, that industry as a whole knew a period of remarkable progress during the two last decades of the 19th century, and especially after 1890. It was especially significant in those sectors selling non-durables to the domestic and colonial markets, but two export branches expanded considerably during the period: cork manufactures and tinned fish. Some new industries producing intermediate goods were set up after 1890. The domestic production of concrete, that found a market in expanding urban building, started in 1893. This same market stimulated the development of the glass, wood and ceramic industries. The production of fertilizers started in 1899 and expanded rapidly in connection with the reinforcement of corn protectionism. According to figures supplied by M.V. Cabral (op. cit., p. 324), by 1914 Portugal had decreased slightly the development lag in relation to the main industrialized countries[21].

This process of industrialization soon revealed many of the characteristics associated to highly protected import-substitution in the "latecomers". While imports of raw materials and machinery increased rapidly, manufactured exports were confined to slow growing demand products. In the majority of the sectors oriented towards the domestic market, production was scattered among a very large number of small-scale units, making use of old-fashioned technology and unskilled labour resources. Unable to compete in foreign markets, the growth and modernization of such sectors was dramatically limited by the small size of the domestic (and colonial) markets. Consequently, the trade balance suffered increasing deficits: the export-import ratio fell from 80% in the 1870s to 68% in 1882, 51% in 1900 and 32% in 1920[22]. In an attempt to stop this tendency, the Government resorted to more vigorous agricultural protectionism. In 1899, a law was passed which prohibited corn imports until domestic production was entirely sold out (the so-called "law of hunger"). This regime enabled the domestic corn

producers to earn a substantial rent above the world price level, and bakeries had to repercut the cost increase in higher retail prices for bread. Severe social conflicts emerged frequently in the industrial sector which continued well past the establishment of the Republican regime in October 1910.

Industrial social unrest, limited prospects for market expansion and the diversion of capital to colonial and financial enterprises, all factors explain why industrial progress stagnated after the turn of the century. Import-substitution remained largely confined to consumer goods. Some attempts to extend import-substitution to sectors producing intermediate goods or machinery failed, either because of indifference from the government or opposition from consumer industries.

The First World War acted as a second breath for the import-substitution process. Agricultural exports to the most affected countries knew a surge after 1915, while a spontaneous non-tariff protection was finally afforded to some industries producing tools and machinery[23/].

However, the effects of the participation of Portugal into the war proved to be damaging in the long term, both for economic and political reasons. Whereas the most important European countries had introduced direct income taxation to finance the growth of public expenditure Portugal was caught unprepared financially for a war effort of such proportions and financed it through heavy borrowing, both from home and abroad.

As a result inflation soared, so that by 1920 the price level of 1900 had been multiplied by 12 (whereas the nominal wage index increased by less than 4.5). The exchange rate was brought down to unrecorded levels. In 1923, the nominal currency, now the "Escudo", had fallen to 2 1/2 d., less than 1/20 of its par value. National capitals fled out of the country, by illegal means (over/underpricing of foreign transactions). These capitals formed, together with the Brazilian remittances kept in the City of London, a formidable pool of reserves aiming at speculative gains with the course of the Escudo. As a result, the central authorities lost effective control over the exchange rate[24/].

Short-term Treasury difficulties were solved through "easy" money-lending by the Bank of Portugal — the "floating debt". As a result, money supply mounted rapidly from 87 to 791 million Escudos in a few years. It surely stimulated inflation and aggravated the solution of economic problems, but allowed for an artificial and temporary expansion of economic activities. Banking in particular enjoyed a period of euphoria during the post-war years, by trading speculatively in Government bonds. Industrial activity also enjoyed

from cheap credit, which allowed for investments in enlarged capacity (chemicals, fertilizers, concrete) and the establishment of some modern branches.

Industrial activity was indirectly benefited also by the so-called policy of "political bread". In 1914, the government liberalized partially the imports of corn in order to bring down its domestic price. Later on, direct subsidies were afforded to the bakeries in order to achieve a social policy objective — to halt the deterioration in the living conditions of urban workers. In fact, this policy led to a substantial improvement of the domestic terms of trade favourable to manufacturing[25]. The supply of foodstuffs to the domestic market was severely reduced between 1919 and 1923, thereby raising the so-called "question of subsistence". The vested interests in agriculture pressed for a drastic change in policy, involving greater protection to corn and a more rigorous control of inflation. A generalized sentiment of distrust relative to the urban classes, industrial activity and the "politicians" developed in the countryside, mixing economic with religious and political considerations.

The general orientations prevailing among Republican leaders favoured industrial progress. However, due to the political instability and chaotic finances, the governments were powerless to promote that progress through direct instruments of economic policy. Commercial policy consisted in a non-articulated series of import licensing regimes, which was inneffectual in reducing the trade deficit. Customs duties, established in "Gold-Escudos", were unaffected by depreciation and since 1892 could hardly be raised[26].

The artificial expansion of domestic industry and services fed by uncontrolled supply of money knew a sudden halt in 1923, when a conservative government, led by Álvaro de Castro introduced more rigour in public finance. The policies regarding corn and the production of bread were /abandoned, interest rates were increased and public expenditure sharply reduced. Together with "open market" operations and the sale of silver in the London market, these deflationary policies succeeded in stabilizing the Sterling value of the Escudo at 94$75. However, this dramatic change in policy was followed by urban unemployment, industrial overcapacity and the bankrupcy of many banks and manufacturing firms. Besides, an ambitious tax reform, that had been introduced in 1922, met very strong reaction from tax-payers and administrative difficulties, and could not be achieved. Again in 1924/25, after the collapse of the Castro cabinet, public finance reached a state of complete disarray amidst a very troubled political and social situation.

Permanent unrest continued until May 1926, when a military "coup" took control of the country. Originally intended to reestablish public order,

as other military interventions before, the movement soon developed into a new regime of conservative and authoritarian nature, under the leadership of Salazar.

1.3. From 1926 to 1945: the New State and the resistance to industrialization

The New State, as it became known after the 1933 Constitution, drew its philosophical foundations from the Roman Catholic social theory, with its emphasis on "a corporate form of social life", as well as on Lusitanian integralism, a political doctrine that opposed the positivism, egalitarianism and atheism associated to the Republican regime[27/].

The new regime feared that industrial development disrupted "basic social equilibria", particularly the relations between the new urban classes and the landowners'oligarchy. Consequently, the general orientation towards industry was restrictionist, which is well revealed in three important economic policies: the budgetary policy, the development plan and the industrial licensing system.

Instead of an anti-cyclical policy instrument the State budget was considered as an accounting procedure. As a matter of principle, current expenditures would not exceed in any circumstance current receipts. Occasional superavits together with cautious domestic borrowing would finance "extraordinary" expenditures, like development, military effort and emergencies. Budget equilibrium was maintained at a low level and public investment occupied a very low share of the total. Current expenditures in every Office were strictly controlled by special branches created by the Finance Minister. Strict financial discipline in the years after 1926 led to a succession of budget surpluses, which made possible the extinction of the floating debt in short term (that represented one third of the total public debt). As a result, the discount rate fell from 6.75 to 3.5% and successive optional loan conversions could be achieved at a decreasing cost. In 1932 the war debt was consolidated.

· Financial equilibrium could not have been achieved without the imposition of extraordinary taxes. But soon they were replaced by an entirely new tax system, that had been elaborated by Salazar himself. Instead of a substantial rise in fiscal revenue, the new system sought a regular inflow of tax yields. It rested upon indirect taxes for the majority of revenue and a set of schedular direct taxes. The basic principle was to tax the presumptive (fixed) income, instead of the actual one. While providing a secure source of revenue, this rule deprived the fiscal system from any counter-cyclical role. In depressive periods, when it would be necessary to alleviate taxpayers, the tax yield was higher than necessary and therefore

reinforced depressive tendencies. In inflationary periods, pres umptive income would be below the effective earnings, and therefore the actual tax incidence would decline, which contributed to reinforce inflation.

While inferior in purely economic grounds, the budgetary policy, maintained pratically unchanged for thirty years, served several social and political goals. At the domestic political level, "... the continued achievement of a balanced budget was a repeated demonstration of efficiency and competence. The psychological myth of one hundred years of liberalism had been finally achieved in practice: the almost impossible budgetary equilibrium"[28]. Socially, this policy met the interests of the agrarian oligarchy. State support to urban industries would not be financed henceforth indirectly, either by fixed-income earners through uncontrolled inflation, or by wealthy taxpayers through progressive taxation. Development expenditures were considered as a residual which guaranteed a weak involvement of the State in the (undesired) transformation of the social and economic order. At the diplomatic level, a balanced budget and a strong currency were the mainstreams of a regained external economic independence, that was proudly invoked as one of the triumphs of the regime.

From 1935 to 1950, most public expenditures in development were covered by the so-called Law for Economic Reconstruction. Rather a piecemeal collection of public investment projects than a proper development plan, this law defined the criteria for public investment. From the records of the expenditures made under this Law, including those carried out under departmental supervision, it is possible to conclude that support to industrial activities represented a very minor role in those criteria. Agriculture, public works and export trade, on the other hand, ranked high in priorities[29]. Strictly defined development expenditures, i.e. excluding military and colonial undertakings, represented a very minor share in GDP, that ranged from 1.2 to 3 percent approximately. Among these, 5 percent was allocated to energy, 44 percent to transport and communications, 21 percent to agriculture and the remaining to public buildings. A very small share of the investment in infrastructures could be said to generate external economies for industry. 69 percent of the expenditures in transport and communications were reserved for the improvement of external access (ships, aircraft, harbours); and, in school-building, the professional and university levels did not obtain more than 13 percent of total investment.

A system of industrial licensing ("condicionamento industrial") was introduced by law in 1931, apparently as a temporary measure of protection against the effects of the Great Depression. Later on, in 1937, the system became a permanent feature of the New State's economic environment. It was

used as a discretionary system of control over private investment decisions
in manufacturing. Prior authorization from authorities was required for set-
ting up or relocating an industrial plant, or for reopening a plant that had
suspended operations for more than two years. Investment designed to increase
the capacity of an existing firm also required prior approval. Applications
for new investment were previously published, so that any interested party
in the relevant industry might comment on or object to the granting of an
authorization.

According to Law 1956 of 17 May 1937, the system served two purposes:
to avoid the "unnecessary costs of competition", and to achieve an efficient
scale of operations. Portugal, it was argued, had few resources and a very
limited market for consumption. Proposed increases in capacity of a specific
sector should only be authorized insofar as the existing firms could not
fully match actual demand. Otherwise, overcapacity and close-downs would
occur, involving the waste of resources. This conception is wholly erroneous,
                   the idea of
because it rests on/a static pool of resources to satisfy an existing demand.
It ignores that the same demand can be met by less resources, if scale econo-
mies are exploited or technology improvements are introduced. In fact, the
system, as it was applied, prevented the emergence of both dynamic effects.
When it was introduced, industrial structure was already very atomized. By
preventing the concentration of small units, it contributed to freeze that
            of
structure/suboptimal plant sizes. The system guaranteed a safe inflow of
profits to every existing firm, independently of their market performance,
and consequently it discouraged technical innovation and did not promote
enterpreneurship..True, this security of income might attract investment to
new industrial activities. However, the spirit that prevailed, at least until
1945, in the appreciation of industrial applications was clearly not favour-
able to undertakings that could expand substantially the capital engaged in
manufacturing activities.

Despite its conservative and nationalist philosophy, the New State
did not accomplish an entirely isolationist policy. The strongest action
taken in order to isolate the economy from external influence was the Law
on Nationalization of Capital, passed in 1943. Its main provision was the
insistence that Portuguese firms alone could run public services or engage
in other activities of "fundamental interest to the defense of the State
or the economy of the nation". The Law's immediate effect was to get some
enterprises to augment their share capital in order to bring about "Portu-
galization", and not straight nationalization of foreign firms, which con-
tinued in large number, especially in the mining and services sectors. The
tariff reforms carried out in 1929, 1930 and 1938 confirmed the general

protectionist nature of previous tariffs. But, on the other hand, the Portuguese reaction to the Great Depression was very moderate in relation to other countries. Very few quantitative restrictions were imposed, perhaps because the financial discipline just introduced and the already heavy protection had shed the domestic economy from the main disturbances. In 1933, at the bottom of the Depression, registered unemployment in Portugal was less than one percent[31]. Financial equilibrium allowed the Escudo to return to external convertibility in 1931, although for a very short period. In September, Britain pulled out of the Gold Exchange Standard and Portugal followed her immediately. The Escudo remained pegged to Sterling, for reasons of national prestige and because Britain was still the most important export client. As there was no need to maintain an artificially high exchange rate, the use of controls was unnecessary. The volume of foreign trade did not fall throughout the 1930s, as in so many countries of Europe and Latin America. Due to emigrants' remittances and colonial trade surpluses, and despite a continuous trade deficit, the gold reserves did not stop to increase — from 1,926 thousand pounds in June 1931 to 8,339 thousand at the end of 1937.

At the end of World War II, the New State could show remarkable achievements in terms of domestic and external stabilization, together with a reasonable growth performance, given the particular historical circumstances. Between 1938 and 1950, GDP growth in real terms proceeded at an annual rate of 2.8 percent. Manufacturing industry, though, grew at a rate of 3.6 during the same period, which was clearly below the rates achieved elsewhere, especially in the Latin American and European industrializing countries. Between 1930 and 1940 the industry's share in labour employment stagnated at the level of 20.5 percent. More importantly perhaps, no major undertaking had been launched in industry, and the industrial structure remained practically the same as it were in the mid-twenties. Production and employment were scattered by many small scale units, unable to generate or even absorb modern technology. Investment and internal savings were weak, and the production process was based mainly on unskilled labour and simple processing of raw materials. Production diversification was still at an incipient stage, with domestic supply consisting almost totally of non-durable consumption goods, such as textiles, shoes, furniture and foodstuff, and some simple inputs into agriculture and building, such as concrete, glass and fertilizers.

1.4. From 1945 to 1959: The New State and the promotion of industrialization

The Second World War created conditions that favoured a change in economic strategy. Due to foreign supply shortages, a fortuitous process of import-substitution took place, while exports of foodstuffs and of strategic minerals like uranium and wolfram expanded very fast. Large reserves of gold and foreign currencies were accumulated as a result. New production techniques were adopted and professional skills improved with the extension of the military service.

The new strategy was influenced by the ideas of Ferreira Dias, as expressed in his book Guideline[32/]. The State should adopt a consistent and active role in order to promote economic development, explicitly defined as a sustained growth in the quantity and quality of goods offered to consumers and a general improvement in the technological conditions of production. Manufacturing was conceived as the "engine" of the development process, thereby refutating the myth of Portugal as an agrarian society by imposition of nature. The benefits of foreign trade were not neglected, but the essential basis for industrial expansion should be the domestic market. The import-substitution process should proceed to the so-called "base sector", i.e. those branches producing intermediate goods for industry and agriculture. The branches producing final consumption goods, that satisfied a substantial share of the domestic market, should be reorganized, in order to make them more competitive, in terms of price and quality.

Commercial policy played an active role in this fundamentally inward-oriented strategy. Exchange and quantitative restrictions were adapted to the evolution of international economic relations, whereas tariff policy maintained its traditionally high level of protection. Its role was reinforced by the "domestic" instruments of industrial policy, as public investment, licensing and incentives, as well as monetary and financial policies. To these we will dedicate the next pages, before examining in more detail the characteristics of commercial policy during the period.

a) The corporative framework within which the Portuguese economy evolved combined two characteristics: predominantly private ownership of the means of production and extensive State control (mainly by bureaucratic means). Except in a few cases justified for defense purposes, the State should abstain from participating directly in industrial production. It held minority positions in some corporations with the view to assure other

shareholders of their future profitability. It granted monopolistic (or restricted competition) privileges in the market. It afforded sufficient protection vis-à-vis external competition. It financed and managed the creation or improvement of the infrastructure. And it gave incentives in the form of a fiscal and credit facilities. In these manyfold ways, the New State, even without establishing a very large public sector, had almost entire control upon the industrial development of the country. Simultaneously, it developed a close and mutually beneficial relationship between high-ranking public officials and the country's leading business groups[33].

During the First Development Plan (1953/58), the largest share of public investment was oriented towards the improvement of infrastructures in transport and communications, and in power production. This self-limitation to infrastructure undertakings during the First Plan was criticized by several economists. One of them, X. Pintado (1964, p.201) suggested that the lack of technical know-how and of enterpreneurial spirit were a greater handicap to the development of some industrial branches than shortage of capital. By launching new ventures in cooperation with private initiative in those fields where complex processes of production were required, the State could make profitable use of its unique ability in incentivating research and highly qualified training.

During the period covered by the Second Development Plan (1959/64), there was clearly a shift of emphasis from infrastructure to the "base" industries in the orientation of public investment. It was then more frequent for the State to participate directly as shareholder in some large enterprises recently created in the petrochemical, concrete, chemical and other sectors. These "base" sectors were granted priority for the allocation of public investment funds, and saw effective investment exceed the planned amounts[34].

The Second Plan contained an implicit strategy of balanced growth, in the sense of the "big push" theory developed by Rosenstein-Rodan. The State should provide conditions for a simultaneous large-scale expansion of a selected range of economic activities in order to overcome indivisibilities in the production process, both on the supply and the demand sides[35]. This strategy had important consequences for the future course of industrial development. Balanced growth strategies require almost prohibitive tariff protection for the "base" sectors and result in resource allocation patterns that are contrary to the relative abundance or scarcity of productive factors. In Portugal, those sectors adopted highly capital-intensive technologies, which did not help much to absorb surplus labour in agriculture, and because

their prices were internationally uncompetitive (except in the paper pulp industry) their production was oriented exclusively towards the domestic market, with the resulting limitations. Furthermore, their uncompetitive costs were reflected in higher costs for the consuming industries, thereby propagating into the whole economy their basically inward orientation.

The Second Plan contained two additional innovations relative to the First Plan. In the first place, it expressed in quantitative terms the target rate of growth. Despite the absence of any consistent set of policy measures designed to achieve that target, the quantification allowed for an ex post evaluation of the Plan's efficiency. In the second place, the Plan became more incentivating and less indicative towards the private sector. The government announced which sectors were considered as priority in national development and granted financial and tax incentives in order to attract private investment to them. Financial incentives consisted in preferential authorization to issue shares or debentures in the domestic capital market, in public guarantees to credit raised in foreign countries, and in long term credit attributed at low interest rates. The co-ownership of capital by the State in some of the largest entreprises allowed for the attribution of capital grants in a more or less covert way. Tax incentives included accelerated depreciation allowances, tax holidays, reductions and exemptions on some direct taxes (namely, in order to incentivate the re-investment of profits) and several duty exemptions (especially in the imports of machinery and raw materials).

The main instrument of State control over private initiative remained the system of licensing. According to the new "industrialist" policy of Ferreira Dias, it should be used not to block industrial expansion and modernization, but instead to create profitable conditions for investment in new sectors, by means of "market reservation", and to promote the concentration of firms into large-scale units, able to exploit the economies of scale[36]. Industrial licensing became somewhat less restrictive after Law 2052 of March 1952. Free initiative was explicity recognized as the rule, and State control as the exception. A list of industries was published to limit the powers of the authorizing body, and technical licensing was formally distinguished from economic licensing. However, as Ferreira Dias had to recognize later on, this Law remained much behind his reformist plans. The vested interests that might have been affected by a greater liberalization reacted to change with success. Almost all relevant industries were subject to control, which covered the operations of establishment, relocation and reequipment[37].

Fiscal and monetary policies consistently privileged short-term price stabilization, at the expense of higher growth. Domestic prices were successfully maintained at very stable levels for a long period[38/]. However, due to the absence of built-in stabilizers in the tax system, this objective had to be achieved by means of a strictly balanced budget combined with an excessively cautious monetary policy. Foreign reserves accumulated during the War would have allowed Portugal to achieve higher growth rates during the 1950s, had a less contractionist policy been followed. The obtention of funds for public investment purposes had traditionally been strictly conditioned by the Ministry of Finance to the need to avoid strains in the monetary and financial fields. Expenditure cuts were generally favoured relative to borrowing either from the public or from the banks. As we shall see below, such policies accentuated the deppressive effects of the international crisis during the post-war period, instead of counterbalancing them.

The Portuguese banking system had never been an adequate source of long-term credit for industrial investment. Commercial banks were geared to meet the short-term credit needs of commerce and industry, or to provide long-term credit for transaction in real estate. It was only in 1959 that a specialized investment bank for long and medium-term credit was created ("Banco do Fomento"), to serve the priorities established in the Second Plan. Since the private investment included in the Plan predictions was mainly influenced by the access to credit, the Bank represented an important instrument of channelling investment. The financial system was further improved by the extension of the operations of commercial banks and the State savings bank ("Caixa Geral de Depósitos") to long-term credit, and by the reactivation of the stock market.

b) In the immediate post-war years, Portugal found herself in an almost unique situation, within Western Europe at least. In a sense, it was a privileged situation. Due to Salazar's neutral standing during the War, Portugal had managed to attact foreign capital in search for a safe location[40/]. Exceptionally positive trade balances arose in years 1941 to 1943. However, the resulting accumulation of gold and foreign reserves did not exempt the Portuguese economy from some of the difficulties that belligerant countries had to suffer in the post-war years. In those foreign markets whose currencies had been overaccumulated, war-damaged supply was unable to meet Portuguese demand for manufactures, especially equipment goods. Eventually only the US industry had the capacity to supply them at the time, but Portugal, just

like other European countries, lacked US dollars for these large purchases. The situation of bilateralism and international unconvertibility impossibilitated the utilization of credit over one country for purchases from third countries. One solution might be the utilization of gold reserves, which had increased from 1,437 million Escudos in 1939 to 10,707 in 1946. However, Salazar, an economist who had been educated under the strict classical rules of early 20th century economics, only very late understood that the Gold Exchange Standard had come to a definitive end. Therefore, he hold to his hard currency policy and only once, in 1949, did the Escudo suffer a devaluation against the US Dollar by 10.5%.

Gold and exchange reserves were not used in order to finance the expansion of imported capital goods and therefore to stimulate domestic investment. Instead, they led to an increasing domestic money supply which, combined to a fast increase in the import prices of many essentials, generated strong inflationary pressures. To counteract these, the government adopted deflationary policies the objective of which was to withdraw excessive purchasing power from the economy.

Whichever the domestic policy, the Portuguese government, as all other European Governments during the post-war period, had to adopt a number of quantitative trade restrictions and exchange controls in order to allocate the existing foreign reserves. In the summer of 1947, general exchange controls were re-established for current transactions, and an increasing number of goods were subject to import licensing restrictions. On February 1948, a general system of registration of imports and exports was introduced, which was due to remain a central piece of commercial policy, with some adaptations, until the present date. All imports above a specified threshold were subject to previous registration, and the deliverance of the registration form (the "Boletim de Registo de Importação" or B.R.I., for short) to the customs enabled the merchandise to be cleared. All exports were also subject to registration and, in addition, export proceeds, as well as exchange receipts from abroad and capital transactions must be surrendered.

Portugal participated halfheartedly in the post-war movement for international economic co-operation. Not until the beginning of the 1960s did the country become a member of the IMF and the GATT. However, it was a founding member of the O.E.E.C., and this situation proved to be notoriously influential in the future developments of Portuguese trade and exchange policies. Thanks to her first-minute membership, Portugal could benefit from the Marshall Plan, share in the E.P.U. discipline of inter-European settlements, liberalize trade and exchange regimes, and participate since the

very beginning in the debates that gave origin to the partition of Europe in two economic zones, thereby securing a place in one of them.

In 1950, Portugal started to receive American aid under the Marshall Plan. In quantitative terms, this assistance did not play the significant part in the development process that it did in other European countries. Combining loans, grants, and drawing rights, it amounted to 51.2 million US dollars in the period 1949-52, which was more or less the same as the amount received by Spain, but represented only 7, 23 and 3 percent of the aid given to Greece, Turkey and Italy, respectively [41]. However, the Plan gave an indirect stimulus to Portuguese exports through its contribution to European economic recovery, and also helped to bring about a more positive attitude towards economic problems on the part of the Portuguese authorities. The aid had to be allocated, and it was partly for this purpose that the "Banco do Fomento" was created. Furthermore, it was necessary to justify investment projects in terms of economic rationality, and this gave rise to an increased learning and application of new methods and techniques of economic analysis, among a young generation of government officials and academics. [42].

The European Payments Union (E.P.U.) was a regional monetary agreement that started operation in 1950, whose objectives were the automatic compensation of deficits in inter-European transactions and the automatic cancellation of all reciprocal deficits, with less resort to dollars and gold as means of payment. To this purpose, the E.P.U. issued special units of account that were of mandatory acceptance in intra-area settlements, up to a specified proportion of credits.

Due to price increases in some exported raw materials during the Korean War, and to the limited supply capacity of most Western European countries, Portugal accumulated superavits vis-à-vis her EPU partners, much in excess of her initial quota, during the period from 1950 to the first quarter of 1952. According to the negociated proportions, only a minor share of those net superavits would be received in gold, the rest being credited in EPU units of account, which were not transferable between members and could not be used outside the Area. In order to alleviate the "dollar shortage" problem, by making the best use of such superavits, the Portuguese authorities adopted a series of control measures designed to divert imports from the dollar to the EPU area, and to divert exports in the opposite direction.[43].

The recovery of the EPU economies, the effects of this discriminatory trade and exchange policy, and the fall in the price and quan-

tity of Portuguese exports after the second quarter of 1952 all contributed to a continuous decline of the cumulative credit position of Portugal inside the EPU. After 1955, the net position became negative and continued to deteriorate until the end of the EPU Agreement in 1958.

The EPU Agreement became unnecessary as soon as the European monetary authorities agreed in dispensing with bilateralism and exchange controls on current transactions. In December 1958, after the first payments deficit incurred by the USA, and a favourable economic performance in most OEEC countries, fourteen European Governments announced the adoption of external convertibility for their currencies, in respect of current transactions.

Several reasons explain why Portugal always took a favourable view of a multilateral system of payments (even before 1958), naturally being among the group who first adopted it. The balance of payments enjoyed a stable situation, the Escudo had not to be supported by quantitive restrictions in order to maintain its official parity against the dollar (the same since the 1949 devaluation — 28$75). Multilateralism allowed Portugal to use her reserves in European currencies in order to pay for dollar-valued goods, without having to resort to discriminatory distinctions in trade. Finally, the new regime stimulated the growth of international trade and offered good prospects for the expansion of Portuguese primary exports.

The external convertibility of the Escudo culminated the process of liberalization of exchange controls and quantitative restrictions that had been initiated in the late 1940s. In July 1955, the blocking of export proceeds was abolished. One month later, a list was published of 110 commodities for which import licenses permitting imports from the dollar area would be granted freely. At this point, the liberalization rate for the dollar area was around 53%, whereas for the EPU area, and for reasons already explained, it reached 93%. The elimination of individual licensing schemes was gradually pursued until 1960, when only a list of specified agricultural products and raw materials was subject to them. It is interesting to note that Portugal reached one of the highest rates of trade liberalization inside the OEEC (the average rate in 1955 for the whole area had been 86%).This apparently liberal performance was not in contradiction with the inward-looking strategy of industrialization that was being followed domestically, because once QRs had been removed, a highly protectionist tariff remained which kept imports under control. In fact, and except for the already mentioned reason of "dollar shortages", it was convenient for Portugal to accelerate the change from a policy based upon QRs to one essentially based on duties. The first reason for this was

fiscal: import licenses and quotas were issued without auction, whereas tariffs raised fiscal revenue. The second reason was that, being an exporter of mostly non-essential goods, like wine, canned fish, or cork, and a relatively minor export market for her partners, Portugal could not achieve bilateral trade agreements, based on mutual elimination of QRs, in favourable conditions. In order to liberalize most of the import controls on her exports, Portugal had to retribute with almost total liberalization of her import trade. The third reason is that geographically discriminatory licensing led to trade-diversion inefficiency affecting especially the industrial users of imported equipment and raw materials.

c) The efficiency of the Portuguese Tariff to achieve industrial promotion objectives had been seriously questioned by Ferreira Dias. He argued that, because the Tariff (the last revision of which had been done in 1938) had a primarily fiscal role, it could not be properly used as an instrument for industrial development. Firstly, the duties that imported inputs had to pay (mostly between 3 and 10%), even when they did not compete with any domestic product, raised production costs, and distorted the technically optimal combination of inputs. Secondly, the nominal protection afforded to import-competing domestic manufactures was very high (between 70 and 100%, or more) [44/]. Exaggerated levels of protection discouraged the development of productivity and the introduction of new technologies.

Thirdly, tariff reforms were uniquely determined by the Ministry of Finance, on the basis of dominantly financial considerations. The suggestions made by the Industry Department were not binding. Also the role of the National Assembly or of the Corporative Chamber in this respect (as for all the tax policy) was practically irrelevant.

Ferreira Dias favoured a more liberal tariff policy, to be adopted in a future reform. The duty rates of those products whose domestic production it was convenient to incentivate in an infant stage should be set temporarily at a reasonable level, not exceeding 20%. The high duties for long-established productions should be brought down progressively. It was expected that customs revenue increased as a result of expanded imports of such goods, following the abolition of prohibitive duties.

As many other Dias' proposals, this tariff reform was implemented only partially, as shown by a detailed study on the 1950 Tariff, which includes the results of an opinion survey among industrialists, made in 1957.

Table I.1

Results of an opinion survey among industrialists
about the Tariff — 1957

Opinions about duties	Raw materials	Textiles	Machinery	Semi--manufact.	Total
Sufficient	9	1	--	6	16
Too high	25	5	3	19	52
Drawback asked for	2	-	-	-	2
Insufficient	2	25[a]	27	17	71
Deficient classification	6	-	9	5	20
Deficient weight system	-	5	3	-	8
Quotas asked for	1	1	-	3	5

Notes:

a) Most of these opinions relate to the production of a single
   product — flax yarn.

Source: Associação Industrial Portuense (1959)

This pattern of opinions can be better appreciated against the average
levels of tariff protection, as calculated from the same Inquiry. "Ad
valorem" equivalent rates were estimated as the percentage of the specific
duty over the average unit value of the respective import product. From the
observation of Table I.2 we may conclude that in 1957, the Portuguese Tariff
maintained its highly protectionist nature. 60% of the articles not classified
as raw materials were nominally protected with rates higher than 20% (the
limit of what Ferreira Dias in 1945 had considered to be a "reasonably
good" protection!). Those sectores where the largest share of Portuguese
manufacturing activities — textiles, food and beverages, and semi-manu-
factures — is concentrated, are the most heavily protected. As for machine-
ry, duties are still low by comparison with the other sectors. But the
manufacturers' complaints were pre-announcing a rise in duties in the
coming tariff reform. We confirm the impression that duties on imports of
raw materials should still constitute an issue of contention between indus-
trialists and the Ministry of Finance. Almost one third of the products
classified as raw materials had to pay duties in excess of 10%. In this
connection, one has to appreciate the liberalizing effects of the tariff
preferences opened in favour of products originating in the Overseas
Territories, by Decree nr. 41026 of March 1957. Such products payed only

Table 1.2

Distribution of tariff duties over intervals

of ad valorem equivalent rates — 1957

Classes of tariff rates	Raw materials	Textiles	Food & Beverages	Machinery	Semi-manuf.	Total
Duty-free	3	0	0	0	5	8
0 - 10	282	19	15	79	71	466
10 - 20	87	25	11	92	74	289
20 - 30	40	31	10	54	71	206
30 - 40	19	22	9	16	63	129
40 - 50	8	14	6	7	38	73
50 - 100	12	26	23	4	41	106
100 - +	3	11	10	0	5	29
No imports	63	39	13	34	28	177
Special reg.	3	9	3	3	6	24
TOTAL	520	196	100	289	402	1,507
Average *	11.8	21.3	38.2	15.6	20.4	20.8

(*) – Calculated as the average of mid-points weighted by the number of terms in each class of tariff rates. Undervalued, because rates higher than 100%, and items with no imports or with a special regime were not included.

Source: As in Table 1.1

30% of the customs duties included in the General Tariff, and some, such as tea, cattle, unworked wood, fruits and fish were totally duty-free[45/].

This distribuition of nominal tariff rates allows us to infer the following conclusion

(i) The "made-to-measure" approach to tariff policy seems to have been prevalent among Portuguese authorities, as the dispersion of rates is very wide, and duties are higher where domestic production is more concentrated.

(ii) Tariff protection was conceived as a permanent support to domestic production, independently of infant industry considerations, since duties remained high even in those sectors that were established for decades.

iii) High level of nominal protection for final goods were partly justified by relatively high duties on imported inputs, which had mainly a fiscal justification.

The fiscal role of customs duties deserves a closer look. In 1955/60, more than 22% of total revenue was collected at the customs (of which more than 3/4 corresponded to import duties). However high, this figure indicates a sharp fall since the pre-World War II situation, when customs revenue represented approximately 35% of the total [46/]. According to R. Musgrave's pattern (1969, p. 126) the Portuguese economy was in transition between the early and the mature periods of development of the tax structure. However, the   actual values of the shares of indirect taxes and of customs duties in total revenue in Portugal during the period 1955/59 are clearly above the expected values from the cross-section regressions calculated by R. Musgrave for a world sample of 40 coutries in the 1950s. The actual share of indirect taxes in total revenue in Portugal was 60.7%, and the expected value 55.3%. The share of customs duties was 22.1%, against an expected value of 15.4%. This comparison suggests that, in relation to the world average pattern, the development of the Portuguese tax structure was retarded. These results can also be justified by such circumstances as the high imports/GNP ratio and the atomized structure of retail trade and manufacturing in Portugal.

d) The Portuguese economy in the late fifties was highly dependent on trade, particularly with the Western European area. Due to a particular combination of natural resource endowments, more appropriate to generate export earnings than to promote domestic industrialization, the Portuguese economy in the late fifties was the most "open" among the semi-industrialized Southern European economies. The foreign trade/GNP ratio was then 37%, whereas Spain, Greece, Yugoslavia and Turkey had values of 15%, 22%, 11%, and 10%, respectively, and the OEEC average was 28%. The most important Western European economies accounted for approximately 60% of total Portuguese imports and 45% of exports. Therefore, the international arrangements concerning the future system of payments and the trade policies were, especially within the European area, of vital importance to Portugal. The government had favoured, for reasons already examined, a shift towards multilateralism. It also adopted from the outset a favourable approach towards the British proposal of converting the OEEC into a European-wide free trade area. This would be the ideal situation from the Portuguese government's viewpoint: One large unified market where Portuguese exports would benefit of tariff preferences against outside competitors, without having to adopt a common external tariff or to harmonize economic policies. Of course, the exposure of domestic industry to external competition would bring out its generalised

lack of competitiveness. Perhaps for this reason, the original British pro-
posal was limited to industrialized economies inside the OEEC, thereby
excluding Portugal explicitly [47]. However, the Portuguese representatives
at the OEEC circulated the idea that Portugal could participate in the
preferential arrangement to be formed, if allowed to maintain protection to
some of her domestic industries for some time, and to resort occasionally
to infant-industry protection. Consequently, the future arrangement would
not only create conditions for increased efficiency in established European
industries, but also contribute to the reduction of the development gap
among European countries. This point of view was later accepted in an internal
report drawn under the Maudling Committee, and in the negotiations that
finally led to the acceptance of Portugal as a member of EFTA [48]. The ne-
gotiations towards the formation of an European free trade area including
the recently created EEC came to a halt in November 1958, which placed the
Portuguese Government in a difficult situation. There would be no single
European market, and whatever the option to take, Portuguese exports would
always be discriminated against by at least one of the emerging trade blocs.

At the theoretical level, two more options might be considered besides
the one that was actually decided (joining EFTA). One was an association
partnership with the EEC; the other was to stay out of any preferential
arrangement.

The first alternative could not be accepted by the Portuguese govern-
ment as long as the model for such partnership were the Association Agreement
signed by Greece in July 1961. In the first place, the associated status was
considered as a preliminary step towards full membership, which would be
achieved as soon as the economic development of Greece reached comparable
levels to those in the EEC. Full integration implied a certain similarity
of political views between Greece and the Community (European union, par-
liamentary democracy), none of which were particularly cherished by the Por-
tuguese government of the time. Secondly, the establishment of a common
external tariff was the object of a detailed timetable to be implemented
after the third year of the Agreement. This would pose serious problems for
the Portuguese government, as a mutually preferential regime was already in
force regarding the Portuguese Overseas Territories. Either these were to be
excluded from the customs union between Portugal and the EEC, and the CET
had to be applied also to imports originating therein, or the Overseas
Territories had to participate in some kind of association with the EEC,
similar to the Yaoundé Convention. Either way, the bilateral preferences
would have to be given away, which was unconceivable for the Portuguese
government, both for political and economic reasons. Thirdly, the customs

union would also cover the agricultural sector, implying a common policy. This posed difficult problems, given the very low level of development of Portuguese agriculture, and the traditional type of policies that had been followed in the sector (low prices for subsistence goods, combined with subsidies to production).

The second alternative was never given much credit, as it seemed to condemn most primary exports to the negative effects of trade diversion by the EEC, without compensation. It might be argued, however, that EFTA was restricted to industrial trade and therefore only exceptionally would it treat agricultural products more favourably. Besides, even without preferential treatment, the exports of manufactured products could be expanded at a sufficient rate to compensate for the decline in primary exports, if an appropriate policy of export promotion were followed. The examples of Spain and Yugoslavia can be mentioned in this respect, as both reached higher export growth rates than Portugal during the 1960s, without the benefit of any preferential regime. However, the conditions that were negotiated between Portugal and her future EFTA partners turned out to be so favourable as to eliminate in practice the "outsider's anternative". Since full tariff preferences would be offered to Portuguese exports, without it being required that Portugal abolished her duties against competitive imports, the preferential scheme became in fact an equivalent version of the export subsidy scheme, with one important difference: that the cost would be borne by foreign consumers instead of the Portuguese consumers and government[49]. Furthermore, the twenty-year period that was fixed for the gradual abolition of duties on imports originating in EFTA not only permitted a slow adjustement of Portuguese authorities and industrialists to the reality of free competition but also made it certain that sooner or later the current projects of investment had to face a decisive test to their economic rationality.

Unfortunately, very few economists realized at the time the benefit that this latter implication of Portuguese membership of EFTA meant[50]. Consequently it is no surprise that the shift towards an outward-looking strategy of development has taken nearly 10 years to materialize. The "Official" interpretation of EFTA membership made it a purely _defensive_ tactic, intended to maintain market shares in Western Europe, without having to introduce deep reforms in the economic, political and colonial environment. It tended to emphasize the _immediate_ gains of membership, such as unbalanced preferences, the advantage of being a founder of EFTA for future bargaining, both inside EFTA and with the EEC, and the virtual monopoly situation for some agricultural products in EFTA markets.

CHAPTER 2

FROM IMPORT-SUBSTITUTION TO EXPORT-

PROMOTION — THE ROLE OF E.F.T.A.

This Chapter examines the evolution of Portuguese commercial and industrial policies throughout the ten-year period between 1959 and 1968. These benchmark years represent respectively the moment when Portugal became a member of EFTA and the moment when the first post-Salazar government took office.

Two different orientations influenced economic policy decisions and planning during this period. One was inherited from the previous period and privileged an inward-looking strategy of development centred around an interventionist and protectionist role of the State. The other orientation started to take shape progressively after the mid-sixties and emphasized the need to reach international standards of industrial competitiveness, in response to the commercial opportunities provided by EFTA membership and the new international obligations. The contradictory nature of these two policy orientations will be reflected in the hesitations and general lack of efficiency of industrial policy, and development policy in general, that became apparent especially towards the end of the period.

We start by examining some of the most relevant aspects of the EFTA agreement, from a Portuguese viewpoint, and the effects of the new international obligations that Portugal assumed in the early sixties. A discussion of the structure and evolution of the tariff policy, both in effective and nominal terms, will follow. In Section 2.5, the instruments of export promotion and the measurement of the bias against exports created by tariff protection will be presented and discussed. Finally, a brief survey of economic policies in other fields (foreign investment, planning, industrial licensing and incentives, fiscal policy etc.) will be presented in Section 2.6. Reference will be made to the disaggregated tariff data, that are assembled in Appendix B (tables included in this Appendix are prefixed by a capital "B", in order to distinguish them from the tables inserted in the main text).

2.1. The EFTA Agreement

Among the variety of aspects covered by the Stockholm Convention, six were of special interest to the Portuguese economy:

a) The elimination of import duties under Annex G. Portugal became a full member of EFTA on the basis of a consciously unbalanced arrangement, whereby her industrial exports enjoyed the full benefit of the area preference, while most of industrial imports from EFTA continued to pay just slightly less duties than in 1959. Four different tariff regimes were considered. A slower tariff-cutting timetable, which would leave Portuguese duties on imports from EFTA at 50% of their initial level in 1970[51/], would be applied to all imports competing directly with domestically produced goods that were not internationally competitive. The mechanism used to evaluate this last condition was known as the "15 percent rule". This rule stated that if, on the average of the last 3 years, the sales of any Portuguese product to foreign countries (excluding the Overseas Territories) exceeded 15 percent of its home production, the corresponding import duties would have to be placed on a faster tariff-cutting schedule, with successive 10 percent reductions until definitive elimination. Until 1972, Portugal could introduce or raise import duties for infant-industry protection, which should be completely eliminated, along with all other remaining duties, by 1980. Finally, those imports that did fall under any of these three cases should be subject to normal tariff-cutting in accordance with Article 3 of the Convention.

This one-way preference scheme agreed entirely with Portuguese claims that, due to its belated industrialization, the country was not yet able to participate fully in a free trade arrangement[52/]. But, if Portuguese industries were given the opportunity to develop under extended tariff protection, some of them would probably reach international competitiveness in a nearby future. According to X. Pintado (1964, p. 197), Portugal should make the best of this extended period by working in two directions. In first place, to develop those productions in which the country was supposed to hold comparative advantages, until they reached scale and maturity enough to withstand foreign competition. In second place, to develop industries producing intermediate goods, which would generate external economies for the industry as a whole. Therefore, the Portuguese claims did not run solely along the well-known "infant-industry" argument. They implied in addition that existing industries (some of which had long been established under strict protection) could only become internationally competitive, and enjoy "European" levels of productivity, if grounded on a coherent

network of domestic suppliers of services and material inputs. This is rather the "young economy" argument than the "infant-industry" one[53/].

Initially, 56 percent of Portuguese imports from EFTA in 1960 were subject to the slower timetable of Annex G, whereas 22.8 were included in the general schedule. The 15 percent rule was applied to imports worth 466 million Escudos in 1967 (7 percent of total imports). Until the end of the 1960s, Portugal used the infant-industry facility only eleven times, for imports representing approximately one percent of the total[54/]. These figures suggest that Annex G was mainly used in order to protect existing industries rather than new ones. The question whether or not those industries were reducing costs during the transitional period of protection and becoming internationally competitive will be addressed later on.

b) <u>The definition of agricultural products</u>. The EFTA Agreement was conceived for industrial goods only. Each member country had its own support policy for the domestic agricultural sector, and the harmonization of so many divergent interests would be unmanageable without a strong supranational element in the area. However, the a priori exclusion of agricultural products reduced considerably the benefits that Portugal might enjoy from the Agreement, as a large share of her exports to EFTA originated in agriculture.

Since most Portuguese exports did not compete with any major EFTA primary production, exceptions to the a priori exclusion of agricultural products were generously granted: canned fish, tomato pulp and concentrate, worked and non-worked cork, resins and wood. Among the major primary exports, only wine and fruits were included in Annex D (which listed those agricultural products excluded from area treatment). Later on, Portugal managed to improve EFTA conditions for her agricultural exports, by transferring some other items (especially dried fruits) to the general regime, and by negotiating bilaterally partial cuts in duties concerning Portuguese wines against the lifting of quantitative restrictions to specific agricultural imports into Portugal.

c) <u>Revenue duties</u>. The respect for members' sovereignty with respect to taxation was recognized in the Stockholm Convention, insofar as the domestic tax systems did not imply any disguised form of protection to domestic activities. Therefore, revenue duties were permitted as long as they con-

tained no protective element[55]. This element had to be eliminated, either progressively or in a single operation (to be carried out before 1965).

Revenue duties represented in Portugal a far greater proportion than in other countries: 16.7 percent of imports from EFTA in 1960 were charged fiscal duties, against an area average of only 2 percent[56]. Because Portugal had no internal general transaction tax at the time and many of these imports had direct domestic substitutes, the protective element must have been relatively high. Therefore, the effort that was required in order to replace these sources of revenue in Portugal was surely the greatest among EFTA members. By 1966, the percentage of Portuguese imports originated in EFTA that was charged fiscal duties had fallen to 5 percent. In addition to the decrease in final income imposed by the reduction of revenue duties, Portuguese fiscal authorities had to consider also the effects of general cuts in the tariff schedule caused by GATT negotiations, the formation of the "unified national space" (see below) and the liberalization in the EFTA context. These international compromises acted as a stimulus for Portuguese authorities to introduce in 1966 a general transaction tax. Therefore, even without involving any obligation to harmonise fiscal polices, EFTA membership helped in bringing about important modifications in the Portuguese tax system.

d) <u>Non-tariff barriers</u>. The EFTA approach to this question was largely similar to the one embodied in the GATT. It was recognized that alternatives to tariffs existed (in the form of export subsidies, exchange rate controls, quotas, tax rebates, etc.) which could have a powerful and distorting effect on the pattern of international trade, and that the use of such policies would have to be prohibited if the free trade area was to function correctly. It was also recognized that certain domestic support policies (grants, differential rates of taxation, etc.) pursued by individual governments with regional or industrial development objectives in mind, might also have an effect on the pattern of trade, similar to specifically trade-oriented distortions. In this case the solution could not realistically be one that denied participating governments relative freedom to determine their own economic policies. Consequently, two ways were conceived by EFTA to deal with non-tariff distortions. Either these were considered to affect trade intentionally, and in such case they should be eliminated, or they were not, and were permitted, as long as its effects did not "frustrate" the benefits expected by partners from the elimination of trade barriers. In this case, a conflict arose between at least two members, which had to be settled by bilateral negotiations — this is what V.

Curzon (1974, p. 96) calls the "cooperational approach".

According to the Convention, export subsidies and quantitative restrictions should be abolished in intra-EFTA trade, whereas government subsidies, public purchasing, restrictive business practices and technical barriers should be evaluated in terms of their specific distortive effect and delt with on a case-by-case basis.

As to quantitative restrictions (QRs), Portugal had already achieved a fair level of liberalization within the OEEC area (93.6 per cent in 1959). However, particular quotas were still in force for a variety of manufactured products[57]. With two exceptions, the gradual elimination of these quotas proceeded smoothly in accordance with Article 10 of the Convention and by July 1966 they were abolished, as far as EFTA suppliers were concerned. One exception concerned motor vehicles, for which a "gentleman's agreement" was reached in 1961 stating that the other members would not invoke the standstill clause (no. 1 of Article 10) in respect of the future actions taken by Portugal in order to introduce quotas in this sector. Consequently, imports of heavy vehicles into Portugal were prohibited since mid- 1963, and complete passenger cars were subject from January 1964 to severe annual quotas, additional imports being allowed only under the CKD formula. This agreement is an extension of the infant-industry facilities contained in Annex G. Another exception concerns the imports of certain iron and steel products where QRs remained in force until 1967. At this date, Portugal invoked the escape clause on difficulties in particular sectors (Article 20) in order to raise duties in such products. This claim was satisfied, but as a compensation Portugal had to shift items worth more than 300 million Escudos of imports from the Annex G tariff reduction schedule to the "15 percent rule" faster schedule[58].

As to other non-tariff barriers to trade, these could hardly become a major problem for Portugal, given the generally high level of tolerance existing in EFTA towards the specific development problem of the Portuguese economy, which required a greater degree of State intervention in the economy.

e) Export promotion measures. These measures can be grouped into two distinct categories. Those measures whose purpose is to give export goods a definite price advantage over competing goods, hypothetically produced under free trade conditions; and those measures that seek to compensate for any existing cost disadvantage borne by export goods (taxes, costlier inputs, etc.). The former category covers the export subsidies, strictly

defined in the EFTA Agreement[59/] and formally prohibited in intra-Area trade. At the time, no form of export subsidy was acknowledged to be practiced in Portugal. However, as EFTA rules were stricter than GATT's, an exogenous constraint was thereby imposed upon the choice of export promotion measures, when Portuguese authorities decided to give the issue greater importance. As to the second type of measures, EFTA membership influenced the future course of events in Portugal in two aspects.

Firstly, export duties had been a traditional instrument of commercial policy for decades, with a dual role. During the periods of supply shortages, as in the first Republic, they were used to discourage exports. During the periods of booming foreign demand for raw materials, as in World War II, they served as a source of fiscal gains. Article 8 of the Stockholm Convention stipulated the complete elimination of such duties as from 1962, and in 1965 a law was passed which abolished all export duties in Portugal, irrespective of destination. Despite the fact that such duties had already lost their primitive role, and represented an unnecessary burden on the export sector, the foreign constraint acted surely to speed up their elimination.

Another traditional instrument of commercial policy in Portugal was the drawback system[60/], according to which a producer might claim refund of the duties paid on imported components when the finished product left the country as an export. A similar instrument was the temporary import system, which allowed imported components to be exempted from duty payment under the condition that they would be re-exported after transformation within a certain period of time[61/]. Both systems distort competition in foreign markets in favour of imports, because these would carry no duty on materials imported from outside, while goods produced and consumed in one and the same country would. That is the reason why Article 7 of the Stockholm Convention allowed any member to refuse EFTA tariff treatment to those goods that had benefited of any form of duty relief on imported components in the country of origin, provided these came from a non-EFTA source. Therefore, a more liberal attitude was adopted in respect of drawback than in the case of export subsidies, which may be explained by two reasons. First, if abolished for intra-EFTA trade while remaining in force for trade with third countries, drawback would lead to export trade diversion, as exporters would find it more profitable to sell to non-EFTA markets, if the duty were proportionally higher than the income gain resulting from EFTA preferences. Second, the artificial competitive advantage gained by imports would be detrimental only insofar

as the domestic products concerned were close substitutes for imports.

A considerable degree of indefinition persisted within EFTA as to the timing of Article 7. Finally, the Council decided in 1966 that the drawback system would be made incompatible with EFTA preference after the end of that year[62/]. This decision was clearly responsible for a slowdown in the use of the drawback facility by Portuguese authorities, as can be seen in Table 1.7. As a percentage over exports, drawback--benefiting imports did not recover the level reached in the early 1960s — approximately 5 percent. This restriction led authorities into alternative measures of export promotion, mainly of the financial and organizational kinds.

f) The right of establishment. According to Article 16 of the Stockholm Convention, restrictions on establishment should not be applied to EFTA nationals in such a way as to deprive them of the benefits resulting from the free trade arrangement. This basic rule had quite a limited scope. It did not imply equal treatment between locals and other EFTA nationals, and covered only those activities that were directly linked with intra-EFTA liberalization, i.e. manufacturing industries. EFTA members were explicity allowed to maintain control over immigration, assess to capital markets, investment in domestic enterprises and ownership of natural resources. In 1966, an agreement was reached at the Bergen Ministerial meeting. It emphasized the obligation to give non-discriminatory treatment, whenever discrimination in favour of local enterpreneurs "frustrated the benefits expected" from EFTA, especially under the form of trade expansion. In particular, three activities were envisaged by this interpretation: commerce in goods which were of Area origin, assembly, finishing or servicing of goods which were traded between members, and production of goods which were of Area origin, and of which a significant part was to be exported to other members[63/].

Despite the clarification brought about by the Bergen agreement, the EFTA rules on establishment remained of limited practical significance. On the one hand, a considerable degree of uncertainty persisted as to the definition of "frustrated benefits". On the other, economic enterprises seeking establishment in other EFTA countries had to be concerned essentially with goods of Area origin[64/]. Therefore, there was little question of finding a clear incompatibility between these rules and the Portuguese legislation on the subject. It is true that both the Law on the Nationalization of Capital (passed in 1943), and the system

of industrial licensing gave national authorities a large power of discrimination in favour of local enterpreneurs. It was recognized from the outset by the other EFTA members that those policies, rather than incompatible with EFTA provisions, constitued a "more rigid form of control" of establishment than those contemplated theoretically under Article 16. However, because of the low development level of Portuguese economy, an informal understanding was reached by the time of signing the Convention, that Portugal should be granted the right to maintain such control policies[65/]. By the time of the Bergen meeting, Portugal had already liberalized substantially her foreign investment policy (see below, section 2.6). Even if not directly an outgrowth of EFTA vague rules on establishment, liberalization of foreign investment has to be understood as an attempt to stand closer to the more liberal attitude towards international relations prevalent in EFTA partners, and to take maximum advantage of the tariff removal by stimulating exports in sectors in which foreign capital and technology might be of considerable help.

2.2. New international obligations — the membership of the IMF and the GATT

The admission to EFTA was the prelude to a series of important changes in Portuguese commercial policy, that took place in the first years of the 1960s. Portugal became a member of the IMF in March 1961, and a Contracting Party to the GATT in May 1962. And in November 1961, the principles for the economic integration of the "national economic space", or Escudo zone, for brief, were layed down in Decree-Law no. 44,016. Despite their different implications, these new obligations in international economic relations were interconnected among them and with EFTA membership.

Having already liberalized extensively her foreign trade and exchange regimes, Portugal viewed IMF membership rather as a formal decision. However, this was required as a pre-condition to become a Contracting Party to GATT and an affiliate to the World Bank[66/]. But until 1975, Portugal's role within the IMF was purely passive. Having not joined the Special Drawing Rights group, it never took part in these facilities, either as a creditor or as a debtor. In turn, GATT membership was partly justified by the participation in EFTA. Many provisions of the Stockholm

Convention referred to GATT rules; and GATT was an international forum, where an additional voice was needed to support the recognition of EFTA as a justified exception to the non-discriminatory rules of international trade. Apart from diplomatic reasons, GATT membership presented other interests to Portugal. Important export markets had been left out of the EFTA Agreement, like the EEC and Spain, not to mention the USA and Canada. Participation in the multilateral tariff negotiations of the 1960s was seen as necessary to gain better access to those markets, or at least not to run the risk of being increasingly discriminated against.

A. Repolho Correia (1969) examined the results of the Portuguese participation in the Dillon and Kennedy Rounds and drew the conclusion that they were beneficial in purely commercial terms. In the Dillon Round, Portugal offered tariff cuts or consolidations in 99 products, and in exchange benefited from several direct tariff concessions made in respect of export goods of interest to Portugal, and also benefited indirectly from reductions agreed among third countries (and made extensive to Portugal through the MFN clause). In the Kennedy Round, direct negotiations were carried out with Spain and the USA (as the list of concessions offered by the EEC presented reduced interest)[67]. Portugal offered direct concessions worth 367 million Escudos in imports, mainly consisting of raw materials and equipment goods not competing with domestic production. In exchange, Portugal obtained direct tariff concessions by Spain and the USA corresponding to 442 million Escudos of exports. Indirect benefits were calculated in 2,385 million Escudos worth of exports. As a result of the Kennedy Round, therefore, about 30 percent of Portuguese exports to GATT markets (other than EFTA) in 1967 were benefited either by tariff cuts (about 65 percent of the total) or by the consolidation of existing "ad valorem" duties. As the liberalizing effect of tariff concessions was very reduced, one might conclude that the outcome of GATT membership was much the same as that of EFTA — to achieve better access to export markets without having to adjust for the effects of import liberalization.

2.3. The economic integration of the Escudo zone

Under the New State the relations between Portugal and her colonies were ruled by the 1933 Colonial Act and by its successive revisions, that changed details but not its basic political principle: that all the regions of the "Empire" formed one political entity. In economic terms,

political unity meant that the interests of the whole should be taken
into consideration in the regulation of the economic activities in any
of its parts, and that the best judge of such interests should be the
central government itself. The economic relations between Portugal and
her colonies were based on a traditional division of labour, whereby
Portugal exported manufactured products and capital (public and private),
in exchange for raw materials, foodstuffs and interests and dividends.
A central piece for the operation of the colonial trade system was a
specific licensing regime that prevented the establishment in the colo-
nies of local firms that might compete with Portuguese exporters of manu-
factured products. Another instrument of the same integrating policy was
an informal preferential regime, according to which practically all colo-
nial exports to Portugal were exempted from import duties (with a 70 per-
cent margin for the majority) while Portuguese exports to the colonies
enjoyed tariff preferences, that were never inferior to 50 percent. To
this, one must add the heavy restrictions on the investment of foreign,
i.e. non-Portuguese, capital in the colonies.

Starting in the early 1960s, this system was subject to a number
of important transformations. The outbreak of guerilla warfare in Angola
in 1961 made the government anxious to demonstrate that the alleged po-
litical unity was grounded on a state near to complete economic integra-
tion. Future moves in this direction could be hampered, however, by the
intended admission to GATT[68/]. This implied the "freezing" of the prefer-
ential margins at the date of accession, unless they were made formal
under any of the integration arrangements recognized in the Agreement
— free trade area or customs union. More importantly perhaps, the de-
velopment of trade between Portugal and the colonies was hindered by the
system of exchange controls that had been set up in 1931, both for pay-
ments to Portugal and to foreign countries. Current and capital operations
were subject to previous licensing, which was dependent on the current
availability of external means of payment. Albeit restrictive, this system
guaranteed ex ante the equilibrium of each colony's balance of payments
and avoided delayed payments.

The Decree-law no. 44,016 of 1961 established the principles and
rules of the economic integration of the so-called "national space" (a new
name for the Empire), comprising Portugal and the "Overseas Provinces" (a
new name for the colonies). It provided for the formation of a free trade
area within a period of ten years, during which the existing tariffs and
quantitative restrictions in both directions would be eliminated, while

each territory would maintain its own external tariff. Furthermore, a partial liberalization of the exchange control system took place. Imports from Portugal became dependent on automatic authorization only, while invisible transactions and all operations with foreign countries continued to be subject to licensing. All foreign exchange earned by a given colony in payment for its exports should be directly deposited with the Bank of Portugal in Lisbon, which in turn would credit the corresponding amount in Escudos to that colony. These inter-territorial clearing accounts could be used up to certain limits, that were fixed in terms of the general availability of means of payment (gold, currencies and Escudos) and of the need not to exhaust completely the exchange reserves of the colonies. Consequently, the expansion of trade within the Escudo zone could only proceed as far as the now liberalized exchange control system might work without major tensions.

However, the trade effects of the Law 44,016 were very unbalanced. Portugal could expand significantly her exports to the colonial markets, due to the full preference now enjoyed, free of exchange controls, and the generally high price-elasticity of manufactured goods. In reverse, the increase of colonial exports to Portugal was poor, given the low level of duties already charged by Portugal and the low elasticities of raw materials[69]. As a result of the new system of trade, the current deficits of Angola and Mozambique in their trade with Portugal increased substantially and exceeded the current superavits of their operations with foreign countries. The inter-territorial settlements in excess of the available means of payment in each of these colonies were postponed successively. By the end of 1971, the accumulated postponed settlements of Angola and Mozambique amounted to almost ten thousand million Escudos, which was equivalent to 170 percent of the average value of imports from Portugal in the period 1967-70[70]. This chaotic situation led to a full reversal of policy in 1972: trade barriers were reintroduced vis-à-vis imports from Portugal, and the exchange control system moved back to previous licensing, as before 1962. These measures marked the failure of the integrationist policy within the Escudo zone and gave strong stimulus to those in government who privileged a greater emphasis on economic relations towards Europe.

The intended scheme of integration was unfavourable from the viewpoint of the development needs of the colonies, whereas it could be considered as beneficial only for the interests of some sectors of Portuguese industry, and from a short-term macroeconomic perspective.

The existence of a safely protected market overseas was undoubtedly seen as beneficial by those Portuguese manufacturers who were unable to export to foreign open markets, for essential lack of competitiveness or marketing expertise. On a macroeconomic level, this positive trade discrimination entailed a considerable saving of foreign currency, as it enabled Portugal to exchange colonial raw materials for domestic manufactures that could hardly be sold for an equivalent value on non-controlled markets. Furthermore, the colonial system obtained additional currency earnings for Portugal, as it allocated the superavits in the trade between the colonies and the foreign countries to the financing of her own trade deficits. During the period 1964-68, the sum of these two effects amounted to an annual average of 5,246 million Escudos, which financed 58.2 percent of the average trade deficit of Portugal vis-à-vis third countries. In the following five-year period, 1969-73, the relative importance of colonial trade declined. The colonial superavits financed only 7 percent of the foreign deficits, and the colonies' share in the Portuguese current receipts declined from 32 to 16 percent (between 1964 and 1971)[71]. Until the late 1960s, the colonial trade system was, together with emigrants' remittances, the main responsible factor for a favourable balance of payments, which enabled the authorities to follow a policy of hard currency and accidental resort to foreign borrowing[72].

On the other hand, for the most efficient Portuguese firms, which were able to exploit the tariff preferences offered by EFTA partners, the colonial market seemed less and less attractive, or at least, non-essential. The EFTA markets, despite offering narrower preferential margins, presented the advantages of size, shorter distance, less uncertainty and payments in foreign currency. For industry as a whole, export trade diversion from colonial to EFTA markets was likely to have favourable long-term effects, as the latter afforded better possibilities of exploiting scale economies, and a more competitive, skill-raising environment.

2.4. The import policy

a) After the gradual removal of quantitative restrictions had been almost completely carried out under the OEEC commitments, the Tariff remained as the most important instrument of import control. On the eve of important changes in the pattern of Portuguese trade relations, a tariff reform was implemented in 1959, which introduced two important technical

improvements: the adoption of the Brussels Tariff Nomenclature (BTN) and the setting of specific duties in current (and not gold equivalent) Escudos. The policy orientation embodied in the new tariff was not revealed clearly by the authorities. They were not compelled to do so, according to the Portuguese Constitutional Law — tax changes were an attribution of the Government and not of the Parliament, which reduced economic debates to a minimum. Nevertheless, there is some evidence that the general orientation was towards a greater degree of protectionism, especially in those branches whose production had started recently, as in machinery and some intermediate goods. In two public statements[73/], the Ministry of Finance recognized the increases suffered by a number of customs duties, while attempting to dispel the fears among consumers and industrial users that the new Tariff would bring a generalized rise in protectionism.

The evolution of the average incidence of Portuguese duties on imports between 1957 and 1963 is shown in the following table:

Years	1957	1958	1959	1960	1961	1962	1963
Average incidence (%)	12.5	13.3	14.2	14.2	13.3	13.5	12.6

It looks as if the authorities wanted deliberately to increase nominal protection for some sectors to compensate for the inevitable tariff reductions that would take place in the future. The decline in protection after 1961 is already due to the earlier cuts made under EFTA and Escudo zone commitments.

Table B.1 compares the average tariff rates in Portugal and in some of her most important trade partners, for the year 1959. These averages were obtained by a common methodology, involving unweighted simple averages and transformation of specific duties and variable levies into "ad valorem" equivalents. The following conclusions emerge clearly from the figures:

    i) The average level of nominal protection in Portugal was above the level of the most industrialized countries, which reflects the enormous lag in industrial development.

    ii) The dispersion of the tariff rates around the total average was the highest, which suggests that in Portugal the "made-to-measure" approach was still predominant, relative to the "uniform" approach in the definition of the tariff structure.

iii) Tariff rates were especially high, relative to the trade partners, in those consumer-good groups where the bulk of domestic production was concentrated: wood, paper, textiles, non-metallic minerals, clothing and footwear. They were sensibly lower in intermediate-good groups, as chemicals, iron and steel (where QRs were in force), machinery and professional instruments.

On all counts the Portuguese tariff structure reflects an economy that was in an intermediate stage of the import-substitution process. It bears much more similarities with the Spanish tariff than with any of her EFTA trade partners[74]. We must emphasize the particularly high costs, both for consumers and for resource efficiency, of such a tariff structure. While an uniform structure allows the price system to sort out the industries that will and will not flourish behind the tariff and will therefore let the principle of comparative advantage play, the "made-to-measure" approach tries to tailor tariff rates to the needs of different industries, in such a manner as to have practically prohibitive effects upon competing imports. If applied consciously, this approach would require the knowledge of the profile of cost reductions in function of time or output size. As this is not generally the case, a good deal of administrative discretion is involved, with all the customary inconvenients. A confortable degree of "tailored" protection, especially if maintained for a long time, discourages firms to keep their costs down, raises excess profits and distorts the allocation of resources.

A symptomatic case is that of textiles and clothing. Average tariffs near to 70 percent were certainly not tailored to the needs of the firms that, a few years later, gained substantial shares of the EFTA markets. Even if some cost differences existed relative to third countries, they had to be inferior to the preferential margin that they enjoyed in such markets (a maximum of 23-26 percent in the United Kingdom). It is possible that bureaucratic inertia were responsible for outdated tariffs. But it is also likely that a good proportion of such tariffs were effective in protecting marginally innefficient firms, which had been kept in business thanks to the internal licensing regime. In this case, efficient firms would be reaping excess profits that could be used to compensate for the underpricing of exports to competitive export markets. [75]

We shall now examine how did tariff protection change throughout the period under study. The years 1959 and 1970 were chosen for benchmarks. Tariff data are difficult to quantify in a precise manner, and when long-run comparisons are necessary, this difficulty increases. In Appendix D, the mthods used in computing average tariff rates are described. Given the independent sources of tariff rates for 1959 and 1970, it became necessary to make estimates compatible, namely by converting the early version of the SITC into its first revised version at the 3-digit level.

Table B.2 shows average tariff rates for 28 industries disaggregated at the 2-digit level of the SITC/1st Rev.. The average protective rate for manufactured products did not change between 1959 and 1970, being stabilized at 27.5 per cent. However, there are wide disparities among industries, which must be attributed to changing product-mixes and import price rises. For most industries, tariff rates declined slightly or did not change, the manifest exception being divisions 82, 83, 84 and 85. A closer inspection of these rates at a finer level of disaggregation and by different areas of origin suggested a strong variation in average unit-values, which may explain the extreme values observed in 1970. Anyhow, we may conclude that, neither the import price increase nor the GATT - negotiated tariff reductions were important enough to have affected substantially the average level of protection vis-à-vis non-preferred trade partners.

A different picture emerges when we consider the changes in protection relative to imports from preferential areas. By 1970, all duties on imports from Overseas Provinces had already been brought to zero, which had mainly a fiscal effect, instead of a trade effect, at least insofar as manufactured products are concerned. As to imports from EFTA origin, zero duties were applied since 1967 to products that were subject to the general tariff-cutting formula, and the products under Annex G had suffered a further 10 percent cut in 1970, which put the liberalization rate at 50 per cent.

According to Table B.2, the average protective rate for EFTA origin manufactured products was 56 per cent lower than the m.f.n. rate. The preference margin varied across industries, in accordance with the coverage structure of Annex G.

b) So far, we have been concerned only with the protection that is afforded to the gross output of a particular commodity, which is measured by its _nominal_ rate of protection. It is normally defined as the percentage excess of the domestic price over the world market price, resulting from the application of protective measures. If tariffs are the only protective measures used (as it is the case in Portugal for the large majority of sectors) and they are not prohibitive, the nominal rate of protection will equal the "ad valorem" rate of tariff.

The analysis in terms of nominal protection is useful when the objective is to determine the effects of tariffs and other measures upon consumers' welfare and fiscal receipts. However, from the point of view of the domestic producer, not only tariffs on the final product will be relevant, but also tariffs levied on material inputs used in the production process. Although tariffs on the product itself provide protection to the firm or industry by allowing domestic prices to rise above import prices, tariffs on material inputs reduce the extent of protection by raising the cost of material inputs. For domestic producers, therefore, what is relevant is the impact of protection upon the value added in the production process rather than on the product price.

Under a set of assumptions in the context of a partial equilibrium model [76/], the effective protection rate can be defined as the percentage excess of domestic value added, obtainable by reason of the imposition of protective measures on the final product and its material inputs, over world market value added.

Since domestic prices are assumed to equal world prices added to tariff rates, the domestic value added in one unit of good j is given by:

$$(1) \qquad V_j = (1+t_j) - \sum_i a_{ij}(1+t_i)$$

where t_j and t_i stand for the tariff rates applied on the output and on the material inputs, respectively, and a_{ij} is the input cost per unit of output (tariffs excluded). As the free-trade unit added value of j is

$$(2) \qquad V_j^* = 1 - \sum_i a_{ij}$$

the effective protection rate is expressed as

$$(3) \qquad E_j = \frac{V_j}{V_j^*} - 1 = \frac{t_j - \sum_i a_{ij} t_i}{1 - \sum_i a_{ij}}$$

The calculation of effective protection rates requires two basic inputs. One is an estimate, as precise as possible, of each sector's nominal tariff rate. The other is the knowledge of its cost structure from the input-output table. As this table gives us the technical coefficients as registered under an actual situation of protection, it is necessary to deflate them by the corresponding nominal rates, in order to obtain the hypothetical value added under free trade conditions.

If P_j is the domestic price of good j and a'_{ij} is the domestic (post-protection) input coefficient, then, under the assumption of unchanged input coefficients, we may rewrite (3) as in (4):

$$(4) \quad E_j = \frac{V_j}{V_j^*} - 1 = \frac{P_j - \sum_i a'_{ij}}{\dfrac{P_j}{1 + t_j} - \sum_i \dfrac{a'_{ij}}{1 + t_i}} - 1$$

Every calculation of effective protection rates is faced with the problem of how to treat nontradable goods (services, building, etc.). These are not directly affected by nominal tariff rates, but their value varies according to whether one is under free trade or protection. Two basic solutions have been presented in the literature.

B. Balassa (1971) assumed that nontradable inputs are supplied at constant costs. Consequently, their prices will vary according to the incidence of the tariff structure upon their production costs, which implies a zero rate of effective protection. Such assumption is equivalent to assuming idle capacity in the activities producing nontradable inputs or the existence of some price stabilizing mechanism.

An alternative way to dealing with this problem was suggested by W. Corden (1971). The nontradable inputs used in a particular sector must be considered in the same way as the primary factors, because the protection afforded to the sector will also affect the value added in non-tradables. Higher protection to a particular sector means higher profitability, and therefore will increase its demand and the price of such inputs. Its supply is not perfectly elastic, contrary to what one can infer from Balassa. The Corden procedure of treating non-traded goods 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.

Both methods have their own merits in practical applications. Balassa considered the incidence of the protective structure only upon the value added of a particular sector. Therefore, his rates are an adequate measure of the incentives given to that sector. Corden included in his rates not

only the protection afforded to the value added of that sector, but also the protection indirectly given to the nontradable inputs that are used by it. Consequently, they are a better indicator of the incidence of different protection mechanism upon the resource allocation among industries producing tradable goods. However, it may well be that the increase in value added of the industries producing nontradable inputs will differ substantially from the increase in final output, because each input is used by many different industries with different effective protection rates. This shortcoming is especially relevant in industrializing countries, where evidence has shown wide inter-industry divergences in effective protection. Moreover, the procedure suggested by Corden presupposes a method of price determination that may not be realistic in countries where service prices are often subject to regulations (especially in banking, insurance, transports, etc.).

According to the Balassa method, and considering that world market coefficients are derived from domestic input coefficients, we have:

$$(5) \qquad V_j = P_j - \sum_i a'_{ij} - \sum_i a'_{nj}$$

where a'_{nj} denotes the input coefficient for nontraded goods at domestic prices. a'_{nj} can be further divided into:

(i) the cumulated value of material inputs used in the production of n, whose input coefficient is denoted by R_{in}

(ii) and the value added in the production of non-traded goods, represented by the coefficient R_{wn}.

Therefore,

$$(6) \quad V_j^* = \frac{P_j}{1 + t_j} - \sum_i \frac{a'_{ij}}{1 + t_i} - \sum_i \sum_n \frac{a'_{nj} R_{in}}{1 + t_i} - \sum_w \sum_n a'_{nj} R_{wn}$$

Formulae (5) and (6) were used in M. Porto (1982) to estimate effective rates of protection for the years 1964, 1970 and 1974 across the whole range of input-output branches producing mostly tradable goods. The input coefficients were supplied by the input-output tables published for those same years.

The averaging of nominal rates of protection was done taking imports as weights and allowing for the effects of exemptions and reductions, due to domestic incentives and to the preferential trade agreements. This is justified in the present case, where the objective is to quantify the

average impact of protective structure upon each industrial branch. The nominal rates must indicate the average level of protection afforded to the representative output-mix in each branch vis-à-vis foreign substitutes.

Ideally, the average rate of effective protection for the whole group of manufacturing industries should be obtained by using world market value added as weights. In this way, the average rate is statistically unbiased (Balassa, 1971, p. 319). However, as those elements were not available to us, the averaging procedure used "derived" world market output as weights, which is preferable to simple unweighted averaging.

In order to detect the existance and the sign of a possible bias introduced by weighting, the simple correlation coefficient between the effective rate of protection and the total material input coefficient (in domestic prices) was calculated. Its 1970 value, 0.313, does not confirm the existence of a relationship at margins of error lower than 20 percent.

The weighted average rate of effective protection for the manufacturing industries, excluding foodstuffs, was 42.6 percent in 1970, as can be seen in Table B.3.

Therefore, we may infer from starting set of assumptions that tariff protection in 1970 allowed those Portuguese manufacturing firms that directed their sales towards the domestic market to exceed the unit value added at world market prices by 43 percent in average. Usually, however, the degree of discrimination against imports cannot be measured by the simple effective rate of protection calculated under actual exchange rates. Tariffs contribute towards a more favourable balance of payments, and allow for an overvalued domestic currency than would otherwise be possible under free trade. This monetary overvaluation is equivalent to an import subsidy and consequently decreases the effective protection to domestic industry.

During the 1960s and early 1970s, Portugal showed consistently positive basic balances, that were justified, not only by protection , but also by the colonial trade system and the emigrants' remittances. Therefore, if imports were fully liberalized, there would be a "safety margin", before the exchange rate had to be adjusted to bring the balance of payments back to equilibrium.

"Net" effective rates of protection are obtained from the insertion into formulae like (6) of "net" nominal tariff rates, adjusted for the extent of overvaluation.

According to Balassa (op. cit,, p. 324), the "net" nominal rate can be expressed as:

$$(7) \qquad T' = \frac{R}{R'} \ (1 + T) - 1$$

where R and R' are the exchange rates under protection and free trade, respect-

ively.

Assuming that export subsidies are nonexistent, the condition for bal-
ance of payments equilibrium after the elimination of tariffs and the compen-
sating devaluation is indicated by:

$$(8) \qquad \varepsilon_f \left(\frac{R'}{R} - 1 \right) X + \eta_m \left(\frac{R'}{R(1 + T)} - 1 \right) M = - D$$

where ε_f is the elasticity of supply of foreign exchange, η_m is the elasticity
of import demand, and -D indicates that the country is initially on a balance-
of-payments superavit. From (8) we derive an expression for the overvaluation
ratio:

$$(9) \qquad \frac{R'}{R} = \frac{\varepsilon_f X + \eta_m M - D}{\varepsilon_f X + \dfrac{\eta_m}{1 + T} \cdot M}$$

Due to the lack of estimates for trade elasticities in Portugal during
the period, only a very gross valuation of the ratio R'/R can be obtained. It
has been assumed that, due to the essential character of most importing goods,
the respective demand elasticity would be low, and that, due to the marginal
role of Portugal as a world supplier of goods and services, and to the highly
responsive behaviour of emigrants' remittances, its elasticity of supply of
foreign exchange would be high. Having in consideration the estimates pub-
lished in Balassa (op. cit.) for seven industrializing countries, most of which
of a larger size than Portugal, we think that the options indicated in the
following table are realistic:

ratio R' / R

	$\eta_m = 1.5$	$\eta_m = 2.5$
$\varepsilon_f = 3$	1.015	1.035
$\varepsilon_f = 4$	1.012	1.029

As it might be expected, the values obtained for the ratio R'/R
according to expression (9) by use of actual values refering to 1970 indicate
an insignificant degree of overvaluation. Consequently, the "net" effective
rates of protection should not differ significantly from the non-adjusted rates
presented in Table B.3.

c) Throughout the period 1964-70, there was a trend towards an increasing effective protection in the manufacturing industries, which was accompanied by an increasing discrimination among them. According to the industry rates supplied by Porto, the weighted average rate of effective protection increased from 35.6 percent in 1964 to 42.6 percent in 1970, whereas the ratio of standard deviation to arithmetic mean also increased from 1.145 to 1.654. This trend contrasts with the fall in average nominal protection, provoked by EFTA membership, that is revealed not only in Table B.2, but also by the nominal rates calculated by Porto for input-output branches. The average nominal protection fell from 18 percent in 1964 to 16.5 percent in 1970. There was also a move towards greater uniformization of tariff protection in nominal terms. The ratio of standard deviation to arithmetic mean decreased from 0.833 to 0.564.

The obvious way to investigate why did nominal and effective protection trends differ is to look with more detail into the changes suffered by the tariffs on imported inputs throughout the period. These changes have come not only as a result of negotiations, but also/a result as of lobbying by domestic producers. In the Portuguese case, would-be manufacturers of equipment and intermediate goods have often linked the start of their activities to increased protection. In the opposite direction, industrial firms continously lobbied for a reduction or exemption of duties falling on imported inputs. Simultaneously with a problem of rationality in resource allocation, there are transfers of income associated to this kind of duties. If there is no close domestic substitute for the imported input and demand is inelastic, the fall in its duty will cause a loss in fiscal revenue which is entirely transferred to the value added by the domestic user of the input(assuming no change in output prices). The fiscal loss varies with the elasticity of import demand, but the gain in terms of the unit value added is unambiguous. If there is a local substitute for the input, authorities will have to choose between a reduction in the unit value added of the local supplier and a correspondent increase for the user, that may be accompanied by a final gain (e.g., if the duty ceases to be prohibitive).

During the first stage of State-supported industrialization, duty exemptions were granted generously/priority sectors, such as communications, to power, mining and all the "new industries" defined by Law 2005. Besides these general exemptions, a large number of firms and public services (around 120, by 1960) could claim the right to specific exemptions and

reductions of duties on equipment and intermediate goods. Generally there
was no time limit for these concessions, and their only binding condition
was that the price of domestic substitutes should not lie within a 10 per-
cent margin above the import price (exclusive of duty).

In 1961, a new law was passed (Decree-Law no. 43,962) which envis-
aged explicitly to increase the degree of tariff protection offered to
domestic manufacturers of equipment goods, by reducing the number, scope
and time period of the exemptions to the payment of duties. All existing
exemptions were abolished, with minor exceptions, and future beneficiaries
would have to be selected according to a three-tier criterion. The duty
exemptions would be automatic and permanent for a few specified industries
(war material, diamonds, embroidery) and firms working under State monopoly
concessions (communications mainly). An exemption period not exceeding four
years would be attributed to firms covered by special protective legisla-
tion (power, mining and "new"and "reorganized" industries according to Law
2005) over a specific requirement. All other firms had to require the bene-
fit for each imported good separately. However, the conditions for the
granting of this benefit were made tougher. No exemption would be given
whenever a domestic substitute were available, independently of price.
This meant that the margin of preference in favour of local suppliers
was raised from 10 percent to the level of the nominal tariff. Also, the
argument of excessive delays of local suppliers ceased to be considered
explicitly as acceptable.

This attempt to foster a domestic industry of machinery and equip-
ment through greater tariff protection had already been visible in the
1959 Tariff reform, as we saw. However, it failed to reach its objectives.
Apart from the difficulties that such attempt would naturally find in the
Portuguese economy (small size of the market, lack of general technologi-
cal background, low skill of the manpower), two oppositions existed in
the specific area of commercial policy. Firstly, tariff negotiations,
either in the EFTA or in the GATT context, tended to protect heavily
the existing traditional sectors from the rigour of foreign competition,
while "sacrifying" modern ones in exchange for substantial tariff re-
ductions towards export products. Despite the "infant-industry" facility,
the producers of intermediate and capital goods faced prospects of in-
creasing import liberalization. Secondly, a too strict granting of duty
exemptions would affect negatively the value added of industrial users
of imported inputs, especially those that were selling in foreign markets
and could not be protected by a nominal tariff on the output[77/].

In 1968, this policy of protection to the domestic production of equipment goods was partially abandoned [78] for two main reasons. First, it was necessary to "equalize" the competitive conditions of domestic and foreign firms on external markets. Second, a fall in duties levied on inputs and equipment would contribute to compensate a predictable fall in protective duties on final products, and enhance domestic producers' position on the internal market. Moreover, the decrease in capital costs was expected to stimulate domestic investment, in a downfall since 1964.

Exemption of duties on capital goods was granted by the Ministry of Finance upon specific requirement, provided the goods and industrial branch concerned were included in published lists. The procedure for exemption and reduction of duties on raw materials was even easier as the benefit was only dependent upon Customs decision. Finally in 1972, most of raw materials were made duty-free in the Tariff itself. Non-collected duties on capital goods, that had amounted to 36 million Escudos in 1967, were raised to 445 million in 1968, as a result of the new liberalizing measures taken in January of this year, and to 660 million in 1970. The exemptions and reductions affecting raw materials, introduced in 1968, were responsible for 123 million Escudos of non-collected duties in that year, which increased to 178 million, in 1970[79]. The fiscal loss incurred by total exemptions in 1970 amounted to 1413 million Escudos, i.e. 25 percent of potential customs revenue, and the average incidence of the Tariff decreased as a result from 12.9 to 9.7%.

d) In order to proceed with the analysis in terms of effective protection, it is now necessary to work with the sectoral rates for the year 1970. According to the estimates presented in Table B.3, the tariff structure shows a substantial variation among the 31 sectors considered. The highest rates are found in non-edible oils, textiles and clothing, furniture, plastics and rubber, chemical consumer goods, glass and transport equipment, whereas the lowest are found in wood, paste, base chemicals, non-ferrous metals and non-electrical machinery.

Effective protection is higher in sectors producing consumer goods, especially nondurables, and lower in sectors producing intermediate goods and equipment.

A first question to raise is whether there are differences between effective and nominal rates important enough to justify their separate calculation. In terms of the ranking of protective rates across industrial sectors, the difference does not seem to be large. The Spearman rank correlation coefficient between effective and nominal rates for 1970 was calculated at

0.842 which is significant at the 95 percent level. This result confirms the empirical evidence found by Balassa et al. (1971).

The information on effective rates of protection does not seem very useful either in order to assess or predict the direction of shifts in resources between industrial branches. General equilibrium analysis of tariff protection does not allow a priori conclusions about the pull of resources towards sectors with high effective rates, and vice-versa, due to the existence of equilibrium wages in unified national markets for factors and to the unequal weight of each branch in total employment (M. Michaely, 1977, and D.L. Phan, 1980). Only an unquantifiable degree of probability can be attached to the direction of internal factor movements caused by differential rates of effective protection.

It is rather in terms of the additional information provided on the orientation and motivations of commercial policy that the calculation of effective rates can be justified. The ranking and the height of the effective rates indicate the degree and ori tation of the tariff incentives provided to industries. This revealed hierarchy of public preferences must be related to the objectives of development strategy and to alternative determinants of policy making, along the "public choice" kind of model approach.

For the majority of sectors considered, the effective rates are higher than the nominal rates of protection. 80/ Their difference, in percentage terms, is revealing of the degree of profitability in sales to the domestic market that the authorities wished (or, anyway, determined) for the producing firms in each of those sectors. The measure for the "escalating" effect" in the tariff structure is given by the following expression:

$$\left(\frac{\text{effective rate}}{\text{nominal rate}} - 1 \right) \times 100$$

whose values are graphed in Figure 8.1 for all branches considered. A total of 27 branches, representing more than 90 percent of total industrial output revealed a positive escalating effect. Furthermore, the diagram shows a very unequal pattern of tariff incentives to industrial production, directed towards domestic consumption. With a few exceptions, all sectors enjoying an escalating effect above 100 percent satisfy basically final consumption needs. Three of the exceptions concern two activities that are amongst the ones most actively encouraged by the New State's industrial policy: the

partly public-owned oil refineries and steel mills. The sectors producing
equipment goods deserve a poor situation in the escalation ranking, and
other sectors producing intermediate goods, as base chemicals, wood and
non-ferrous metals seem to have paid most of the "burden" for the relatively
high effective protection in the sectors producing consumer goods. Paper
paste is an exceptional case, as almost the entire output is sold in foreign
markets — therefore, protection to internal sales is largely irrelevant.

The general picture that emerges from Figure B.1 fits very reason-
ably to the main orientations of industrial policy during the two decades
prior to 1970. Capital-intensive activities, like steel, refineries, vehi-
cle assembly, etc. were believed to bring external economies to the whole
economy, whereas traditional labour-   activities deserved protection
in order to maintain a stable level of industrial employment. [81]
The final outcome is largely a compromise between these two needs, which
nevertheless raises several contradictions. One is the insufficient devel-
opment of some industries producing inputs and of all those producing capi-
tal goods, because of (relative) underprotection. The other is the general
anti-export bias that this protective structure introduced into the economy.

In Table 1.3, we present weighted averages of effective rates of
protection for industry groups selected according to their "openness" towards
international competition.   . Export industries are those that export more
than 20 percent of total output, and import-competing are those whose imports
exceed 20 percent of domestic output. Those sectors that satisfy both require-
ments were considered of "intra-industry specialization", and those that
satisfy neither were considered to be protected by prohibitive means (tariffs,
transport costs, etc.).

Table 1.3

Effective protection rates by industry groups — 1970

Export industries	35.0
Import-competing industries	46.8
Other industries	48.1
- Intra-industry specialization	27.3
- Prohibitive protection	59.5
Total average	42.6

Source: The same as Table B.3

Import-competing and prohibitively protected sectors show the highest rates of effective protection. Under the assumptions of constant costs and no substitution among inputs in response to changes in relative prices, the excess value added that is provided by protection in these two types of sectors can be used, either to reward capital or labour at "above-normal" rates or to compensate for higher processing costs than those prevailing in the world market, or both. Given the particular nature of the market structure in a large number of import-substituting sectors (market reservation schemes, monopoly positions promoted by the State itself, etc.) one has to admit that a more or less reasonable share of the excess domestic value added corresponds to a monopoly rent earned by capital. Consequently, the static cost of protection, which equals the difference between domestic and foreign pro- cessing costs, cannot be measured to the whole extent by the rate of effective protection, in the Portuguese case.

Export industries enjoy a substantial level of effective protection. Assuming that nominal tariffs are not ineffective, ant that there are factors inhibiting domestic competition among firms, one has to admit that those firms whose processing costs are at the same level as the world market's are reaping a differential rent on their domestic sales, which may be as high as 50 percent of the value added in world prices (35 percent is the sector's average).

2.5. The export policy

a) The effects of import-substitution strategies have been thoroughly examined in the literature[82/]. The main conclusions point out the economic costs and distortions arising from such strategy, particularly in what con- cerns the conditions of profitability in the export sector. In general, an import-substitutive process of industrialization under conditions of heavy protection is said to inflict an "anti-export bias" upon the economy as a whole, in three different ways. In the first place, export goods see their costs increase as a result of the incidence of the tariff structure upon the domestic price of raw materials and other intermediate goods used in their production. Secondly, the price of relatively scarce primary factors also tends to inflate due to the demand pressure from the highly rewarded import-competing sectors. Wherever capital is allocated, not by price mechanisms, but by administrative controls (as in Portugal) the outcome

is technological backwardness in the export sector. Thirdly, the exchange rate tends to be overvalued relatively to an hypothetical liberal import policy, therefore reducing the amount of national currency earned by exporters. The two first distortions affect exports through higher costs, whereas the third affects them through lower incomes.

The perception of the economic costs caused by a too slow growth of exports has led to the implementation of a set of policy measures whose objective is to compensate exporters for their increased costs or reduced earnings. Usually this perception arises in a late stage of the import-substitution process, when its limitations become too evident and the export sector is called upon to fulfill two essential roles: The first is to generate a stable flow of foreign exchange, high enough to finance an increasing demand for imported equipment and components. The second is to give a further impetus to the industrialization process by expanding the size of markets, thereby absorbing the labour surplus liberated by the primary sector, itself deeply transformed during the early stages of industrialization.

Ideally, the tariff rate and the export subsidy rate should be identical in order to equalize the conditions of profitability in the domestic and the foreign markets. However, the need to redress an external deficit or to promote particular export sectors in view of externalities obtained through learning-by-doing may impose rates of export subsidy in excess of tariff rates. Therefore, export promotion policies may under - or overcompensate for the anti-export bias, but this outcome depends on the intensity to which these policies are used, and not on their type.

b) The policies of export promotion can be classified into four different categories: customs, tax, financial and institutional.

b.1) Until the 1960s, customs policies had been the only instrument of export promotion in Portugal. The membership of EFTA played a decisive role in the modifications suffered by these policies, as we saw in Section 2.1.

The abolition of export duties must be seen as an additional measure of export promotion, despite its reduced importance. The value of the export duties not collected in 1967 amounted to 55 million Escudos[83/], which represented 0.3 percent of total exports and 1.1 percent of total customs receipts in that year.

Table I.4

Imports made under duty-relief schemes for export promotion

(Million Escudos)

	Drawback		Temporary Importation	
	Value	% of exports	Value	% of exports
1961	368.3	3.9	256.5	2.7
1962	587.4	5.5	298.1	2.8
1963	689.7	5.7	295.3	2.5
1964	772.7	5.2	353.5	2.4
1965	912.0	5.5	278.9	1.7
1966	837.4	4.7	307.3	1.7
1967	778.7	3.9	453.6	2.2
1968	585.8	2.7	484.6	2.2
1969	564.7	2.3	428.3	1.7

Source: "Estatísticas do Comércio Externo", INE, several issues.

As can be seen in Table I.4, the relative importance of the draw-
back and the temporary importation schemes declined after 1966. This ten-
dency must be attributed to the agreed restrictions on the use of such
schemes within EFTA. The value of duties restituted under the drawback
scheme amounted to 153 million Escudos in 1967, which represented only
0.76 percent of total exports. They were heavily concentrated in two
sectors, textiles and canned fish, which accounted together for 90 per-
cent of all imports made under drawback.

In order to circumvent the EFTA restrictions on the use of tradi-
tional mechanisms of export promotion, the Portuguese government diversi-
fied its policy. In 1965, it accepted the establishment of "free entrepôts",
in the automobile and electronic sectors, for the domestic transformation
or assembly of imported components. In 1968, the temporary importation
scheme was extended so as to include the components and machines to be
incorporated into exported equipment[84].

b.2) The use of tax benefits in order to promote exports was
restricted in Portugal, because of EFTA rules and of the nature of the
domestic tax system. The purchase tax is levied on one stage, the wholesale
trade, and export goods are totally exempted from it. Therefore, there is
no room for a hidden subsidy, as in the Spanish case[85]. Direct tax incen-

tives were used in order to promote the development of specific branches, according to Law 2005 and to the Development Plans. But as they were not attributed according to the firms' export performance, they could not be said to constitute a true export subsidy. EFTA rules meant a limitation to a more effective use of the tax system to subsidize exports.

However, due to the relatively low incidence of direct taxes in Portugal, as compared to most European countries, it is a fact that Portuguese exporters were already comparatively privileged relative to European competitors[86], in this respect.

b.3) The financial mechanisms of export promotion are basically two: preferential export credit and credit insurance schemes. Both are justified by the fact that a substantial proportion of export sales is subject to deferred or instalment payments, which raises two problems. First, the price and quality of the export good are no more the only factors determining its international competitiveness; the financial conditions offered to the client (percentage of credit, terms of payment and interest rate) have also to be considered in the purchasing decision. Second, every international transaction involving deferred payments implies a risk for the seller (exchange rate variations, political embargos, bankrupcy, payment defaults, etc.). These two problems are tackled by export credit and credit insurance, respectively, but in a joint fashion, as the latter is considered to be a pre-requisite for the attribution of loans. A variety of financial support schemes has been set up by almost all countries, developed or not, with a variable subsidy content. For countries like Portugal, which run very imperfect financial and money markets and operate in "buyers'markets" as marginal industrial exporters, the demand for special financing terms is made very acute. Foreign importers will tend to press for as large as possible a deferment, and without the existence of a specialized banking service, allowed to make medium-and long-term loans for export operations, possibly in preferential terms, most domestic firms would feel it harder to compete internationally.

A preferential export credit scheme was introduced by Decree-Law no. 46,303 of 27 April 1965, contemplating three credit facilities:
- current pre-financing, in order to provide firms with the floating capital resources needed to perform current export sales (short - term loans);
- special pre-financing in order to provide firms with funds necessary to fill a standing export order (maximum of 2 years, and credit coverage

up to 80 percent);

- export financing, in order to provide firms with funds corresponding to their credits over the importers (credit coverage up to 90 percent in short - term loans, and 85 percent in medium - and long - term loans).

Reduced discount rates applied by the central bank to loans made under these special facilities allowed for more favourable interest rates relative to commercial credit — a bonus of between 1 and 1.5%. A special department was created within the Export Promotion Board (Fundo de Fomento de Exportação).

However, the implementation of these support mechanisms revealed a number of administrative deficiencies, which reduced considerably their pratical scope. A true insurance activity in the export sector was only possible after 1969, when a monopoly company was set up by the Government for that specific purpose (COSEC - Companhia de Seguros de Crédito). The

Table I.5

Evolution of export credit (Million Escudos)

	Value of export credits				% of Credit over Exports	% of Credit under Preferential Terms
	Bills of Exchange	Short-Term Loans	Medium and Long-term Loans	TOTAL		
1965	382.5	620.1	14.8	1,017.4	6.1	13.9
1966	384.5	548.3	45.4	978.3	5.5	7.2
1967	635.9	705.0	33.6	1,374.5	6.8	n.a.
1968	769.6	814.5	18.3	1,602.4	7.3	n.a.
1969	1,213.0	545.4	269.4	2,027.8	8.3	5.4

Source: Reports of the Bank of Portugal, several issues.

interest rate differential was a relatively minor benefit for the exporters, given the very low level of interest ceilings imposed (5.5% from 1965 to 1967, 6 - 6.5% until 1970)[87]. Greater importance would have been accorded to credit access as such. Commercial banks in general lacked experience and interest to operate in the more risky export area, and favoured more familiar domestic financial activities. Increasingly stronger links between some industrial firms and commercial banks led to discrimination in export credit against those firms not integrated in the ruling financial circles. As no special stimuli were created for private banks to become more opera- tive in this area, and the bureaucratic requirements for the obtention of

State guarantees were usually costly, the system did not contribute to an overall improvement of competitive conditions, for Portuguese exporting firms.

Table 1.5 documents a rather modest role of export financing, not only in terms of amount, but also in terms of structure. The total export credit granted during the period 1965-69 did not exceed 8% of exports, which is rather low, when compared for instance with the corresponding figure for Spain: between 20 and 24 percent[88]. Most of this credit had short duration — less than one year, and only a very minor share was granted under the preferential conditions established by Decree-Law 46,303.

b.4) The institutional measures of export promotion are directed towards two broad groups of objectives: the collection and diffusion of information on export markets domestically and on domestic products abroad, on one hand, and the organization of the exporting activity on the other. For potential exporters, information about foreign markets is a scarce resource, especially so in Portugal, that had been relatively marginal to the great trade centres. If each firm were to obtain the relevant information on its own, fixed costs would absorb a too large share of expected export earnings. Exploitation of scale economies and externalities in this field require the active intervention of the State, through the subsidization of firms' participation in trade fairs, support to commercial centres next to the most important export markets, promotion of an information and research network, centralization of propaganda actions, etc.

The Portuguese Export Promotion Board has more or less achieved these tasks, especially since its reorganization in 1963. However, the organizational aspects of promotion policy were left almost neglected. While the needs to establish quality control on export products, to differentiate among firms on the basis of export performance, to attack the generalized individualistic behaviour among Portuguese exporters and to introduce techniques of collective penetration into foreign markets became publicly recognized, the authorities were slow in adjusting the administrative apparatus to these new, active forms of intervention.

c) From the description above, it does not seem that the export policy during the 1960s has been able to compensate for the anti-export bias inflicted by protection. The quantitative impact of customs mechanisms, still the most extensively used, was negligible. In average, the abolition of export duties would have increased private export earnings by 0.3 percent, while the joint contribution of drawback and temporary importation,

in decline, would not have exceeded 1 percent. Financial mechanisms remained largely inoperative throughout the period, direct tax incentives were not used, and the institutional support was confined to bring down average marketing costs.

The anti-export bias is defined as the relative difference between the value added that obtains in domestic sales and the one that obtains in exports. The latter is calculated on the assumptions that producers sell their goods at world market prices whereas the inputs they use are purchased at domestic (protected) prices, and that their external demand schedule is infinitely elastic. E_j^x, the anti-export bias in sector j, can be expressed as :

$$E_j^x = \frac{V_j - Y_j}{Y_j}$$

where V_j is value added at domestic prices, as in expression (5), and Y_j is value added obtained when exporting:

$$(10) \quad Y_j = P_j \frac{1+S_j}{1+t_j} - \sum_i a'_{ij} \frac{1+t_{ix}}{1+t_i} - \sum_n a'_{nj}$$

where S_j is the rate of export subsidy on good j and t_{ix} is the rate of tariff on material inputs used in producing for exports. In the most straightforward case, we should have $S_j = 0$ and $t_i = t_{ix}$. It follows that:

$$(11) \quad E_j^x = \frac{P_j - \sum_i a'_{ij} - \sum_n a'_{nj}}{\frac{P_j}{1+t_j} - \sum_i a'_{ij} - \sum_n a'_{nj}} - 1 =$$

Assuming P_j to be equal to unity, we have

$$(12) \quad E_j^x = \frac{t_j}{1 - (\sum_i a'_{ij} + \sum_n a'_{nj})(1+t_j)}.$$

E_j^x may take negative values, whenever the unit domestic processing costs exceed unity (i. e. the free trade price). In this case, it may be said that the value added obtained in exporting is negative.

The author calculated the anti-export bias for the 31 industries of the input-output classification, using expression (12). Because the subsidy element contained into the export promotion schemes is practically irrelevant,

and in the only sector where drawback has some relevance (clothing), duty-free imports do not account for more than 5 percent of the cost of the correspondent total material inputs, it was decided to make $S_j = 0$ and $T_i = T_{ix}$ in all sectors. The weighted average of the anti-export bias was 141.1 percent in 1964 and 106.3 percent in 1970 (or 82.4 percent, if "derivatives of petrol and coal" and "transport equipment" had been withdrawn from the average in order to make it strictly comparable to 1964). As expression (12) includes only domestic values, no adjustment is necessary for overvaluation as compared with the free trade situation.

Due to the falling trend in nominal tariffs, the average anti-export bias declined throughout the period, but continued to hold very substantial values, which is attributable not only to the protective character of the Tariff, but also to the absence of compensatory mechanisms of export promotion. Table 8.3 shows the rates of anti-export bias by each sector in 1970.[89/] A very wide variation across sectors is apparent from the figures. The highest bias was found in four sectors — hard fibre textiles, rubber articles, non-edible oils and transport equipment — all of which have rates above 200 percent. Rates higher than 100 percent could be found in woollen textiles, clothing, leather, plastic articles, miscell. chemicals and glass. It is self-evident from these figures that the anti-export bias cannot on its own explain the more or less outward-oriented nature of a particular industrial sector. Several other factors must be taken into account.

The basic assumption behind the calculation of the anti-export bias is that exports of a particular commodity are payed an identical world price, whichever their destiny. This cannot be accepted when exports benefit of tariff preferences in certain markets. As Portuguese exporters benefited of preferential treatment on EFTA and Overseas markets, they could reap a windfall gain corresponding to the whole or a share of the m.f.n. rate in the importing country, provided the processing costs are equivalent to their most direct competitors, and sufficiently competitive conditions prevail in the import business. The excess margin over world market value added that is reaped by Portuguese exporters in this way operates as an actual export subsidy to those commodities directed towards preference-granting markets. If the rate of this "subsidy" is at least equal to the nominal tariff protecting domestic sales of the same commodity, then the anti-export bias is fully eliminated insofar as exports to such markets are concerned.

Industries holding genuine comparative advantages offer a wide scope for export expansion following the granting of preferences, since these

eliminate the anti-export bias that had been previously inflicted by the domestic tariff structure. Unit value-added obtained in such industries becomes equalized between foreign and domestic sales. Only those exports directed towards non-preference-granting markets continue to be discriminated against.

One might say, consequently, that EFTA tariff preferences represented the only stimulus towards a more export-oriented strategy by Portuguese firms in the period 1959/6.

As to those industries whose processing costs are higher than abroad, tariff preferences provide a margin for competitive price cutting, which may fully compensate for the original disadvantage. Depending on the extent of the preferential margin, the bias against exporting may be partially compensated after equalization of price at the competitors' level is guaranteed. The fact that Overseas Provinces offered a much higher preferential margin to Portuguese goods than EFTA explains why the   structure of exports towards them was much more diversified, and included articles such as rubber and plastic articles, base chemicals, paints and varnish, miscellaneous chemicals, machinery, etc.

2.6. The attempted reforms in other economic policy fields and their impact on industrial development

The EFTA agreement provided two important contributions to industrial development in Portugal. It established a fixed time period (approximately 15 years) during which the structural adjustment of Portuguese economy should be concluded. And it gave incentives, through a one-way preferential scheme, to the expansion of exports where Portugal possessed "natural" comparative advantages, whose currency earnings might partially finance the increased imports of machinery and inputs that further industrialization would require. Given this favourable external environment, balanced macroeconomic aggregates, and solid foreign currency and gold reserves, there were good prospects for this structural adjustment to take place during the next decade and a half. However, given the traditionally important role of the State in Portuguese economy, this achievement was to a large extent dependent on the success of the reforms to be implemented in several other fields of economic policy : planning, credit, budget, industrial licensing and foreign investment.

a)- <u>Planning</u>

Between 1959 and 1968 the experience of macroeconomic planning in Portugal was particularly rich. Three successive Plans were in force, embodying different concepts, objectives and techniques. Until 1964, it was the stage of implementation of the Second Development Plan. In a period characterized by much uncertainty, the authorities decided to set forward some economic reforms that were reflected in an Interim Plan, to be implemented between 1965 and 1967. In the meanwhile, economic studies were being carried out for the preparation of the Third Development Plan, to be in force between 1968 and 1973.

The Second Plan was essentially a coordinated program of important investment projects, both public and private, that represented approximately 30 percent of total gross fixed capital formation during the period. Despite the inexistance of a formal economic model, a global GDP growth target of 4.2 percent was set , which was largely exceeded by the actual performance of the economy, that grew at an annual rate of 6 percent.

The forecast investment program was satisfactorily carried out in most sectors, except in agriculture, where there was a serious shortfall. More than half the 27 billion Escudos of investment funds actually spent during the Plan were allocated to the secondary sector, whereas the primary sector did not deserve more than 4 billion. Within the secondary sector, the enlargement of the electrical power network and the setting-up of large-scale production units in the so-called "base industries (steel, fertilizers, basic intermediate chemicals, petrol refineries, paper paste, tobacco manufacturing) were especially privileged.

The direct participation of the State in such projects, both financially and technologically, meant a substantial subsidization of fixed capital costs. This policy helped the emergence of powerful financial and industrial groups, that enjoyed monopoly positions in the intermediate sectors of the industrial structure, in addition to positions held in banking, insurance and overseas trade. The process of industrialization in Portugal was accompanied by increasing concentration - social, economic and geographical.

The industrial objectives of the 2nd Plan included also the modernization and reorganization of traditional industries, but this objective was neglected in practice [90]. Not only because it needed a reorganization program, specifically adjusted to small and medium-sized firms, but also because there were no incentives for these firms to enter a process of

adjustment. Protection towards domestic and foreign competition continued
to be afforded by licensing and the Tariff, whereas the bonds issued by
the monopoly firms with State support provided a safe and profitable altern-
ative for investment.

The decision to implement a three-year Plan in 1965, instead of
the usual six-year Plan, was justified for three reasons. __91/__ First,
there were uncertainties about some important exogenous variables, namely
the effects of economic integration in Europe and in the Escudo area and
the trend of military expenditure. Second, some of the projections were
inevitably based on inadequate statistics, which would be improved only
during the second half of the decade. Third, the new plan intended to be
more than a list of investment projects: to a large extent, the projected
structure and development of output and demand was conceived as a target.__92/__
Such projections needed to be reviewed in the light of experience after a
not too long period. Within the plan period, the procedure of the annual
programmes provided for flexible policies and possible revisions of the
investment targets.

The plan aimed at a growth rate of GNP of 6.1 percent per year,
which was in line with the growth achieved during the previous plan. Moreover,
it considered explicitly that manufacturing and tourism should be the most
important dynamic sectors of the economy and   induce expansion in
other sectors, whereas agriculture was treated generally as the residual
sector. An ambitious target of 9.5 percent was set for the annual growth
rate in manufacturing,   An important contribution to indus-
trial expansion was expected from foreign demand for Portuguese manufac-
tured exports which was forecast to grow at annual rates of 8.6 percent
(textiles) and 10.8 percent (other products). Together with an ambitious
growth target of 16.5 percent in tourist receipts, these developments would
account for an annual growth rate of 8.3 percent in total exports of goods
and services. As imports were forecast at 6.5 percent only, an improvement
in the external balance was expected. This favourable evolution presupposed
that the import substitution effort would go on, with emphasis being laid
on capital-intensive ventures as previously.

The industrial development strategy that had been favoured, and
was extended into the Interim Plan, did not provide enough outlet for the

labour supply. Summing together the increase in the active population and the labour released by the primary sector, one obtains for each year during the 1965/67 period an additional 66,800 workers, of which only 20 percent would find employment in manufacturing activities $\underline{93}/$. 40 percent would be forced to emigrate and the rest were distributed among services and construction. Emigration was therefore considered to be an integral piece of the development strategy, strictly related to the neglect of the primary sectors and the emphasis on import-substitution of the capital-intensive variety.

The average annual value of total investment to be carried out during the Interim Plan in the Metropolitan area was forecast at 13.3 billion Escudos. While actual investment expenditure lagged considerably behind forecasts, the target represented a considerable quantitative improvement in relation to the value achieved during the Second Plan - about 4.5 billion Escudos. A stronger commitment by the government in terms of directly financed investment is revealed by an increase from 1.8 to 3.47 billion Escudos, between the Second and the Interim Plans. Industrial activities were again strongly privileged by the allocation of investment funds, with 45 percent of the total (actually much more than previously).

An innovative aspect of the Interim Plan was the statement of new policies specifically tailored to the need of promoting exports, in particular of products that were not traditional. However, as we have just seen this innovation had few immediate practical effects, and the manufactured export boom of the mid-sixties has to be attributed to EFTA preferences, to a very large extent.

The new prospects for exports opened up by EFTA membership , together with the sharp increase in f.d.i. inflows after the 1965 liberalization, played also an important role in accelerating industrial growth. During the period covered by the Plan, industrial output grew at an annual rate of 8.2 percent and gross fixed investment at 11.2 percent, 3 points higher than the Plan forecasts. This performance was possible despite the stagnation of real public investment (including expenditures other than those included into the Plan) after 1964.

During the period of the Third Development Plan (1968-1973), neither the planning concept nor its development strategy were subject to significant changes. The forecast growth rate of GDP was set at 7 percent, with tourism, manufacturing and building as leading dynamic sectors, and primary activities as a residual. Industrial development would still be dominantly based on capital-intensive ventures. Gross fixed investment was fore-

cast to grow 9 percent annually, whereas industrial employment was expec-
ted to grow only 1.7 percent.

On the other hand, the allocation of expenditures included in the
annual investment programs was to suffer a considerable revision. Whereas
fixed investment in non-industrial sectors (especially social services and
transports and communications) was planned to be twice as high as the aver-
age level achieved duraing the Interim Plan, the industry's share of program-
med investment fell to approximately one half of what it had been previously.
This decline reflected a change in criteria regarding the inclusion of indus-
trial projects into the expenditure program. In the past, the annual pro-
grams for the industrial sector had included not only projects for which
full or partial government finance was foreseen, but also a large volume of
private investment which the authorities had reasons to believe would be
carried out. Now, it had become clear for planners that a significant share
of these projects were insufficiently prepared to allow investment expenditure
to be quantified, and consequently should be excluded from the annual programs.
Only 22 percent of a total value of 51.3 billion Escudos that had been planned
for industrial investment during dthe six-year period corresponded to private
ventures that met the basic requirements of the plan. It would be correct to
state that there ceased to be programming of industrial growth $\underline{94/}$, if this
were conceived only as projects carried under direct supervision of the autho-
rities. However, these might still exert a considerable influence upon the di-
rection of growth by means of other policy instruments.

b) Industrial, monetary and budgetary policies

Towards the end of the decade, the government increasingly announ-
ced its preference for a more flexible kind of policy intervention in the
economy. Credit and budgetary policies should play a more active role both
in development and counter-cyclical fields of intervention, while direct
administrative controls should progressively loose much of their importance.

The need to reform the legislation on industrial licencing was
recognized in both the Interim and the 3rd Plans, and a first attempt to
bring forward some decisive changes was made in November 1965, with the pub-
lication of Decree-law nº 46,666. The objective of this amendment was two-
fold. Firstly, to delegate certain powers of decision in the field of indus-

trial policy to local authorities in the overseas provinces. And secondly, to reduce progressively the interventionist character of licencing, thereby simplifying simultaneously the administrative procedures.

The second objective was the subject of a heated controversy that lasted for a whole decade. The 1965 amendment stated that the government should be progressively relieved from the task of judging about the economic validity of a specified project, to concentrate instead on the task of checking minimal standards of quality and of working conditions. Only in those cases where government was called to assist the setting up of a new venture with fiscal or credit facilities, should it assess its viability in terms of size and technology.

The reservation of more or less fixed shares of the domestic market to individual firms by means of industrial licensing could only make sense as long as two additional assumptions were being fulfilled: that tariff protection were of the "made-to-measure" variety and held at near-to-prohibitive levels, and that sales to foreign markets represented a minor share of total output. The coming liberalization of trade relations destroyed the justification for industrial licensing in the near future. Those firms that were able to export could dispense with it, as output was no longer bounded by the narrow domestic market. Also those import-competing firms that could not be protected by "natural" trade barriers, should prepare themselves to share with foreign competitors an increasing share of their market "reservations".

However, opposition to the declared intention to reduce the number of industries subject to economic licensing was strong enough to deprive the 1965 amendment of any practical effect in this field [95]. Only five years later, was it possible to implement the new licensing regime at the territorial level, with a new list of "conditioned" industries.

Traditionally, monetary and credit policies had played a very minor role, both in terms of short-term management of the economy and promotion of long-term growth. The necessary institutions were lacking and an excessively cautious intervention of the government on the banking system raised unnecessary distortions and made it a poor vehicle for the allocation of savings into productive investment. Rigid legal ceilings on interest rates had been maintained for a long period, at levels which were most of the time artificially low.

The discount and the re-discount rates had been frozen at 2.5 and

2 percent, respectively, for more than twenty years. Only in 1965, were they
increased by 0.5 percent, together with other interest rates. But ceilings
persisted at rather low levels and private money savers had little incentive
to channel their savings through the banking system. As the market for primary
securities continued to be undeveloped, the outcome was an insufficient re-
lease of resources for investment.

On the other side of the market, excessively low interest rates
charged on loans gave rise to an excess demand in the credit markets over
available supply of funds. This excess demand could only be accomodated by
credit rationing, which presents three main shortcomings. In the first place,
it tends to inhibit innovation. It will shift credit towards enterprises
where the administrative costs of lending are low and the threat of default
appears to be minimal, i. e. large firms enjoying well established positions
in the market, and divert it from small firms dealing with new technology
or new products, even if their internal rate of return seems to be high. In
the second place, it tends to inhibit economic flexibility. The allocation
of credit will be determined by the business linkages inside the same indus-
trial-financial group (and this is the reason why most of these groups grew
around a bank in Portugal) and will privilege those ventures where the gov-
ernment holds an influential position. Either way, the economic criteria
will not be determinant in the allocation of credit. Finally, cheap borrowing
costs will encourage firms to use excessively capital-intensive technologies,
and will therefore move the economy further away from its pattern of com-
parative advantages.

During the second half of the 1960s, a few developments took place
in the field of money and credit policy. Lower interest rates were created
for special operations and new facilities were provided to meet the special
credit needs of particular sectors. However, the effectiveness of selective
credit was small, as supply was discouraged by the relatively higher costs of
lending and demand was not stimulated due to the narrow difference between
normal and preferential rates. Furthermore, as the reduced rates were applied
at the re-discount level only, the reduction in credit costs might not be
fully passed on to the final users.

In an effort to channel savings towards longer-term deposits, the
range of interest rates was enlarged. But ceilings continued to be set low
particularly in what concerned the rates offered on private issues of bonds.
The purpose of this limitation was that the private sector could not overstep

the banking system and the central government in the attraction of funds.
Consequently, an unequal pattern of financing remained, whereby State-
supported firms could enjoy cheap credit and therefore engage in over-
sized, capital-intensive ventures, whereas innovative, "fresh" firms
either faced a lengthy domestic credit rationing, or resorted to foreign
financial markets, whith   higher interest rates.

OECD experts had always been very critical of the prevailing
orientations in respect of budgetary policy. It was, they insisted, inade-
quately geared towards development. The public administration had run con-
sistently surpluses, whereas the reserves in gold and foreign currency did
not stop to grow. However, the public share in fixed asset formation fell
during the period 1965/67. The implementation of the 3rd Plan was accompanied
by a series of public statements that stressed the need to make budgetary
policy more expansionist. In order to fulfill the programmed targets, a sub-
stantial increase in government spending in investment was required — 40
percent from 1968 to 1969. The authorities sought also to create new incen-
tives for private investment. These included (besides customs duty exemptions),
reductions in the industrial tax on capital goods acquired by certain indus-
tries, and more favourable depreciation allowances.

However, just alike reforms in other policy fields, the actual
results did not match the declared intentions. Between 1968 and 1970, the
current savings of the public sector continuously exceeded the fixed in-
vestment expeditures, thereby raising a cumulative overall surplus (net
lending) of 5.63 billion Escudos during that period. Consequently, instead
of adding, the State subtracted resources from the private sector, and the
growth potential of the economy continued to be underutilized.

c)- Policy towards foreign investment

Due to the unfavourable international environment and the restric-
tive conditions imposed by domestic legislation, the inflow of private for-
eign investment was meaningless during the first three decades of the New
State. Public external borrowing was avoided as a matter of principle.

After 1960, under the influence of political and economic factors
this policy orientation was thoroughly changed. The external convertibility
of the Escudo, while restricted to current payments, facilitated capital
movements as it allowed for a smoothier repatriation of dividends and in-

terests. As we saw earlier, the membership of EFTA, while not directly
obliging in this respect, made it clear that current restrictions were
contrary to the full benefits expected from trade liberalization. Further-
more, the outbreak of warfare in Angola, in 1961, led the Portuguese
government to establish closer financial ties with the major business
centres in the West, in order to gain diplomatic and financial support.

The changeover in policy was first revealed by the reappearence
of the Portuguese State as a borrower in the international financial
markets. Starting in 1962, several subscriptions of bonds issued, not
only by the State, but also by public firms and some banks, were opened
in the London and New York markets $\underline{96/}$. Between 1964 and 1968, foreign
borrowing was particularly dynamic   . A total of 7,827 million Escudos
was obtained , which corresponded to 7 percent of gross fixed capital
formation and to 15 percent of the cumulative trade deficit during that
period. Despite its relativey small importance, foreign borrowing played
at the time two important roles. In the first place, foreign loans con-
tributed to 56 percent of public investment over the period 1964-68, which
mitigated the tensions that otherwise might have developed as a result
of shifting resources from development to military expenditure. Secondly,
Portugal obtained good international image as a debtor at a time when
it was still unknown how far could the economic and financial situation
deteriorate as a result of the war effort. After 1968, there was a
reverse in this policy, and instead of intervening directly in foreign
operations, the State provided guarantees to financial operations in the
benefit of large firms and consortia.

Starting in 1960 $\underline{97/}$ a number of regulations and laws was passed,
the purpose of which was to make more attractive to foreign capital the in-
vestment in the Portuguese economy. The most important among those was the
Decree nr. 46,312 of 28 April 1965, which stated that the authorization to
foreign investment in certain areas of the economy, "would always be given".
The liberalized areas were defined later, but the list was so wide,that it
became void of practical interest. With the new legislation, the right to
set up a business in any of the liberalized sectors could no longer be
denied on the sole basis of nationality. But, as industrial licensing was
still in force for a large number of activities, the authorities could
actually refuse permission to any foreig venture, whichever the sector.

Furthermore, the access to some activities, in particular those connected
to public services and defence was restricted to nationals (or at least the
majority of the social overhead capital). The access to other sectors
was left unclear or was further submitted to special restrictive legislation
as in most tertiary activities, tobacco manufacturing, energy, fisheries
and building. Despite the originally liberal intentions, a legislative maze
grew up surroundig the conditions of effective access to industrial activity
which must have discouraged many foreign firms to invest in Portugal.

It was rather in the field of the guarantees given to foreign in-
vestors that the new legislation may be said to have contributed effectively
to attract new investment. It promised "just and equitable treatment", no
discrimination regarding the repayment of investments, full and prompt com-
pensation in the event of nationalization, total freedom to send profits and
dividends abroad and the possibility of tax exemptions.[98]/

As an outcome of the new legislation, there was after 1965 a
pronounced rise in private capital inflows. However, the importance of
f.d.i. among other types of foreign financial involvement never reached
the same levels as it did in other semi-industrialized open economies.
During the period 1965-69, f.d.i. amounted to approximately 4 million
Escudos, which represented a share of nearly one-fifth of total private
foreign investment (i.e. including portfolio inflows and commercial and
financial loans) and only 4 percent of gross fixed capital formation in
the private sector. [99]/ Manufacturing activities attracted the largest
share of f.d.i. (approximately 37.4 percent), whereas the acquisition of
buildings represented 33.1 percent, and the remaining was shared between
construction, trade, estate business and tourism.

It may be misleading to assess the importance of f.d.i. to the host
economy just in terms of the capital flows that it originates. An interna-
tional transfer of resources other than capital is involved in f.d.i. —
technology, management, organisational and marketing skills —, and it is
the expected return on these, rather than on capital per se, that prompts
firms to become multinational.

A more realistic picture of the importance of f.d.i. in the Portu-
guese economy may be obtained from a survey into the signs of the presence
of foreign capital in the social overhead capital of corporate firms. L.S.
Matos (1973) found out such signs in approximately one thousand firms, rep-

resenting 20 percent of total corporate capital in Portugal over the period 1969/71. Forty-two of these "foreign" firms were listed among the one-hundred largest in the manufacturing sector, and sixteen were among the fifty largest in wholesale and retail trade [100].

From the data gathered by S. Matos as to the sectoral distribution of f.d.i. it is unlikely that the pattern of traditional comparative advantages, concentrated in labour and natural-resource intensive industries, has been its main determinant. No traditional sector reveals a share of foreign over total capital higher than 25 percent, except in clothing and footwear (where rapid inflows of EFTA-origin f.d.i. took place in the mid-sixties, in order to take advantage of cheaper labour costs and expand their market shares at home). On the other hand, in modern sectors, like chemicals, electrical machinery and transport equipment the penetration ratio of foreign capital was above 5o percent (S. Matos, op. cit., Table XVI).

Other location-specific assets, besides low wages or resource availability, were influential in attracting f.d.i. to Portuguese manufacturing. One of those assets was tariff policy. In so far as a high effective rate of protection is guaranteed in a specific market, the propensity to serve this market from local production instead of imports increases. On the other hand, when a country benefits of tariff preferences in foreign markets where protection against direct foreign competitors is significant, there is a propensity to serve them from production locations inside the preference-receiving economy.

Some manufacturing branches, like rubber (tires, in especial), transport equipment and some chemicals reveal simultaneously high rates of effective protection and high ratios of foreign capital penetration. In such cases, tariff policy acted as a stimulus to foreign direct investment, by allowing foreign firms to reap excess value added in relation to exports, as a price to pay for expected benefits in terms of technological diffusion, employment creation and currency saving.

Location-specific factors do not exhaust the set of relevant explanations for the pattern of f.d.i. in any host country. According to the modern theory of international production [101], the decision of a firm as to whether become multinational or not is primarily taken in view of the ownership advantages that it possesses vis-à-vis competing firms in serving a a specific market: intangible assets, such as technology, or-

ganization and human skills, which are created by the firm itself or purchased
from other institutions, but, at least for a period of time, are exclusive
to the firm possessing them. Once in the control of such assets, the firm
may choose either to use them itself or to sell or lease them to foreign
firms. In the first case, the proprietary firm would internalize its advan-
tages, in order to capitalize on the advantages of imperfections or disequi-
libria in external mechanisms of resource allocation, especially the price
system and the public authority fiat. The areas in which the participation
of MNEs is most pronounced in host countries naturally reflect the conver-
gent action of these two factors.

Two of such areas are of special importance to Portugal. One in-
cludes export-oriented primary goods requiring large amounts of capital and/
or access to foreign marketing and distribution - processed pulp and paper
paste. The second one includes technologically advanced manufacturing indus-
tries and /or industries producing branded consumer products - it is the case
with transport equipment, electrical machinery and apparatus and chemical
products for final consumption.

The outcome of this early stage of foreign capital liberalization
was not judged positively. Despite sectoral contributions to improved ex-
port performance and employment creation, a too large share of f.d.i. was
concentrated in "footloose" types of ventures, that relied heavily on cheap
workforce and the facilities for quick repatriation of dividends. In the so-
called modern sectors, the domestic contribution was reduced to little more
than assembling operations and the retail network. No machinery had been
devised so far to channel foreign investment into sectors of the economy
where it would be of lasting benefit for development, particularly in the
shape of bulky investment projects combining high technology and modern
expertise.

CHAPTER 3

TOWARDS FULL MEMBERSHIP OF THE EEC
- BETWEEN AN OUTWARD-LOOKING AND AN
ADJUSTMENT-BLOCKING STRATEGY

3.1. The economic reforms of the period 1969-74

The strategy of import-substitution was showing signs of progres-
sive exhaustion towards the end of the 1960s. After a short period of dy-
namic growth, that owed much to manufactured export expansion, industrial
investment figures dropped successively in 1967 and 1968   , whereas
public capital spending continuously failed to recover the pre-1964 levels
in real terms. Uncertainty as to the acceptance of the United Kingdom into
the EEC had nourished the ideal of "an integrated national space" in oppos-
ition to building closer ties to Western Europe. After the Hague Confer-
ence in December 1969, however, it became clear that the pace of Euro-
pean integration was going to be faster ਾTo Portugal, the first enlarge-
ment meant that its main export markets were henceforwards subject to a
common integrating process, and that a free trade area for industrial pro-
ducts was now in sight. Portugal had to engage deeper yet in the process
of mutual trade liberalization, or otherwise loose much of the recently
obtained commercial positions for its manufactures.

The new generation of government senior officers who came to
power after 1968 were commited to a program of economic reforms, designed
ultimately to prepare the Portuguese economy to overcome the forthcoming
"European challenge". Among other aspects of the reformist program in the
economic area, two were of outstanding importance.

In the first place, the macroeconomic policies should be geared
towards more ambitious growth targets, given the permanent surpluses in
the balance of payments. State expenditure in social, transport and power
infrastructures should be increased, and more expansionary policies in
the monetary and budgetary areas should be endorsed.

In the second place, a new industrial policy should be implemented
with the objective of gearing resources increasingly towards those sectors

that hold potential comparative advantages and to reorganize the most tra-
ditional sectors in domestic manufacturing. Instead of relying in the do-
mestic or colonial markets, Portuguese industry should take full benefit
of the international division of labour.

During the first half of the period of execution of the Third
Development Plan, actual performance had lagged behind the main macroeco-
nomic projections. GDP at factor cost had grown at an average annual rate
of 6.3 percent, whereas the Plan aimed initially at 7 percent. This short-
fall was due to a slower investment growth than predicted - the average
growth of fixed asset formation had been 6.8 percent during the period
1967-70, whereas the projected growth was 8.5 percent.

In 1970 new projections were prepared for the following three-
year period, which included a slight acceleration of GDP growth to 7.4
percent a year, and a deterioration in the current balance, under joint
pressure from increased machinery imports and more intense competition
in foreign markets for tourism and labour-intensive manufactures.

The need to reverse the declining trend in public investment
during the second half of the Plan is well revealed in the value of the
scheduled investments . Particularly steep rises would take place in
tourism (58%), infrastructures (87%) and social investment (38%). The
scheduled investment to be carried out during the second half of the Plan
would amount to 60.88 billion Escudos, against a forecast of 38.48 billion
during the first half. It represented 57 percent of the total fixed asset
formation forecast for the period.

However, this announced intent on the part of the State to step up
its participation in the investment effort , especially in what concerned
physical and social infrastructures, did not materialize as expected. The
achievement levels relative to forecasts were even lower than the average
recorded for the three previous years [102/]. The constant failure of the
planning authorities to fulfill their initial targets, despite the state-
ments of intention, was attributed to the poor preparation of the projects
and administrative delays. Furthermore, a good share of the responsibility
for the failure to achieve the initial investment targets belongs to
budgetary policy.

According to the purposes stated in the Budget Laws from 1968
onwards, the budgetary policy should cease to aim uniquely at financial stab-

ility.An expansionary policy should be followed, whereby net current savings
of the public sector would be exceeded by public investment, so that a net
public borrowing requirement would arise. In fact, the opposite pattern
emerged from the aggregate public sector accounts, in the period 1969-72.
The public sector acted as a net money lender to the economy, the excess of
current saving over gross fixed investment having ranged between 1.9 percent
of the GNP in 1969 to 2.6 percent in 1970. Gross fixed investment by the
public sector grew smoothly at an average annual rate of 7 percent in the
same period, in constant prices, but current tax receipts increased faster
than current expenditure. This unexpected outcome may be attributed
in part to the poor preparation of budget forecasts, especially on the
receipt side. But concern over the possibly adverse impact of an expansionary
budget upon the inflation rate may have been an explanation also. Price rises
had become important in Portugal towards the end of the 1960s 103/ and the
statistics did not show any sign of a slowdown.

The twin objectives of expanding economic activities and shift-
ing resources towards productive investment were more successfully achieved
by resorting to monetarypolicies. After 1970, the range of deposit
rates was widened , so as to shift private savings from sight deposits
to longer-term deposits (between 6 months and 1 year), and money savers re-
sponded actively to this measure. Between 1969 and 1970, quasi-money supply
increased 33 percent, while the value of sight deposits nearly stagnated.
As the authorities decided to lower the minimum reserve requirements con-
cerning sight deposits, the lending capacity of commercial banks increased
substantially in 1970 and 1971, which had a stimulating effect over the
economy as a whole. Medium and long-term loans increased at a very fast
rate, but still remained a minor share in the aggregate portfolio of com-
mercial banks. The market for primary securities remained in an incipient
stage, as the increasing number of new issues was carried out within a
closed circle, and did not attract the mass of potential money lenders.
Consequently, the largest share of savings continued to be attracted by the
money market and not by the capital market.

The outline of a "new industrial policy" was formulated for the
first time, in clear terms, in a speech delivered by the then Secretary
of State for Industry, Rogério Martins, in February 1970 104/.
The whole strategy was based on the assumption that the resource

endowment of the Portuguese economy made it naturally very "open" to international trade. Abundant resources of labour and mineral ores coexist with a favourable geographical location, on an inter-continental crossroads, and a small domestic market. However, in the past, economic policies tended to favour an inward-looking development, which distorted the allocation of resources and the distribution of income and reduced artificially the size of the market. It also implied an adverse bias towards exports, which made it increasingly difficult to finance imports of capital and intermediate goods necessary to development.

In order to accelerate the rate of growth of industrial output and to modernize the industrial structure, a new industrial policy should be implemented, aiming at two specific objectives:

   i) - To encourage a rapid adaptation of domestic firms to the reality of international competition.

   ii) - To improve the trade balance, by increasing the exports of products that might be produced in competitive terms and promoted the rapid growth of domestic value added.

Actual and potential comparative advantages existed in those industries that used intensively domestically available mining and forestry resources, /moderately skilled labour resources, that took advantage of geographical location assets or that enjoyed important externalities due to their linkages with expanding branches. These were the "preferred" industries whose priority was greatest in attracting new investment and government support[105/].

The situation of near full-employment in industry meant that some of the needed resources should be released from those branches that did not show any possibility to be internationally competitive, either on foreign markets, or on the increasingly liberalized domestic market itself. For the first time ever, a clear perception was revealed by authorities that a number of industrial branches had to be reorganized or abandoned altogether in the coming future. This attitude marks a clear departure from traditional views, which maintained that any form of investment should be protected by the State against competition risks.

An essential point was maintained: that industrial development should be based essentially upon private enterpreneurship. Government intervention should shift increasingly towards an incentive providing role, instead of engaging itself deeply in management or administrative controls.

The tendency towards a more liberal, flexible approach to industrial policy was confirmed in May 1972 when the Parliament voted new legislation (after a period of 14 months of debates). The law 3/72 sought to substitute a selective system of incentives to private investment (including subsidies, preferential credit, tax exemptions) for the administrative control by means of licensing. The incentives would be granted to any requirement satisfying minimal criteria, in accordance to a graduating scale that was established on the basis of the defined priorities for industrial development, and divided investment projects into five classes.

Licensing should be replaced by an "orientation" scheme" that envisaged three different situations:

i) Industries with very diversified linkages, or supplying important inputs, for which the creation of new firms, and the modernization of existing ones, should be subject to discretionary licensing, on a case-by-case basis.

ii) Important industries should be subject to minimum size requirements in technical and financial terms.

iii) All other industries would be left free of any legal restraint, except in what concerns health and safety regulations.

In practice, these two policies - incentives and licensing - co-existed side-by-side until the latter was abolished in May 1974. A few months after the guidelines for the new industrial policy were announced, the old policy of licensing was still being implemented, according to the 1966 partial reform. Two lists of industries were published [106/], one for national licensing and the other for territorial licensing. The first one included a total of 32 industries, concentrated on the "heavy", modern sectors such as engineering, base chemicals and base metals. The second list included 98 industries which were subject to previous licensing confined to the areas of the Continent, Madeira and Azores [107/].

While expressions of distinct development strategies, industrial licensing and incentives came to be seen (e.g. by the Decree-Law nr. 75/74 of February 1974) as complementary actions of "positive" adjustment policy. Unnecessary costs should be avoided in the process of resource reallocation by making it as smooth as possible . The continued reservation of domestic market shares to firms in "conditioned" industries (in decreasing number) sought to provide a transitional period for their internal re-

adjustment to the emerging foreign competiton on the domestic market, par-
ticularly in those sectors where scale economies were relevant. On the
other hand, the policy of fiscal and financial incentives sought to sub-
sidize the formation of gross assets in new firms to be established in
the priority sectors.

      This dual industrial policy can be criticized on at least two
grounds. Firstly, by creating barriers to entry in industrial sectors
that would be exposed sooner or later to foreign competition, licensing
was contributing in the long run to the replacement of domestic production
by imports, instead of favouring reorganization by means of the introduc-
tion of foreign technology associated or not to foreign capital. This
inconvenient, together with the ideological prejudice in favour of "equal
opportunities" for all entrepreneurs justified the complete abolition of
the licensing regime as one of the early measures taken by the first
post-Revolution government.

      Secondly, the alleged "economic rationality" of the New Industrial
Policy has to be qualified in one important aspect. While liberalizing cons-
iderably the mechanisms of government intervention, and imposing market
criteria in the ex ante assessment of new industrial projects, it still
relied heavily on direct support by the State. This remained a necessary
condition for the launching of some bulky investment projects, not only
because of the general scheme of incentives, but also because it was ex-
pected to serve as an intermediary in the promotion of concentration and
cooperation between firms and in the obtention of foreign financing. State
support depended on authorities' own vision about the future prospects of
world market growth and foreign competitiveness $\underline{108/}$. In the Portuguese
case this vision was to prove dramatically wrong after the 1973 oil crisis.

3.2. The Free Trade Agreement with the EEC

      With the decision by Britain and Denmark to enter the EEC from the 1st
January 1973, it became important for Portugal to conclude a trade agree-
ment with the EEC, given the major position occupied by these two countries
as trade partners — they represented 25.3 percent of foreign purchases
of Portuguese products in 1970. In fact, Portugal had already in 1962 asked
for the opening of negotiations, but these did not proceed because Britain
failed to enter in that year. Again in 1967, the Portuguese government
reiterated its demand for negotiations following the second formal appli-
cation by Britain. But it was only after the Hague Conference in December

1969, that effective negotiations started between the EEC and those two candidates plus Norway. Following a decision taken in the same Conference about the non-candidate EFTA countries, talks began in November 1970 with a view to establish bilateral free trade areas restricted in principle to industrial goods, with each of them. The Agreement that was signed between Portugal and the EEC on 22 July 1972 was thus basically a free trade agreement, similar to all those established with the members of mini-EFTA, although in some respects the special features of Portuguese economy and trade were taken into account.

The first enlargement was not, however, the only justification for a closer trade relationship between Portugal and the EEC. After 1961, a series of bilateral commercial treaties, most of a preferential character, had been signed between the EEC and several Mediterranean countries. Due to the wide coincidence between the export product patterns of Portugal and these countries (especially the more industrialized ones, as Spain, Israel and Greece), it was obvious that these treaties resulted in an increased discrimination against Portuguese products in the EEC markets. Consequently, even if the accession of Britain and Denmark had failed, it would be very likely that Portugal applied for some form of preferential agreement, possibly along the Spanish and Israeli lines.

There are three aspects of the Free Trade Agreement that deserve special attention: the general nature of the Agreement, the mutual tariff dismantling in respect of industrial goods, and its assessment relative to other preferential treaties signed by the EEC.

a) The general nature of the Agreement

The membership of EFTA provided Portugal with valuable assets in the negotiations with the EEC. In the first place, Portugal was able to circumvent any political objections that might have been raised regarding her preferred status as an EEC partner, of the kind that delayed and somewhat diminished the impact of the treaties with Israel and Spain. In the second place, as Portugal had been accorded special treatment by EFTA because of its less developed status, the same happened when the terms of its free trade agreement with the EEC were negotiated. Consequently an unbalanced agreement was struck, whereby the EEC granted tariff preferences to Portuguese industrial goods and also to some agricultural goods, whereas the Portuguese were permitted to retain their tariffs longer than other parties to the EFTA agreements, and to introduce infant-industry duties. It is true that the terms of the 1972 Treaty cannot be considered so favourable as

those of the Stockholm Convention because some of Portugal's major export commodities were subject to tariff quotas, thereby limiting their potential trade expansion. But these restrictions were not so important as to reverse the general nature of the agreement. Much would depend on their implementation, and besides, similar restrictions applied in other agreements with EFTA countries, concerning a number of "sensitive" products from the viewpoint of each partner.

Another general feature of interest was the flexibility that was revealed in many clauses of the Agreement, particularly in the so-called "evolutionary clause". Every Free Trade Agreement (FTA) contained a clause that read: "Where a Contracting Party (CP) considers that it would be useful in the interest of the economies of both CPs to develop the relations established by the Agreement by extending them to fields not covered thereby it shall submit a reasoned request to the other CP". For Portugal, the clause read: "Where a CP considers that it would be useful in the common interests of both CPs..." [109/]. By this subtle change in wording, a door remained open to Portugal, enabling it to request negotiations for a more ambitious form of integration, independently of the balance of mutual economic gains, as soon as certain political transformations had occurred (de-colonisation, establishment of a representative democracy) [110/]. This clause reflected the then uncertain direction of the future developments in Portuguese external policy, both in economic and political terms, and was to gain enormous importance after the 1974 Revolution.

On its own, the 1972 Agreement had only a commercial character. Like most other treaties that had been established with Mediterranean countries, the problems related to technical assistance, financial contributions and labour movements were not included. Until 1972, only the Association agreements with Greece and Turkey contemplated such matters.

Finally, the eventual application of safeguard measures was explicitly recognized in a number of cases: unusual conditions of competition, balance of payments difficulties, actual threat to domestic production caused by an import surge, or serious disruption in any economic sector or regional activity. These clauses were to prove a decisive element in the future development of the Agreement.

b) Trade in industrial products

The general tariff-cutting schedule for industrial products (including ECSC products) was identical for all Trade Agreements with EFTA countries. Mutual tariff reduction would take place in Portugal and each

of the six original EEC members and Ireland in five successive annual cuts
of 20 percent each. The first reduction was planned for the 1st April 1973,
and by · 1st July 1977, duties would be completely eliminated for the
products included under this regime. As far as Britain and Denmark were con-
cerned, free trade would continue to rule for all products not included
under Annex G. This general schedule covered 48 percent of Portuguese indus-
trial imports from EEC and Ireland in 1971, whereas zero duties were already
applied to 57 percent of imports from Britain and Denmark.

Also as a general principle, the Agreement established the progress-
ive replacement of fiscal duties by equivalent domestic taxes, the elimi-
nation of the protective element in fiscal duties, and the suppression of
quantative restrictions.

This general regime was subject to a number of important exceptions,
both on the export and the import side.

Some of the major exports of Portugal to the EEC were covered by
special provisions, related to the so-called regime for "sensitive products":
paper articles, cork manufactures, textiles and clothing . All paper
articles were subject to a slower tariff-cutting timetable
until January 1984. Britain and Denmark reintroduced duties in respect of
these products and, after a peak in 1977, they would be reduced again, until
complete elimination by 1984. For cork, textiles and clothing, tariffs
would be cut in accordance with the general schedule, provided that
exports to the EEC did not exceed specified ceilings in each year. Otherwise,
normal CET duties might be applied (or a given percentage of it, in the
case of Britain and Denmark), pending upon a decision of the EEC's COREPER.

Up to what extent could these restrictive provisions mitigate the
potential export expansion? In 1971, the products covered by these measures
represented nearly one third of Portuguese industrial exports to the Nine.
The real impact of such measures depended on the level at which the ceil-
ings were set, relative to the previous import levels.

Let us examine that question. If an importing country imposes
a tariff quota or a ceiling on the imports of a commodity, the trade effects
vary according to its size relative to the actual level of imports reached
in the absence of such measures. If the ceiling (or tariff quota) is
inferior to the actual level of imports, then the tariff preference is
unable to expand exports — there will be no trade effects. However,
that share of the customs revenue that corresponds to the tariff reduction
within the ceiling will be lost for the importing country's

government and will accrue either to the importing or to the exporting
firms,/to their access to market information and to their respective
according
bargaining power. There is, consequently a fiscal effect. If the ceiling
is higher than actual exports but lower than potential exports, it will set
a limit to the future increase in exports, which is dictated by the elastic-
ity of response to the tariff cut. If the ceiling exceeds the level of
potential exports, it becomes ineffective as a policy instrument.

Table I.6

Ceilings on exports of "sensitive products" (in tons)

BTN	Description	1972 Exports to EEC9	1973 Ceiling	1977 Exports to EEC9	1977 Ceiling
45.02	Cork simply worked	10,978	1,300	-	*
45.03	Natural cork articles	11,648	10,550	12,877	11,817
45.04	Agglomerated cork	11,492	11,700	-	*
55.05	Cotton yarn not for retail	16,824	8,000	7,466	10,260
56.07	Fabrics of discont. fibres	2,400	2,400	5,626	2,905
57.10	Jute fabrics	2,622	4,100	-	*
59.04	Cordage, cables, ropes	7,792	7,700	8,178	10,271
60.04	Knitted underwear	1,887	3,000	-	*
60.05	Knitted outwear	1,449	720	2,214	885
61.01	Men's and boy's outwear	2,075	980	2,361	1,110
61.02	Women's, children's outwear	551	290	808	339
61.03	Men's and boy's underwear	1,437	970	1,545	1,285
61.04	Women's, children's underwear	97	110	90	108

Sources: C. R. Fernandes and P. Alvares (1972, 1980)
Estatísticas do Comércio Externo, INE.

(*) Ceiling suspended.

Table I.6 shows the volume of Portuguese exports to the EEC - 9 in
1972 for all products subject to ceilings. Only in three of these products
— jute fabrics, knitted underwear and women's and children's underwear —
did the ceilings exceed the volume of past exports by more than 10 percent.
In all others, the ceilings were set at levels that remained close or far
below actual exports, which is an indication that they served the objective
of avoiding trade-creating effects.

Annual increases in the Community   ceilings of 5 percent (in the case of textiles) and 3 percent (in the case of cork) were foreseen in the Agreement. Assuming that GDP in the EEC countries continued to grow at an annual rate of 4.5 percent and that the income-elasticity of demand were equal to one for textile products and less than one for cork, one has to conclude that, at least until 1979, the Free Trade Agreement should not induce trade-creating effects in those sectors where actual compara- tive advantages were enjoyed by Portuguese producers. Any export expansion that might occur would result from trade diversion at the expense of com- peting third countries.

There were good prospects for trade diversion in favour of Portu- guese exports. The EEC average nominal tariffs for yarns, fabrics and cloth- ing in 1973 were estimated in 8.6, 14.3 and 16.4 percent, respectively, and therefore preferential margins offered substantial scope for trade diversion. Furthermore, in 1974 the world textile trade was entering a new stage of increasing protectionism, as the largest importers were given GATT appro- val to negotiate bilateral quotas with low-cost suppliers under the Multi- Fibre-Arrangement (D. Keesing and M. Wolf, 1980).

. The same arguments that had justified the extended protection to Portuguese industries in 1959 under the EFTA Convention, remained valid in 1972, with respect to the EEC. Two lists of products, that were subject to slower tariff-cutting schedules, were included in the Free Trade Agree- ment. The products covered by list A and the Annex to the ECSC Agreement (steel products) benefited of extended protection until 1 January 1980, whereas those covered by list B remained protected until 1 January 1985. As the composition of these lists was quite similar to that of Annex G, the special arrangement with the EEC implied that a five-year extension had actually been obtained for tariff protection in respect of a number of products whose imports from Britain and Denmark should be liberalized by 1980.

Portugal was also allowed to maintain quotas after 1973 for a number of commodities. They should be gradually increased until their complete elimination on 1.7.77 (some steel products), 1.1.80 (motor vehicles, steel and iron tubes) and 1.1.85 (petrol derivatives).

Finally, Portugal was allowed to introduce or raise duties up to 20 percent in order to protect infant-industries, provided that their share in imports from the EEC did not exceed 10 percent. These duties should be gradually eliminated until 1.1.85. As the similar clause in the EFTA Convention expired in 1973, Portugal was actually given a twelve-year

extension of this facility vis-à-vis competing imports from Britain and Denmark.

Therefore, Portugal managed to maintain a comfortable tariff protection for the bulk of its manufacturing production. Approximately 63 percent of industrial imports from the Nine in 1971 were covered by these special protective regimes. "List A" products accounted for 40.8 percent, "List B" products for 8.3 percent and products subject to quotas to 13.8 percent of total imports (P. Alvares and C. R. Fernandes, op. cit.).

c) Evaluation of the 1972 Agreement in comparison with the Mediterranean Agreements

The Mediterranean policy of the EEC developed as a joint outcome of mutual interests grounded on very different strategical perceptions. While the Mediterranean countries were essentially interested in establishing preferential agreements that avoided the loss of market shares as a result of previous agreements with other competitors and of EEC formation as such, the EEC countries developed a geopolitical concern for the stability in the area, due to its increasingly strategical role in oil supply. Unable to conduct a foreign policy of its own, the Community used its autonomous power in commercial negotiations as an instrument of international co-operation in the area .[111]/

The diversity of solutions found for the Mediterranean agreements reflected the shifting evaluations of each country's potential importance from the Community's viewpoint. The most generous and far-reaching agreements were the earliest ones, signed with Greece (1962) and Turkey (1963), because they were designed to prepare both economies for their future accession to the EEC. These pre-entry Association Agreements established the conditions for the progressive setting up of a Common Tariff, the free circulation of industrial goods, generous agricultural concessions, financial assistance and common procedures of decision-making, especially with a view to bring about policy harmonization.

The partially negative experience of these two Agreements forced the EEC to adopt a more pragmatic, less long-term view of its Mediterranean policy. The Association Agreements established with Malta (1971) and Cyprus (1972) left the question of EEC membership in open, and tariff removal was only partial. In the Agreements established with the Mahgreb countries the question of future membership could not even be posed. Their Associated status had only the purpose of promoting economic development through an unbalanced deal, whereby the EEC granted duty-free access to Mahgreb's

manufactures (with the exceptions of steel, refined petroleum and cork), in exchange for limited "reverse" preferences, that were subsequently eliminated. Since these Agreements did not envisage the formation of a customs union or even of a free trade area, they were contrary to GATT rules, but their example rapidly spread into other preferential treaties - that were negotiated with Spain, Israel, Egypt and Lebanon.

The Free Trade Agreement that the EEC established with Portugal does not fit in any of these types of Agreement, and indeed connot be placed against the same geopolitical background. In formal terms, it remains much closer to the other FTA's that were signed in 1972 together with the non-candidate EFTA members. It does not violate GATT rules, as it explicitly aims towards a free trade area, albeit restricted to industrial products, and it was not regarded as a preparation for future membership, in spite of the "Evolutionary Clause".

However, given the close similarity of the Portuguese export structure to that of most Mediterranean countries, and the more or less identical level of development, it was inevitable that the concessions granted in 1972 had been appreciated, especially from the EEC's viewpoint, against the Community's hierarchy of preferential relations within the Mediterranean area.

As a whole, the 1972 Free Trade Agreement compared favourably to the Mediterranean Agreements. From 1977 onwards, Portugal would enjoy intra-Community treatment for most industrial exports, a status that it shared only with Greece, Turkey and the Mahgreb countries (although the benefit was of limited scope for the latter, given their undeveloped industry). Ceilings to cork and textile exports were not uncommon when appreciated in comparison to the outright exclusion of cork manufactures from the Mahgreb Agreements, and the textile ceilings imposed on Malta, Turkey, Spain and Israel. On the other hand, the reciprocity requirements as to import liberalization were only comparable to those established for Greece. Both countries would be prepared to stand full competition with EEC producers by mid-1980s, at the latest.

Tariff preferences offered by the EEC on agricultural produce covered 68 percent of the agricultural exports from Portugal, which re-presents a larger share than in the Agreements with Spain, Morocco and Tunisia and the same as Israel. However, these concessions played a rela-tively smaller role within the Agreement, as the share of agricultural products in total Portuguese exports to the EEC (27.2 percent) was clearly below the average of the Mediterranean countries.

The preferences granted to tomato concentrate and pulp and tinned

fish were of special interest. Both commodities had been considered as industrial products under the Stockholm Convention. The accession of Britain and Denmark to the EEC implied that CET duties would be applied to Portuguese exports in these two important markets. The concessions offered to tomato products represented a 30 percent reduction of the CET, while Portugal had to respect minimum price levels and pre-defined ceilings. As only Greece, among non-EEC members, benefited of intra-Community treatment, that concession was relatively favourable. As to tinned fish, Portugal obtained tariff preferences ranging between 30 and 40 percent, which was less favourable than those offered to Greece and the Mahgreb countries but superior to those of Spain. Finally, Portuguese wines remained subject to tariff discrimination, as no preference was offered in their respect, contrary to what was common in most Mediterranean Agreements.

"Reverse" preferences had been granted by Mediterranean countries also in the agricultural sector. The share of agricultural imports affected by such preferences was especially high in the case of Greece (81 percent), Israel (80%) and Spain (49%). However, Portugal was not required to make concessions in this field, its only compromise being that of keeping the EEC share in total imports of some products (beef, pork, wheat, etc.) at the level reached in 1969/71.

In summary, although the conditions offered by the 1972 Trade Agreement are more favourable in general than those offered to the majority of Mediterranean partners (with the exception of Greece), the truth is that they can not compare to the outstanding terms negotiated with EFTA in 1959. Portuguese exports overlapped with considerable sections of the production and export structures of some EEC members and partners in preferential treaties. Therefore, the export concessions had to be less generous. And, on the import side, a definite deadline for tariff protection to domestic industries had to be established, on the account of the nature of the Free Trade Agreements with EFTA - extensive, full tariff elimination in accordance with GATT rules on preferential trade areas.

3.3. The 1974 Revolution and its impact on external economic relations

a) Revolutionary transformations in the economic system

The origins of the transformation in the economic system that took place after April 1974 can be traced back to the social tensions that developed in the last few years of the old regime. While large amounts of underemployed labour were still available in agriculture and other traditional

activities, the employment needs of the growing secundary and tertiary sec-
tors could be easily satisfied without major pressures on wages. Towards the
end of the 1960s, however, the increasing migration flows and the more and
more lengthy military service squeezed labour supply, especially in the
skilled and semi-skilled segments of the market. As workers were not free
to form independent trade unions and the right to strike was denied, impa-
tience mounted and the protests against both the government and big business
became increasingly politicized. Moreover, the growth process of the 1960s
had been fast and unbalanced. It gave rise to wide unequalities, both in
regional and in social terms, which were accepted as a sign that the re-
cently created wealth was unfairly distributed. As industrial relations had
been kept under strict control by the corporatist State, the workers' move-
ment grew unaware of the relationship between the firms' performance and
collective bargaining. It was only too natural, then, that once removed the
repressive institutions, a widespead movement took place, especially in the
"industrial belts" of Lisbon and Oporto, with a main objective: a call for
higher wages, shorter hours and better working conditions.

Until November 1975, the social and political climate was clearly
favourable to the rise of workers' power in wage bargaining. If a firm did
not grant the wage increase demanded by its employees, it ran the risk that
workers would sack its managers (the so-called "saneamento") and take control
of the business. On the other hand, if it gave in and raised wages, it did
so in the face of price controls that the government had instituted in the
meanwhile, with counter-inflationary purposes. In the latter case, losses
were almost a certainty or, at least, profit margins would be squeezed.
Exporting firms were confronted with a wide recession abroad, which made
the margin for price rises very tight.

The policies adopted by the early post-Revolution governments
propelled this tendency for rising wages. Sharp increases in the legal
minimum wage and in public sector wages were instituted, with the purpose
to redistribute income. Faced with the perspective of many firms closing
down, the government prohibited firms from dismissing their employees,
and simultaneously granted emergency loans to businesses in trouble. In-
creased strains were thereby placed on the budget and on the Bank of Por-
tugal, the ultimate source of such loans. Despite these measures, many
small firms declared bankrupcy, and in others, the owners fled the country
for fear of retaliation; when this happened, the government, rather than
see unemployment rise, took control of the firms in trouble (the so-called

"empresas intervencionadas"). Both through financial dependence and direct control, the government gained an unintended power of intervention in the economy, but was unable to exercise in a coherent manner.

The major transformations were still to come as a result of the re-evaluation of the role of the private sector in the future economic system. The military movement departed progressively away from its originally moderate views about the ownership of the basic means of production, to become concerned about alleged connections between big business and counter-revolutionary movements. It also became increasingly influenced by radical views that emphasized the political and economic advantages of a system of centralized planning. Amidst a very troubled political climate, the government finally acceded to the unions' and the military's requests and took control of the Portuguese banks and insurance companies. Because these were the financial centres of the existing private conglomerates, the government was in fact nationalizing, in an indirect, unplanned way, hundreds

of enterprises in which the banks had some degree of ownership or some outstanding loans. Many of these acquisitions were small, unprofitable firms, deeply in debt to the banks, which added to the government's financial responsabilities. But there were also some of the country's largest and most modern industrial firms. With the exception of foreign owned capital, all private capital in the electricity, steel, petroleum, major transportation, brewing, pulp and paper, tobacco, fertilizers, cement, shipbuilding and petrochemical industries, was nationalized.

As a result of this succession of events [112], dictated by immediate social and political pressures, the State emerged from the revolutionary period with a formidable weight in the economic system. The public sector, defined to include nationalized firms and those in which the State held 50 percent or more equity — produced a fourth of total value added and accounted for 46 percent of gross fixed capital formation. These figures match the size of the public sector in traditionally "State-interventionist" economies like France or Italy. However, direct ownership was only one of the many channels through which the government might control the allocation and use of resources.

The State participated as a minor shareholder or took control of operations in a large number of small and medium-sized enterprises. It maintained a strict price control over many sectors, or at least established rigid profit margins. It influenced wage policy, through the arbitration procedures under the Labour Office, the establishment of minimum

wage levels and the payment deals for an ever-increasing central and local administration. It controlled credit, not only through the central bank's policy, but also through nationalized banks. It disbursed subsidies to firms in difficulties, not always according to transparent criteria. It financed itself or other public firms by drawing on the reserves or the borrowing of profitable public firms. Besides, it maintained, or even reinforced, traditional instruments of industrial policy, although their allocative and promotional role lost importance due to the emergence of more direct means of intervention.

The economic system that emerged from the revolutionary period could not be identified with either capitalism or socialism, and in this sense it escapes the logic of any single political-ideological force. It was rather what a Portuguese economist called a "politicized market economy", i. e., "one in which the distributional role of prices becomes a justification for their manipulation, but in which the allocative role of prices is not replaced by a centralized allocation of quantities"[113]/

b) The balance of payments crisis

As a result of the government policies and the improvement in workers' bargaining power, nominal wages rose by 30 percent in 1974 in both industry and agriculture. In 1975 the movement slowed to 25 percent in agriculture and 20 percent in industry. Between 1973 and 1975, real wages increased 25 percent, which together with a stagnant productivity, was responsible for a marked shift in the functional distribution of income — from a labour's share in national income of 51 percent in 1973 to 66 percent in 1976. In addition, there was a redistribution of income within the labour force itself to the less well-paid, by means of changes in the tax system and the freezing of wages above a certain ceiling.

Real wages might not have increased so fast, if prices were allowed to follow the surge in costs. However, the governments deliberately chose to freeze prices (including rents), and to adopt a policy of controls, supplemented by subsidies on some essential consumption goods. Furthermore, import prices were kept down by the Bank of Portugal's support of the Escudo, which implied a growing resort to the sale of foreign currency and gold.

However, the international economic environment in which the Revolution took place was not propitious to an income-redistribution policy of such magnitude. A fourfold increase in the price of petroleum contributed

to a 15 percent deterioration in the external terms of trade between 1973
and 1975.   Since imports represented 33 percent of GDP in
1973, this meant a 5 percent reduction in the real purchasing power of
the national product. Simultaneously, the major trade partners of Portugal
knew an actual decline in their real incomes in 1975. To compensate for
higher import costs and the recession in export markets abroad, it would
be necessary that producers shifted from local markets to exports and con-
sumers from imported goods to domestic substitutes. Both developments might
arise as a result of a devaluation of the Escudo that more than compensated
the rise in unit labour costs. Exactly the opposite occurred, and the out-
come was a sharp fall in the market shares of Portuguese exports $\underline{114/}$.

According to the figures shown in Table I.7 , which illustrate the
evolution of the share of Portuguese exports in the markets of industrialized
countries, the average level of competitiveness would have fallen by 13
percent in 1974 and again by 24 percent in 1975, relative to the 1973 level.
As compared to the market positions of other Southern European countries
and of non-European industrializing countries, the Portuguese share fell by
18 percent between 1973 and 1975.

Table I.7

Evolution of Market shares of Portuguese exports

(1973 = 100)

	1974	1975	1976	1977	1978	1979	1980
Portugal a)	87	76	63	61	63	74	76
Relative to S. European b) countries' market shares	101	82	69	63	62	73	82
Relative to other indus-trializing countries' market shares	91	82	66	62	65	75	77

a) Index of the Portuguese share on industrialized countries' markets.

b) Greece, Rumania, Spain, Turkey and Yugoslavia.

Source: Report of the Bank of Portugal, 1980.

In the presence of increasing relative wages, a stagnant productivity and an unresponsive exchange rate, the ratio of Portugal's labour costs to those in the Rest of the World went up 40 percent between 1973 and 1975 (Report of the Bank of Portugal, 1980).

The joint outcome of the loss in competitiveness and the rise in import prices was a sharp deterioration of the trade deficit in 1974. The ratio of the trade deficit to GDP, that had been stable around 11 percent between 1970 and 1973, jumped to 18 percent in 1974, while the export-import ratio fell from 60 to 49 percent. In addition, private remittances fell by 67 million dollars in current values, between 1973 and 1975, due to skepticism among Portuguese workers abroad about the revolutionary events and the future course of the Escudo. The balance of services changed from a net surplus of 153 million dollars to a deficit of 167 million, mainly due to a sharp decline in travel receipts.

Portugal had entered the revolutionary period with one of the strongest reserve positions in the world. With its foreign exchange holdings of 2 billion dollars and a gold stock of 865 tons, Portugal seemed capable of financing a temporary crisis through its reserves, only with accidental resort to foreign borrowing. However, the negative change in reserves totalled 1,256 million dollars in the two first post-Revolution years. And, more importantly, it became apparent that the deep changes occurring after 1973/74 in both the international and the domestic scene transformed a structural surplus into a structural deficit of the Portuguese balance of payments. Consequently, a more permanent interest in the international capital markets developed among Portuguese authorities. In 1974 and 1975, use was made for the first time of the IMF non-negotiated facilities, like the gold tranche, the special oil and the "compensatory" financing facilities. Portugal also borrowed from private international banks, foreign central banks and the Bank for International Settlements, thereby raising external indebtedness to 1.6 billion dollars in 1975, i. e. 12.5 percent of GDP.

c) Exchange rate policies

Between April 1974 and the end of 1980, five different orientations were followed in respect of the exchange rate policy. Until the end of 1975, the Portuguese authorities supported the official parity of the Escudo by drawing from existing reserves. During the year 1976 and

until February 1977, the Escudo suffered a "veiled" depreciation, especial-
ly during the first six months of the period. Between February and August
1977, the policy was dictated by a single discrete devaluation of 15 per-
cent followed by support measures. After August 1977, under the influence
of the "stand-by" agreement that had been concluded with the IMF in May,
a crawling-peg for the Escudo was adopted, together with stabilization
measures in the fields of credit and fiscal policy. Finally, in February
1980 the Escudo was slightly revalued and the crawling-peg rate adjusted
downwards.

In a climate marked by huge imported inflation, the devaluation
of the Escudo would add to the rising impact on the level of domestic
prices. Given the large share of foodstuffs and oil in Portuguese imports,
the post-Revolution governments opted for protecting and even raising the
living conditions of consumers, by supporting a clearly overvalued currency
parity. As a consequence, foreign reserves dwindled and external borrowing
was required.

In 1975, as it became clear that the tendencies revealed in the
previous year would be aggravated, the authorities decided to resort to
import controls (to be examined in the following section) and a stricter
exchange control, instead of devaluation. Such controls were effective in
curbing imports, especially of non-essential consumer goods $\underline{115/}$, whereas
the deep investment slump in that year (a fall of 55 percent in gross
fixed capital formation) was responsable for a reduction in imports of
equipment and intermediate goods. However, exporters continued to face
a deterioration in competitiveness, provoked not only by increasing labour
costs, but also by an overvalued currency and rising input prices.

The government opted for reflation in 1976, essentially through
a policy of cheap credit and generous public expenditure. Having in mind
the balance of payments constraint on growth, it became clear that increas-
ing imports had to be partly financed by a recovery in exports. It became
necessary to let the Escudo depreciate slightly, and without emphasizing
the change in policy, in a process known as "veiled" devaluation, that
took place especially between January and July of 1976. However, the ex-
tent of this devaluation was too limited to reestablish external competi-
tiveness. By December 1976, the effective exchange rate, i.e. the exchange
rate of the Escudo against a basket of currencies representing the main
trade partners, had fallen only by 9.5 percent relative to December 1975.
Relative unit labour costs adjusted for exchange rate changes remained in

1976 forty percent higher than in 1973. Moreover, the "veiled devaluation, because it was accompanied by related measures of monetary and fiscal restraint, only added to speculative rumours that a deep devaluation was eminent, thereby increasing illegal capital outflows (mainly through over/underinvoicing) and speculative stockbuilding 116/ .

The results of this exchange policy orientation were disappointing as far as external payments were concerned. With a continuously overvalued exchange rate, the recovery of GDP (nearly 7 percent in 1976) was mainly directed to more and more protected domestic markets rather than to markets abroad. Imports rose by 18 percent in real terms, while exports increased by 5 percent only, which together with an adverse trend in the terms of trade, led to a massive trade deficit.

In the face of continuously falling foreign market shares, considerably depleted reserves, and mounting speculation 117/ , the government decided in February 1977 to devalue the Escudo by 15 percent and announced that it would support therefrom its effective exchange rate. This move contributed to a significant recovery in the relative unit labour costs,but devaluation was ineffectual to curb price inflation and halt speculative moves. The rise of the discount rate kept the real cost of borrowing at negative levels, which was reflected in the rising private demand for credit. Taxes and import controls were raised, but simultaneously the government increased the minimum wage level, and established a widespread policy of subsidization to essential consumer goods (the so-called policy of the "shopping basket"). Public expenditure was allowed to expand continuously, with its adverse effects on trade balance and the inflation rate.

The critical factor that influenced a new change in policy by mid-1977, was the increasing difficulties that the government was finding to finance the payments deficit. By the end of the first semester of 1977 foreign exchange reserves were nearly exhausted and approximately 50 percent of the gold stock had already been pledged against loans.

It was necessary to boost confidence among the international banking community as to the prospects of the Portuguese economy, in order to raise a massive support of the balance of payments in terms of medium-term financing. This objective was achieved by means of negotiating a "stand-by" agreement with the IMF, whose performance criterion was set at bringing the payments deficit down to US $ 800 million 118/ .

The attainment of this objective was to be secured through a

policy package, in which exchange rate policy played an important role. A crawling peg for the Escudo was introduced in August 1977 with an average monthly depreciation rate of 1 percent, relative to a basket of currencies. In May 1978, this policy was strengthened with a discrete devaluation of 6.1 percent followed by an increase of the crawling peg rate to 1.25 percent. This policy envisaged not only to reestablish a balance between profitability in sales on foreign and domestic markets, but also to reduce the uncertainty as to the exchange rate fluctuations and the incentives to speculation.

Other elements of the policy package included a sharp rise in interest rates, the application of credit ceilings, the progressive elimination of the import surcharge and the setting of a limit to the recourse to bank finance by the public sector.

The adoption of these policy measures led to a rapid recovery of the Portuguese balance of payments. The external deficit on current account (equivalent to 9 percent of GDP in 1977) was totally eliminated by 1979. More than two thirds of the improvement in the current account was contributed by the balance of services, despite a substantial rise in interest payments , mainly because of the sudden repatriation of the savings that Portuguese workers had accumulated abroad during the past 4 years. But the impact of the stabilization measures upon the trade deficit was also very significant . The devaluation policy helped to bring relative unit labour costs below their 1973 level, by more than 20 percent. Simultaneously, the halt to emigration and the inflow of returnees from the former colonies swelled the number of unemployed and exerted a downward pressure on wages, relative to their legal limits. Real wages dropped 17 percent between 1976 and 1979, which made the labour share in national income fall to 55 percent (i.e. very close to the ratio it had attained just before the Revolution) 119/.

In response to gains in competitiveness, the declining tendency of the market shares was reversed, although the Portuguese share in industrialized countries' markets remained 26 percent below the 1973 level. (Table I.16). Exports increased very fast, at annual rates of 12.0 and 28.6 percent in 1978 and 1979, respectively. Due to the rise in interest rates and less uncertainty as to the evolution of the exchange rate, stimulus to stockbuilding was drastically reduced. The consequent drop in real imports of intermediate and equipment goods was the main contributing factor for the moderate evolution of imports during the two-year period.

After two successive reductions of the crawling peg during 1979,
it was decided to abandon the restrictionist policy subject to the IMF
performance criteria (most of wich were kept unfulfilled), and to adhere to
reflationary policies during the year 1980.

The ratio of the government budget deficit to GDP, that had not
been significantly affected by the "austerity" package, was increased from
9.8 to 10.9 percent in 1980, whereas the growth of credit to firms and
individuals (including public enterprises) accelerated from 21 to 26 per-
cent, with money supply increasing by 35 percent. [120/]. The Escudo was
revalued by 6 percent in February 1980, but the crawling peg was maintained
just to cover the inflation rate differential, at a monthly rate of 0.5
percent.   At the same time, with the rise in domestic prices being
kept down by price control, real wages rose by 6 percent, on the average.

The policy measures that were adopted in the fiscal and monetary
fields added to the effects of revaluation to produce a sizeable surge in
imports, that grew 9 percent in real terms. However, the export performance
in that year could not match the import growth — exports grew 7.1 per-
cent in real terms, much below the rates achieved in the previous years —
and the outcome was again a trade deficit of 4.7 million dollars (i.e.
approximately 20 percent of GDP).

It has been questioned to what extent were the new policy measures
appropriate to deal with the unfavourable economic climate that prevailed
internationally after the 1979 oil shock. [121/] The rise in real wages was not
compensated by an identical change in productivity   as
rigid labour laws prevented dismissals even as a consequence of technological
improvements. As a consequence, the relative unit labour costs slightly
increased   in 1980, which, in addition to a practically stagnant
external demand and to increased forms of protectionism against some of
the most important Portuguese export products ("voluntary" export restraints
on textiles) provoked the beginning of a new cycle of external payments
crisis. This second post-1974 cycle was due to reach a peak in
1982 with a stand-by agreement established with the IMF, implying the
adoption of a stabilization package including more severe restrictions
on credit and public expenditures, and a faster crawling-peg for the Escudo.

3.4. The import policy

a) Towards a liberal import policy - from 1970 to 1975

As Table B.3 shows, average tariff rates declined consider-
ably between 1970 and 1974, both in nominal and effective terms. The
average nominal rate fell from 16.9 to 6.0, and the effective rate from
42.6 to 11.1 percent, for the whole group of manufacturing industries.
Across industries, the same evolution occurred, with very few exceptions.
Also a substantial reduction in the dispersion of effective protection
rates occurred during the period, as revealed by the fall in the ratio
of standard deviation to mean.

This decline in tariff rates was caused by two factors.
Firstly, as the majority of Portuguese duties were specific, the sharp
rise in import prices (estimated in a 53 % increase between 1970 and 1974
[22/]) resulted in a reduction of the protective rate. Secondly, several
tariff cuts were carried out in accordance with the commitments vis-à-vis
the EEC and EFTA [123/].

In order not to reduce effective protection too sharply, the fall
in duties on final products was accompanied by the adoption of measures
aiming at cheaper imported equipment and material inputs. Almost all raw
materials were made duty-free in 1972. And the legislation of the "New In-
dustrial Policy" liberalized the access to duty exemptions on imports of
equipment goods [124/].

Other instruments of commercial policy, namely quantitative restric-
tions (QRs) and exchange controls   continued to have a moderate use
in Portugal. The "bulletin" for import registration was used for restric-
tive purposes only in a few specified cases, namely for goods originating
in non-GATT members   and for those that were included in the so-called
"negative" list. The latter type of goods (mainly foodstuffs, but also
textile fibres, steel tubes and motor vehicles) that represented less than
one third of Portuguese imports, could be imported under a quota (bilateral
or global) or under individual authorization.

Among the goods on the "negative list", motor vehicles were of
special importance. Since 1961, a specific protection policy had been
adopted in this sector, with a two-fold purpose: to reduce the increasing
pressure of imports of a particularly income-elastic good upon the trade

balance; and to stimulate the incorporation of domestic labour. The policy
was based on the "content -protection" scheme (H. Johnson, 1971). No more
than 75 CBU units could be imported annually from each producer, the
remainder having to be assembled in local plants, where the share of
domestic value-added should not be lower than 15 percent. As an incentive
to a greater use of domestic labour, there would be a reduction in duties
on inputs in direct proportion to the share of value added.

With the aim to make the use of large-scale assembly chains more
attractive, a new policy was introduced in 1972, according to which any
firm might import CBU units up to 2 percent of the number of cars that it
had assembled locally. As the cost of the imported car was lower than that
of the local substitute, a rent arose that would be earned by the firm in
proportion to the scale of assembling. Moreover, duty-free importation of
CKD units was allowed, if a minimal rate of absorption of domestic inputs
were achieved $\underline{125/}$.

This protective policy was part of a readjustment program for
the sector, that should be completed by the end of the decade. However,
having regard to its disappointing results, protection of the car industry
was reinforced and extended into the 1980s.

However unintended it might in part have been, the relative liber-
alization of imports was expected to play an essential role in the economic
strategy embodied into the New Industrial Policy. "Picking-up the winners"
seemed a rewarding task against the favourable background of the early 1970s,
marked by world demand expansion, strong reserve positions and no major
domestic disequilibria.

The twin shocks of the world recession and the April Revolution
destroyed the foundations of that economic strategy, and hence the condi-
tions for further import liberalisation. External outlets for productions
that held actual comparative advantages and for those that promised poten-
tial advantages were squeezed by the joint action of increased competitive-
ness from other n.i.c.s and of greater resort to protectionism in the im-
porting markets. Political instability delayed or prevented the timely
amendment of investment decisions that had been taken in a different con-
text of cheap oil and booming world demand. As a consequence, not only
it became more difficult to find alternative use to the resources to be
eventually released by the declining import-competing branches, but also
it became necessary to provide tariff and non-tariff protection to some
of the would-be "winners" (as in the case of synthetic fibres, petroche-
micals and shipyards).

Nevertheless, the import liberalisation policy was brought to a halt after the events of 1973/74, mainly as a direct result of the rapidly deteriorating position of the trade balance. In the early post-revolutionary years, the foreign payments crisis was invoked as the sole justification for the introduction of new types of import barriers, of non-tariff nature. It was only after 1979, when the current account balance was achieved, that it became clear that more fundamental, long-term reasons provided the background for the continuation of non-tariff protection, in defiance of international commitments that the Portuguese government had undertaken long ago.

b) The import policy reversal

The origins of the reversal in the import policy can be traced back to May 1974, when a Committee to supervise foreign trade was set up. It had power to authorize any import or export transaction exceeding a certain level. It could also suspend imports of luxury goods or exports of certain goods considered essential for the orderly supply to the domestic market. However, these measures did not reflect any isolationist attitude with the new power, and were justified instead for short-term, precautionary reasons[126/] Later in July, prohibitions were replaced by a system of surveillance and the trade ceilings for authorization considerably raised.

The decisive element in the development of a new import policy was the introduction of an import surcharge in May 1975. Originally with a temporary character, it covered two wide groups of commodities, with rates of 20 and 30 percent, irrespective of origin. Imports of petroleum, most foodstuffs and raw materials were exempted, as well as a large number of manufactured goods that benefited of duty exemptions (especially intermediate and equipment goods).

In March 1976, new lists of commodities subject to the import surcharge were published, that took into account the large number of exempted products by withdrawing them. In October 1976, as the external payments crisis bacame more severe, a new package of import controls was announced[127/] The surcharge rate was raised to 30 percent, while a new group of "luxuries" was created , to which a 60 percent rate would apply. With minor changes, these lists and rates persisted for a period of two years.

The imposition of the surcharge had been justified on the grounds of balance of payments difficulties, as a temporary measure to support a general redressing of equilibrium. As such it had been accepted by GATT, the EEC and EFTA , but as the stabilization program agreed in 1977 with

the IMF aimed at   current account equilibrium, the progressive relaxation of import restrictions was made a performance criterion of the agreement. Consequently, the   surcharge rate was decreased to 10 percent in two successive cuts, that took place in September 1978 and March 1979.

The October 1976 package contained other types of import restrictions. An import deposit requirement equivalent to 50 percent of the c.i.f. value of imports was imposed on non-essential commodities (representing approximately 7.5 percent of total imports in 1976). As the going rate for bank loans was 9.25 percent a year, and the advance deposit period was set at six months, this restriction was equivalent to adding 2.3 percent to the cost of importing. Moreover, this restriction was intended to ration foreign means of payment, as the concession of the import bulletin was conditioned by the advance deposit.

Global quotas were established in February 1977 for certain non-essential consumer goods — especially electrical household appliances — representing approximately 4.3 percent of Portuguese imports in 1976. However, as the share of these goods varied according to the composition of imports from each partner, some bilateral flows were especially affected. Imports from Italy, Spain and Japan became subject to quotas on shares of 18, 10.6 and 6.6 percent, respectively 128/ .

Also in February 1977, annual quotas for imports of CKD vehicles were introduced in value terms and for each make separately. This import restriction was completely new, as the importation of CKD units, contrary to CBU, had been always free of QRs in the context of the existing regime of protection to the automobile sector. Originally justified in terms of balance of payments difficulties, these quotas became later an integrating element of a new protectionist scheme for that sector.

Other types of action, of a less transparent character, were adopted by Portuguese authorities in order to curb the value of imports, either globally or in specific sectors. The access to domestic bank credit for import transactions was made increasingly tighter and more selective. By means of an internal regulation issued by the Bank of Portugal, with effects as from 1.1.77, imports were divided into three categories. Specified essential goods would be eligible for domestic credit up to 100% of the import value for a maximum period of 180 days, whereas the importation of goods classified as non-essential could not be financed either with domestic or foreign credit. For a third category of goods, mostly equipment, importers were required to seek foreign finance for a certain proportion of the total cost in order to qualify for domestic credit.

But still the most often cited instrument of import control in recent years has been the discretionary management of licenses, through the issueing of "bulletins" for import registration. Frequent complaints by business refer straight denials by the Customs Administration to issue such bulletins (allegedly used for statistical purposes only) for imports of QR-free commodities, and unjustified delays. It has been current practice to ask the largest importers for a detailed plan of import trans-actions in the beginning of the year; and imports not falling within the approved plan will normally see the authorization denied.

Unfortunately, these criticisms have not been supplemented by adequate estimates of the excess costs and restrictive effects of the licensing system. The Administration has supported its maintenance, on the grounds that it represents a convenient instrument of short-term intervention. Firstly, licensing provides the Administration an easy and rapid way to reduce the overall flow of imports in critical periods of exchange shortage. Secondly, it allows for a specific and discretionary protection to individual industries and firms that would normally face difficulties with free competition.

· However, these considerations cannot provide a basis for long-term policy making. When extended over a too long period (as it has been the case in Portugal) the licensing regime is associated to a number of distortions and extra-costs borne by the domestic economy as a whole [129]/ Firstly, the administration of import licensing introduces arbitrariness in decision-making, since one can hardly devise general rules applicable to each case. Corruption and "exchange of favours" find it easy to flourish under such schemes. Secondly, the system generates uncertainty for the quota recipients, which increase correspondingly their operating costs. Furthermore, they expend considerable effort on making applications for licenses, which, though profitable for the individual firm, entails a cost to the economy. Finally, since licenses have a scarcity value, their recipients will get the difference between the domestic price and the import price plus the tariff. Such an extra-profit is an incentive to bribery and creates vested interests, both within the private sector and the Administration, that will support the perpetuation of the system.

Another less transparent form of import restriction has been the use of State subsidies to industry. As far as such subsidies allow firms to practice competitive prices relative to foreign goods, they distort competition and represent a selective instrument of import control. Not

much empirical work has been done in Portugal on this issue, either, and only a qualitative picture may be obtained, which will be examined in Section 3.6.

The coverage and bilateral trade impact of the import surcharge can be examined with the help of the information collected in Table I.8 . In year 1976, 29.2 percent of total Portuguese imports were in principle subject to the payment of a surcharge whose rate varied between 20 and 30 percent, and a small share amounting to 2 percent of imports were covered by a special rate of 60 percent for "luxuries". The surcharge had a very unequal impact upon trade with the different supplying areas. The USA, a traditional supplier of food products and raw materials to Portugal, was the least affected trade partner. On the other hand, the EEC and EFTA countries were among the most heavily affected.

Table I.8

Product coverage of the import surcharge - 1976

	20-30% rate	60% rate
World	29.2	2.0
EEC	44.1	3.0
Germany	43.9	2.7
France	52.1	2.2
Italy	51.8	5.0
U.K.	44.0	3.8
EFTA	52.1	1.4
Sweden	63.3	1.0
Switzerl.	42.1	1.8
Spain	45.8	3.4
U.S.A.	7.1	0.6
Japan	39.3	3.1

Source: C. R. Fernandes and P. Alvares (1980, Annex XVI).

A direct way to measure the average incidence of the surcharge on the import price, while taking the numerous exemptions into account, consists in dividing its final revenue by the value of the imports that should in principle be subject to it. Table I.9 presents the rates of average incidence during the period 1975/80. It was higher in the years of more severe exchange crisis, i.e. between 1976 and 1978, with a peak of 13.6 percent in 1977. Throughout the period, the surcharge was a more effective instrument of import control than customs duties, in terms of the excess average margin it

Table I. 9

Actual average incidence of the import surcharge

Year	Collected revenue		Imports c.i.f.		Average incidence	
	Duties	Surcharge	Total	Subject to s/c	Duties	Surcharge
1975	3,946	1,635	97,590	31,912	4.0	5.1
1976	4,243	4,673	127,820	39,880	3.3	11.7
1977	5,625	7,172	190,680	52,628	3.0	13.6
1978	5,363	6,288	230,130	61,675	2.3	10.2
1979	5,820	4,731	320,080	86,422	1.8	5.5
1980	7,094	5,013	465,840	125,777	1.5	4.0

Source: Estatísticas das Contribuições e Impostos, INE, Lisbon.
Estatísticas do Comércio Externo, INE, Lisbon.
C.R. Fernandes and P.Alvares, op.cit.

imposes on the c.i.f. price of imports. In fiscal terms, the surcharge
was responsible for nearly one half of total customs revenue collected
during the period 1975/80.

By taking the annual incidence rate as a weighted average of
surcharge rates, where weights are provided by the shares of surcharge-
levied commodities in each category (lower rate, higher rate, and
exemptions) it is possible to arrive at an estimate of the share of
exemptions in total surcharge-levied imports:

Year	1976	1977	1978	1979	1980
Share of exemptions	56.1	56.5	64.2	62.6	65.2

These estimates confirm the highly discretionary type of import
control measure that the surcharge is, and the growing weight of exemptions
as importers increased their pressure on the Administration to be freed
from its payment.

At a disaggregated level, the average surcharge rates had to be
calculated on the basis of official rates, instead of collected revenue.
Unweighted simple averages were calculated for the years 1978 and 1980,
for a breakdown of manufactured goods disaggregated at the 2-digit level
of the SITC/Rev.2. According to the figures presented in Table B.4 , the
average surcharge rate was 17.8 percent in 1978 and 8.5 percent in 1980.

The simple correlation coefficient between m.f.n. and surcharge rates for 1978 was calculated at 67 percent, which indicates a strong similarity of criteria in the distribution of the surcharge relative to the Tariff. The import surcharge played therefore a complementary rather than a corrective role relative to the normal duties. This role was especially important in what concerns imports originating in the EEC and EFTA countries, due to the advanced stage of the tariff dismantling process.

c) Tariff changes

Having enjoyed a prominent role since the early fifties, the Tariff lost much of its importance as policy instrument after the introduction of the non-tariff controls in 1975. In fiscal terms, its overall contribution to tax receipts fell from 8 percent in 1973 to 2 percent in 1980. Its protective role was maintained only in regard to commodities originating in countries subject to the m.f.n. clause and even so, greatly diminished by tariff erosion caused by import price increases.

Two important changes took place during the period until 1980. In October 1976, most specific duties on manufactured goods were raised 100 percent in order to compensate for tariff erosion. This reform raised the value of collected duties but failed to halt the falling tendency of nominal protection afforded by the Tariff (see Table I. 9). From 1977 onwards, the devaluation of the Escudo added to the effect of import price inflation and aggravated the erosion of specific duties.

In June 1980, the duties on manufactured products were transformed into "ad valorem" with a two-fold purpose. To halt tariff erosion, and to initiate the adjustment towards the EEC's Common External Tariff.

By comparing the average tariff rates before and after the 1980 reform, in Table B.4 , we conclude that apparently there are no substantial differences between the two. The total average increased slightly from 19.3 to 19.9 percent, whereas the simple correlation coefficient is 80.2 percent, which reveals no change in tariff policy criteria.

By working at a finer level of disaggregation and focusing on the distribution of duties, rather than on their average, it is possible to find interesting features of the evolution suffered by the Tariff between 1970 and 1980. Table I.10 summarizes the relevant statistics about the frequency distribution of average tariff rates for nearly 750 products disaggregated at the four-digit level of the BTN. Three years were considered: 1970, 1978 and 1980 (2nd semester) and still the 1980 CET.

Table I.10

Frequency distribution of tariff rates (4-digit BTN)

| | PORTUGAL | | | EEC |
	1970	1978	1980	1980
Median	14.7	9.7	15.6	8.1
3rd Quartile	31.5	19.6	26.3	11.0
Duties higher than 50%	13.3	6.8	2.9	0.0

Source: The same as Table B.4

These statistical results confirm the declining nominal protection between 1970 and 1978, as afforded by the Tariff. Whereas 75 percent of the manufactured goods considered had duties lower than 31.5 in 1970, the same share did not go beyond 19.6 in 1978. In this connection the 1980 reform represented a reverse movement towards the protectionist duties of 1970: the median increased to 15.6 and the 3rd quartile to 26.3. Therefore, the 1980 reform served to reestablish the protective role of duties that had become too low, due to tariff erosion. We may also observe that the share of commodities protected by very high duties (i.e. above 50%) was signifi- cantly reduced by the 1980 reform. At this level of protection, the reform may be said to have brought the Portuguese Tariff closer to that of the EEC. For the large majority of products (charged with duties lower than 20 per- cent) however, the reform appears to have produced a general rise in nominal protection, therefore shifting them away from the EEC pattern.

The distributions of absolute frequencies of tariff rates according to the 1970, 1978 and 1980 Portuguese Tariffs and the CET are graphed in Annex A for manufactured products as a whole and for each of eight sectors: "chemicals", "wood, cork and paper", "textiles, clothing and footwear", "non-metallic minerals", "base metals", "metallic products", "machinery and transport equipment", and "miscellaneous manufactures".

From Graph no.1, a generalized fall in duties between 1970 and 1978 is visible: the polygon corresponding to 1970 is placed above the one corresponding to 1978 along nearly the whole scale, except in the interval from 0 to 5%. It is also clear that the 1980 reform operated a relative concentration of high duties into the 35-40% interval; at the same time, the number of low duties, i.e. below 10%, becomes significantly reduced relative to the 1978 schedule and the frequencies comprised between 10 and 25% are correspondingly increased. The 1980 reform

represented a clear move towards a greater degree of uniformization, and in this sense it may be said to come closer to the pattern represented by the EEC tariff distribution. However, present Portuguese duties still show relatively high levels of protection — a large number is concentrated in two or three intervals that exceed the maximum levels allowed in the EEC.

This evolution of the general distribution pattern is reflected in the majority of the eight sectors considered. One important exception is the chemical sector, where the 1970 distribution approaches that of the EEC much closer than any other. Contrary to other sectors, the adoption of the CET duties in the chemical sector will involve an increase in nominal protection for the majority of items. In base metals and in machinery and transport, the general profile and average level of duties achieved in 1980 seem to be reasonably close to the CET. In all other sectors, however, substantial transformations are to be suffered as a result of accession to the EEC.

d) The evolution of the preferential agreements

The "evolutionary" clause included into the 1972 Free Trade Agreement offered a basis for Portuguese authorities to request extra concessions and aid from the EEC, once the political factors that inhibited a broader relationship had been removed by the April Revolution and the consequent establishment of a representative democracy. Following the public statement by the Commission, in May 1975, that the support to Portuguese democracy should be "expressed in a spectacular manner", negotiations started that gave origin to a formal revision of the Free Trade Agreement.

The commercial part of the Additional protocol was applied from November 1976 onwards [130/] and introduced three basic changes into the tariff regimes that ruled Portuguese imports from the EEC, after the 1972 Free Trade Agreement.

In the first place, it transferred a number of products from the faster tariff-cutting schedule for sensitive products (list A) to the slower one (list B) after 1977. Consequently, such products would see duties abolished vis-à-vis the EEC in 1985, instead of 1980.

Secondly, the revision created a new category of sensitive products, that would benefit of a possible rise in duties up to a ceiling of 20 percent, conditional on their withdrawal from the import surcharge lists. The new duties would be dismantled in successive steps of 10 and 30 percent cuts, until total abolition in 1985. This new category was composed of products that were originally subject to the general regime

and to the lists A and B of tariff-cutting [131].

Finally, the infant-industry provision was made more liberal, thanks to the elimination of the condition that imports subject to it should not exceed 10 percent of total imports. However, 1979 continued as a final year for the introduction of this type of duties.

Following Portugal's application for membership in March 1977, and on the grounds of a necessary readjustment of the domestic industrial structure in order to face the challenge of full membership, a second revision of the Free Trade Agreement was requested in 1979. The resulting Complementary Protocol (signed in November 1979) introduced two main changes relative to the import regimes that had been defined previously:

Firstly, it "froze" the tariff-cutting process, as reached by 31.12.79, for a period of three years in:
- all those products included under the B list of 1972;
- some products included under the A list of 1972;
- almost all products that benefited of increased duties under the 1976 Protocol. [132]

Secondly, the period during which Portugal could introduce infant-industry duties was extended for three years, i.e. until December 1982.

While pursuing different objectives, both revisions of the Free Trade Agreement worked in the same direction, i.e., to delay for as long as possible the full impact of free trade in industrial goods. The Portuguese economy remained largely unprepared for it, as no positive adjustment policies had been implemented or even prepared to that purpose, until 1980.

However, it is doubtful whether these revisions played the major role in avoiding the full exposure of Portuguese import-competing sectors to the rigours of foreign competition. As can be seen in Table I.11, after the tariff cuts that were implemented on 1.1.80,   70 percent of Portuguese imports from the EEC,   and covered by the Agreement, payed no duties (import regimes 1 and 2). And 12.4 percent payed a very small amount (import regimes 3,4 and 5). Not only the tariff cuts had already gone very deep (60-80 percent), but also the 1972 base rate had been subject to strong tariff erosion, due to the specific type of duties.

It was rather the import surcharge (that covered approximately 45 percent of Portuguese imports from the EEC) and the non-tariff barriers introduced after 1975 that played a major protective role against competing goods of EEC origin.

The Additional Protocol introduced a new category of sensitive goods for wich new duties could be raised: those produced by the so-called "senile industries" [133]. Their relative importance was   still

Table L.11

Import regimes vis-à-vis the EEC, on 1.1.80

(import values as in 1977)

	Value (billion Esc.)	% Share	% Reduction in duties
1. Fully liberalized products	39.6	50.0	100
2. Sensitive products of A list, duties not frozen	16.1	20.4	100
3. Sensitive products of A list, duties frozen until 31.12.82	0.9	1.1	80
4. Sensitive products of A list, duties frozen by the Additional Protocol, until 31.12.82	4.2	5.3	70
5. Sensitive products of B list, duties frozen until 31.12.82	4.8	6.0	60
6. Products of senile industries, most duties frozen until 31.12.82 (of which, with duties actually introduced)	3.7 (3.5)	4.7 (4.4)	10 a)
7. Products with fiscal duties, frozen until 31.12.82	2.9	3.7	0 b)
8. Vehicles, subject to quotas	7.0	8.8	-
Total imports from the EEC, subject to F.T.A.	79.1	100.0	

a) 10 percent of the new "ad valorem" duty.

b) Refers to the fiscal element in the duty, only.

Sources: C.R. Fernandes and P. Álvares (1980).
For items 3,6 and 8, own calculations, according to the "Estatísticas do Comércio Externo", INE, 1977.

weak by 1980: less than 5 percent of imports. However, they deserve a closer attention, as the duty-raising formula may well constitute, from the Portuguese authorities' viewpoint, a credible alternative for the present existence of the import surcharge. It is not possible to find any economic justification in terms of "age" for this special concession, given the particular composition of its product list. By "senile industries", one usually means those industries that are loosing comparative advantages, and   require temporary protection in order to avoid major market disturbances and facilitate their necessary readjustment. As a matter of

fact, very few if any of the industries covered by import regime 6 in Table I..11 did ever enjoy an internationally competitive position, and some do not even belong to the older generation (i.e. pre-1960) of industries — such is the case of plastics, synthetic fibres, engines, cranes, refrigerators and machinetools.

Either for deficient appraisal of the initial project or for unexpected changes in the international environment, these now called "senile" industries could not expand sales beyond the (protected) domestic market, and consequently could not exploit scale economies to the fullest. Temporary extension, or even increase of the tariff protection currently afforded is justified if other policy measures, such as investment subsidies and recycling of the manpower, are adopted in simultaneity. As far as the working of the Free Trade Agreement is concerned, it seems that Portuguese authorities are encouraging the reorganization of potentially affected firms   rather than setting up production units in entirely new product varieties. Since 1973 no duty has been raised for infant-industry protection, and only in January 1979 the Portuguese authorities notified the EEC Commission that this facility would be used in the near future with respect to eight new industries[134]. However, other type of evidence, namely on the use of investment subsidies by disaggregated industries, is needed to substantiate this impression.

The car industry is an illusrative case of the difficulties that surround the reorganization of internationally uncompetitive industries.

According to the Decree-Law no. 157/72 and the 1972 Free Trade Agreement (Protocol no. 6), the special protective scheme for the Portuguese car industry should be abandoned by 1980. However, as this deadline approached, it became more and more evident that the existing assembly lines and the firms producing parts and pieces   were unable to withstand price competition within a free trade context. Short length of runs and overmanning were responsible for excessive production costs. A reorganization programme for the car industry was launched by Decree-Law no. 351/79 for the six-year period running from 1.1.80 to 31.12.85: uneconomic assembly lines and input producing units should close down, or possibly be transformed for use in other sectors (household equipment, e.g.) whereas adequate incentives should be granted to the setting up of modern large-scale plants incorporating the latest technological improvements and able to meet foreign competition in a near   future. This definition of objectives does not present any innovating

aspect relative to the 1972 reorganization. However, the mechanisms envisaged to implement them were innovative in two respects: In the first place, the quotas for CKD cars weighting less than 2,000 Kg were considered as a permanent feature of the scheme during the six-year period. Correspondently, the value added requirements for imports of CKD cars could be lowered progressively until complete elimination in 1985. Secondly, a group of criteria involving exports and local investment were explicitly considered for the permission to import extra-units of CKD cars beyond the normal quotas. This mechanisms sought to attract new investment into the car industry, in such conditions as to direct a substantial share of output to foreign markets, from the very start.

After 1973, Portugal maintained preferential relations with two trade blocs simultaneously — EFTA and EEC. The fact that their exports were largely coincident raised several problems of compatibility between the respective import regimes. In 1970, an additional agreement had been reached with EFTA that envisaged 1980 as the deadline for full tariff liberalization in respect of Annex G products. As the sensitive products included in the B list of the 1972 Free Trade Agreement with the EEC enjoyed a tariff-cutting schedule that would end only in 1985, it became necessary that EFTA accepted an identical extension for such products, and also for those of the A list that were transferred to the slower schedule by the Additional Protocol. Identically, the possibility of raising new duties, in replacement for the surcharge, in respect of "ageing" industries, had to be contemplated by EFTA. Consequently, two addenda were included into Annex G (paragraphs 6bis and 6ter, respectively), allowing for a slower tariff-cutting rate and new duties. With minor exceptions, the import regimes vis-à-vis EFTA and the EEC are identical in terms of coverage and duties. Consequently, the percentage distribution of imports by EFTA regimes is very similar to that in Table I.11$\frac{135/}{}$, and the average tariff rates presented in Table B.4 for the EEC can also be taken as those applying to EFTA products.

e) Effective protection rates

Table B.5 shows the nominal and effective rates of protection that were estimated for year 1977 with inclusion of the import surcharge. The effective rates were obtained with domestic input coefficients taken from the input-output table of 1977 and the non-traded inputs were treated according to the Balassa method.

According to the figures shown, nominal and effective protection reached unrecorded levels in 1977. The average effective rate, that was obtained with the use of world value added as weights, indicates that the domestic value added under protection exceeded that obtainable under free trade by a margin of 55 percent.

However, it is not possible to consider this rate as a rigorous measure of the actual discrimination afforded to domestic production vis-à-vis imports. Besides the fact that the calculations of nominal protection are based on "official" instead of "collected" tariffs and surcharges (i.e. excluding the exempted imports), the effective rates shown in Table B.5 do not take into account the equivalent effects of quotas and the licensing system. In order to measure these one would have to compare domestic and international prices of similar commodities. The percentage difference is known as the "implicit" nominal rate of protection and will exceed the nominal tariff rate if the non-tariff barrier is operating effectively. "Implicit" effective rates of protection are then obtained from the correspondent nominal rates for the inputs and outputs.

On the other hand, there are reasons to believe that, despite the policy of exchange rate devaluation that was adopted in 1977, the Escudo remained largely overvalued relative to its free trade hypothetical level. A black market had been in continuous operation since 1974, and speculative moves persisted, although at a slower pace, after the crawling peg was adopted. It is obvious that an overvalued currency reduces the extent of the protection that is afforded to domestic producers. We followed the procedure described above in Chapter 2 and arrived at a rate of exchange overvaluation of 15 percent. Again, in this estimation we could not use variables other than the average tariff rate plus surcharge to indicate the level of nominal protection.

However, the theoretical validity of estimating an equilibrium exchange rate (in the sense of a rate that would clear the market under free trade) in a situation characterized by several exchange controls, has come under increasing criticism (A. Krueger, 1983a, p. 182). Among others, there is the question of how a market-determined exchange rate alters with the imposition (or removal) of tariffs at a given point of time. Whereas the elasticity approach leads us to believe that the exchange rate will appreciate with the imposition of a tariff (and vice-versa) a monetary approach yields the opposite conclusion, because the tariff raises the domestic price level and so alters the demand for nominal balances.

Consequently, we are left in a considerable margin of doubt as to whether "real" effective protection increased or not between 1970 and 1974.

The ranking of industrial sectors according to their effective rates of protection is not affected by the choice of the equilibrium exchange rate. As in Chapter 2, the 31 industries were ranked according to the relative difference between effective and nominal rates, i. e. the "escalation" effect.

Comparing Figures B.1 and B.2, one draws the conclusion that, although the overall tariff structure continues to show evidence of a strong escalation of rates, the relative position of the industries have suffered a considerable transformation. The Spearman rank correlation coefficient between the rankings of 1970 and 1977 was estimated at 0.266 which is not statistically different from zero at the 5 percent level of significance. There was a pronounced rise in the ranking of some input-producing sectors, like glass, non-ferrous metals, base chemicals, concrete and wood. Very few consumer-good industries have improved their position between 1970 and 1977, the most relevant exceptions being furniture and miscellaneous manufactures. On the other hand, the group of sectors that show reduced tariff protection is heterogenous, and the sectors where that reduction was more apparent were non-edible oils, transport equipment, rubber articles, miscellaneous chemicals and iron and steel products.

When interpreting the 1970 escalation ranking, it was possible to explain its main features on the basis of well determined principles of industrial policy orientation. The same interpretation does not seem to be possible in what concerns the 1977 ranking presented in Figure B.2. Input-producing industries occupy the majority of the top places in that ranking, whereas only 3 consumer-good industries reach an "escalation" effect higher than 100 percent. This contradictory pattern is partly related to the two-fold objective of the import surcharge policy [136]. While it served protectionist purposes, it was also used as a trade-deficit curbing instrument. Therefore, its impact may have disregarded the relative position of industrial sectors in terms of forward-backward linkages

Table I.12 - Effective rates of protection by industry groups - 1977

Export industries	58.8
Import-competing industries	40.4
Other industries	62.2
- Intra-industry	42.4
- Prohibitive protection	91.1
Total average	55.0

The interesting conclusion to draw from the figures shown in Table 1.12 is that export industries are more heavily protected than import-competing ones in terms of effective rates. If observed in more detail, however, this conclusion is not so surprising as it seems. In the first place, the average effective rate for export industries is not representative of the whole, as dispersion is very wide. In Table B.5 we may clearly distinguish two sub-groups: one includes industries like cork, paper paste and pulp, non-edible-oils and footwear (not included in the average), which have negative or very low effective rates; the other sub-group consists of the textile and clothing industries, to which we may add the wood industry, all with rates above 60 percent. Relative to 1970, it was this second sub-group that saw its effective protection rise considerably. This may be the result of policy action designed to compensate domestic producers for their losses on foreign markets due to excessive production costs in the period 1974/76. In the second place, the fall in the average effective rate for import-competing industries relative to 1970 (from 46.8 to 40.4 percent) was heavily influenced by the sharp fall of this rate in two sectors - transport equipment and iron and steel. There is evidence of quantitative restrictions replacing tariffs in both: in the car industry, protection by quotas was extended to CKD units, while in steel production, that is concentrated in a single, State-owned firm, administrative protection has been continuously afforded by means of licensing. Consequently, the average effective rate for import-competing industries is undervalued when only the effect of tariffs and the surcharge is taken into account, in a period marked by the emergence of quantitative restrictions.

3.5. The export policy

During the period of import-substituting industrialization, the policies of export promotion remained quite incipient. Increased imports of intermediate and equipment goods could be financed without major balance of payments difficulties, whereas foreign tariff preferences acted as a replacement for domestic subsidization of exports. The new orientation given to economic policy after 1968/69 emphasized the need for a more active support of export-oriented activities. The systems of export credit and of export insurance were revised in 1969 with the aim to increase their efficiency and enlarge the scope of benefits. The preferential rediscount rate for export operations was maintained at 2 percent while the normal rate was raised to 3.5 percent in 1970.

The most innovative element in the new policy was however the introduction of a higher degree of selectivity in the subsidisation of industrial activities. The New Industrial Policy defined priority sectors in terms of potential comparative advantages, and these were to receive preferential subsidies through grants, tax exemptions, credit facilities, etc. While the rate of subsidy was not linked to the firms' actual export performance, and consequently could not be said to constitute a direct export subsidy, this orientation favoured a more outwardly looking growth path for the economy as a whole. New resources tended to be used in non-traditional industries with good export prospects in the medium or long-run, and so, this policy can be said to be selectively export-promoting. 137/. Moreover, a new regime of development contracts was established in 1973 with the purpose to grant a package of benefits (preferential credit and insurance, fiscal exemptions and technical assistance) to firms engaged into achieving certain pre-defined levels of export performance in specified markets. This new regime had little if any impact, and consequently it can be stated that by 1975 there was no direct export subsidy regime with sizeable effects on the Portuguese industry.

The importance of export promotion policies increased with the decline of market shares abroad as a result of falling competitiveness and the partial loss of tariff preferences in important markets (Overseas , United Kingdom and Denmark). In 1976/77, a package of export promotion measures was adopted, the most important of which were: the revision of the export credit and the export insurance systems, the introduction of fiscal benefits and the revision of the regime of export development contracts. 138/ In what follows, we shall study the impact of these measures, estimate the rates of anti-export bias on the basis of nominal protective rates and of an estimated rate of export subsidy, and discuss the evolution of tariff preferences offered to Portuguese exports by the EEC and EFTA.

a)- Export credit and insurance

In addition to the three basic types of export credit operations that were considered as receiving preferential treatment (special and current pre-financing and export financing) the new system established in 1976 introduced several other varieties:

    i) Direct financing of foreign importers, in the case of large single transactions and of substantial purchasing programs.

    ii) Special credit regimes, involving the financing of standing export orders for equipment goods and the establishment of faci-

lities abroad to support locally the sales of Portuguese goods
(as market studies, projects, marketing research, storage and
sales networks).

A new operational scheme for export credit was introduced in Feb-
ruary 1977, whereby the preferential interest rates had to be fully passed
on to borrowers, while the commercial banks would be compensated directly
by the central bank in the form of direct allowances. In this way, the selec-
tive credit policy was made independent of the rediscount policy (to
be used from now on as an instrument of money supply control only) and of
the banks' profitability requirements. This measure aimed simultaneously at
stimulating the demand for and the supply of preferential credit. The differ-
ence between the loan and the discount rates was larger for this type of
operation and therefore, the extra costs borne by commercial banks in ident -
ifyingand selecting preferential loans could be duly compensated.

The system of export insurance was also thoroughly reviewed, in
order to enlarge the scope of its application. Three types of risks were
defined: Those arising before the actual order has been sent to the exporter,
those associated to the manufacturing stage and those arising after the goods
have been delivered. The risks could be of commercial and of non-commercial
nature. (as political, economic, catastrophic or exchange risks). However, a
special financial guarantee had to be provided by public authorities in the
case of operations involving non-commercial risks or very important trans-
actions. This more comprehensive system contributed to make the obtention
of export credits from commercial banks easier and faster.

Due to the troubled state of international trade and payments, and
to the financial and supply difficulties that many Portuguese firms suffered
after 1974/75, commercial banks have increasingly made the concession of ex-
port credits dependent upon previous insurance against risks normally
associated to exporting. Alternatively, they have resorted themselves to
a specific type of insurance known as "financiaI-guarantee-insurance" 139/.
Therefore, the years 1976 and 1977 saw a considerable surge in export in-
surance operations, that covered respectively 11 and 12.4 percent of the
total value of exports. These rates compare favourably with the correspond-
ent figures in advanced open economies, as Denmark (10%), the Netherlands
(8%), Spain (7.7%) and Italy (7%). However, as J.M Barata et al.(op.cit.,
pp.187) remark, the subsidy element contained in these insurance opera-
tions is considered by firms to be almost inexistant. Insurance premiums
are expensive, and some markets where Portuguese firms might gain signifi-
cant shares, as those in the former African colonies, are "charged" with
particularly high rates, due to the specific risks involved.

140/ Until 1980 the export credit scheme remained basically unchanged. However, the preferential interest margins and the range of operations that benefited with the scheme were subject to frequent changes, in connection with the evolution of monetary and exchange rate policy.

In February 1977 the decision to set up a more efficient scheme of subsidized export credit was accompanied by a decrease in the interest rate differential from 4.25/5.25 to 3 percent in all operations, in order to avoid an excessive increase in money supply.

Together with the 5 percent rise in the discount rate and the imposition of credit ceilings in August 1977, several changes were introduced in the scheme of export credit. The interest rate differential was increased to 5 percent, whereas the credits eligible for reduced rates were confined to the special financing of standing orders (maximum period of one year) and to the financing of credits over importers up to 90 days. All the other operations continued to be given preferential access to credit as such, but could not enjoy cheaper loan rates. This narrowing of the scope of the export credit scheme was explained 141/ by the fear that cheaper export credit might stimulate the systematic deferral of payments for exports and the resort to underinvoicing, in a period marked by fast exchange devaluation.

In May 1978, the scheme was revised once again, now with the purpose to find a more balanced solution to the problem of its speculative use. The reduced rates were re-established for current pre-financing, provided that the credit did not exceed a certain percentage of the declared currency receipts throughout the previous year. They were also re-established for loans exceeding 90 days, subject to the condition that the declared export price incorporated at least 30 percent of domestic value added.

Table I.13

Value of preferential export credit

(billion Escudos)

	1974	1975	1976	1977	1978	1979	1980
(1) Pref.export credit	17.3	17.5	22.9	24.5	n.a.	n.a.	89.5
(2) Value of exports	58.0	49.3	55.1	77.7	106.5	175.4	232.2
(3) Credit allowances	-	-	-	.379	.873	1.55	2.69
(4) % Ratio of (1):(2)	29.8	35.5	41.6	31.7	n.a.	n.a.	38.5
(5) % Ratio of (3):(2)	-	-	-	0.5	0.8	0.9	1.2

Source: Reports of the Bank of Portugal, several issues.

These changes in policy are reflected into the evolution of the total amount of export credits granted under the preferential scheme, which is described in Table I.13. The introduction of the new scheme in 1976 was followed by a surge in export credit, both in money terms and as a ratio over total exports. The restrictions that were imposed in 1977 are apparently responsible for the decline of this ratio from 41.6 to 31.7 percent, but by the end of the decade the trend had reversed once again, probably as a consequence of the amendments introduced in 1978.

The rate of export subsidy contained in the export credit policy can be measured as the share of credit allowances directly disbursed by the central bank over the total value of exports. As shown in Table I.13, this rate has been continuously increasing since 1977, but remained at very low levels : between 0.5 percent in 1977 and 1.2 percent in 1980.

However, in a period of ceiling-restricted credit, the benefits of preferential credit cannot be resumed to reduced loan rates. They include also the effects of the firm's easier access to credit as such upon its costs. The obtention of credit under a more generous ceiling saves the firm an extra cost associated to its efforts to seek bank financing by other means, or an eventual price cut to be traded off against worse payment conditions, or even a delay in deliverance.

b) Fiscal incentives

Until 1977 the reduction or exemption of direct taxes in order to promote exports was used quite exceptionally, in the case of firms benefiting of export development contracts . The generalized use of tax incentives was introduced in 1977 with a temporary character - the regime should be in force for a period of three years only [142/].

Among other minor benefits, this new regime allowed for:

i) A deduction of 5 percent of export sales from total gross profits subject to the industrial tax.

ii) An accelerated depreciation allowance on every investment done by firms that exported more than a certain minimum.

iii) Exemption of the income tax and of the tax on profits, in the case of reinvestment of profits in firms exceeding a minimum export level.

So far, the amount of fiscal benefits granted under this regime has not been quantified. Only a very rough estimate is possible by taking into account the impact of benefit i) - the one that is likely to have pro-

duced the strongest net incentive. The total amount granted through this particular benefit can be easily calculated as:

0.05 x Export value x Industrial tax rate

As the rate of export subsidy is given by the ratio of this value over the value of total exports, its maximum level would be equal to the industrial tax rate multiplied by 0.05. The average industrial tax rate,with inclusion of additional and extraordinary surcharges, increased from 20 percent in 1977 to 23 percent in 1978, and to 28 percent in 1979. Consequently the rate of export subsidy that is attributable to benefit i) can be estimated at 1, 1.15 and 1.4 percent, respectively, in each of these three years. If we attribute an arbitrary value of 1 percent in terms of export subsidy to the sum of benefits ii) to vi), we arrive at a total rate of export subsidy included in the regime of fiscal incentives of 2 percent in year 1977 (2.15 and 2.4 percent, respectively in years 1978 and 1979)

c) Other measures of export promotion

The export development contracts are agreements to be established between the government and firms or groups of firms, which set up a package of benefits (technical and commercial assistance, preferential access and lower rates for credit, reduced insurance costs, direct grants and fiscal incentives) in exchange for the achievement of certain pre-defined targets in terms of production and export performance. The criteria for the obtention of these benefits include high percentage of domestic value added, the possibility to increase the export shares of non-traditional commodities and markets, and superior technology.

The previous regime of development contracts knew little success, as only 22 contracts were established during the period 1973/76. However, the revised regime that was introduced in 1976 had a smaller impact still. No contract was signed during the first two years of its implementation, and until 31.12.81 only 14 contracts had been signed [143/] . This failure has been attributed to a number of difficulties : a too lengthy bureaucratic process, a low ratio of expected benefits relative to administrative costs involved in their obtention, and excessively restrictive requirements, that most firms, especially those of medium and small size, cannot fulfill (financial equilibrium, adequate accounting system, significant percentage of own funds in investment, etc.).

The schemes of export promotion that are based on the reduction
of the average tariff rate payable on imported inputs did not know any
substantial revision throughout the period under study. The incidence of
such schemes (drawback and temporary importation) continued limited to a
very small number of industrial branches. In 1977, more than 70 percent
of the total value of imports covered by the drawback scheme were textile
products (to be used mainly as inputs in the clothing industry). As a share
of total exports, the value of imports that benefited of drawback did not
rise above 2.7 percent in the period until 1978.

As a result of the new protective regime for the car industry,
the importance of the scheme of temporary importation increased notice-
ably after 1970/72. The share of imports made under this scheme rose from
2.0 to 4.5 percent, relative to total exports, between 1970 and 1975, but
declined thereafter. In 1977, more than 60 percent of these imports consist
of goods classified under transport equipment designation, and 18 percent
of machines, parts and pieces.

One criticism that has been directed against the
scheme 144/ is the lack of objective criteria in the determination of the
amount of duties to be given back at the exporting stage. Moreover, this
scheme, as it has been implemented in Portugal, fails to achieve its main
objective that is to compensate for the anti-export bias introduced by the
protective structure. Evidence has been provided that the most important
role in this structure belongs to non-tariff barriers, some of which cannot
be duly quantified and therefore cannot be compensated for. This difficulty
is more easily overcome in the case of temporary importation, as the deci-
sion to suspend the customs duty can be made to coincide with the suspension
of the surcharge and the issueing of an import license.

d) Bias against exports

It is not possible to afford a precise estimate of the average
rate of export subsidy corresponding to the simultaneous operation of all
promotion instruments so far examined. Leaving aside the subsidy equivalent
of an easier access to credit, and summing over all the estimates that we
were able to produce for the other instruments, we arrive at an approxim-
ated value of 4 percent, in the year 1977.

The small magnitude of the average rate of export subsidy

can be related to a number of factors : international supervision of schemes
of export subsidization, excessive bureaucratic delays and difficulties, res-
trictions imposed by the need to avoid a speculative use of the incentives,
and difficulties facing small, badly-staffed firms to take advantage of the
full range of benefits put at their disposal. Furthermore, policies of ex-
port promotion have been so far restricted to pricing measures. However, the
regime of import licensing gives authorities the opportunity to transfer
income indirectly to exporters as an incentive to better achievement goals.
Additional licenses could be allocated to exporters in proportion to their
foreign sales, or to the share of domestic value added in the export price,
or a combination of both. Exporters might use the excess imports of inputs
to produce additional goods to be sold in the domestic market, and therefore
enjoy the increased value added under protection; or alternatively to sell
directly the excess imports to non-exporting firms, thereby reaping the
scarcity rent. Another form of channelling the premium on import licenses
towards exporters consists in allowing these to retain earned foreign ex-
change up to a specified share of foreign sales. This measure would give
exporting firms a decisive advantage in importing intermediate products
freely and in defending themselves against the depreciation of the Escudo.
Furthermore, the incentives to the use of underinvoicing as a means to
channel assets to foreign banks would be considerably reduced.

The increasingly protectionist policies adopted after 1974 and the
lack of flexibility in the articulation between import and export policies
to compensate for the negative impact upon comparative exports' reward ex-
plain why the bias against exports has increased so much between 1974 and
1977 . The sectoral rates of anti-export bias for 1977 are presented in
Table B.5 (those for years 1970 and 1974 are presented in Table B.3). They
were calculated under the assumption of an identical export subsidy of 4
percent for every branch and the practical inefficiency of the schemes of
drawback and temporary importation.   The Spearman
correlation coefficient between the 1970 and the 1977 rankings was estimated
at 0.297, i.e. not statistically different from zero at a 10% level of sig-
nificance. The post-1975 commercial policy brought therefore substantial
changes as to the distribution of the bias against exports across industrial
branches.

From the comparison between Tables B.3 and B.5 we may conclude
that the bias against exports "exploded" between 1970 and 1977, particular-
ly in those sectors that are more outward-oriented, some of which register

negative value added on exports. Therefore, the domestic measures of export promotion did not seem to fully compensate for the negative impact of the protectionist surge after 1975. Nevertheless, exports increased substantially in 1977, in response to positive measures taken to reestablish cost competitiveness (see Section 3.3). The question inevitably arises as to whether the ability to supply goods abroad at a competitive price will not mean a reduced wage rate or profitability relative to alternative domestic outlets in the same branch or to alternative uses of resources. This situation could conceivably arise in a state of temporary disequilibrium: producers would prefer to channel sales towards foreign markets, even at a reduced value added, rather than scrapping capacity or licensing labour, in the face of a dwindling domestic demand. However, the evidence so far provided consistently suggests that the original concept of "bias against exports" can not be used without qualifications, when the purpose is to explain the extent and pattern of international specialization in a cross-sectional context.

Besides the deficient quantification of average tariffs and export subsidies, due to the use of "official" instead of "collected" customs duties and surcharges $\underline{145/}$, and to the neglect of the subsidy element contained into the more liberal access to credit for exports, there are more fundamental issues to raise.

In the first place, as stated earlier, this concept ignores the possibility of setting discriminatory export prices in an effort to capture the income effect of tariff preferences in foreign markets.

Secondly, the concept of "bias against exports" ignores scale economies. When the small size of the domestic market represents a restriction to the efficient exploitation of scale economies, the export outlet allows for a reduction in the average production costs. These gains may therefore compensate for the distorting effects of domestic tariff protection.

Thirdly, when scale economies are present and can only be efficiently exploited through access to foreign markets, international competitiveness may be easily achieved by internal dumping, the difference between the export price and the internal production cost being financed out of the rent obtained in sales to the (protected) domestic market. In this case, tariff protection serves as an additional subsidy to exports and not as a deterrent, and can indeed be justified on the same lines as "infant-industry" protection.

Finally, we may introduce the possibility that the profits obtained by firms in exporting are not only related to productive activities but also to speculative practices. In POrtugal, generalized resort to underinvoicing

has allowed exporting firms to earn extra-profits on that share of foreign sales that are subtracted to the official declaration. Undeclared receipts can be exchanged against assets nominated in foreign currency, that yield higher rates of income in domestic currency than alternative financial or productive investment in the Portuguese economy [146/].

e) The effects of EEC preferences and of additional import restrictions on Portuguese exports

The two revisions suffered by the Agreement, respectively the Additional Protocol of 1976 and the Complementary Protocol of 1979, introduced several changes into the tariff regime facing Portuguese exports to the Community :

- The Additional Protocol eliminated the duties on Portuguese manufactured goods as from 1.7.76, thereby anticipating by one year the deadline for tariff removal.
- Some ceilings on textile exports were suspended and those remaining in force were raised by 4.6 percent in average, in 1976.
- The zero-duty tariff quotas on some paper products were extended to other EEC members besides the United Kingdom and Denmark, and considerably raised by the Additional Protocol. Later on, the 1979 Protocol transformed the tariff quotas into ceilings and raised the respective amounts.
- Both Protocols (and especially that of 1979) extended and improved the scope for tariff concessions to agricultural products.

However, the most important innovation in this field was the shift in EEC policy from Community-ceiling supervision to informal agreements establishing "Voluntary Export Restraints" (V.E.R.s), as the main instrument for effective control of textile imports from Portugal.

This change in policy, that occurred in 1977, obviously reflected the general shift in EEC's trade policy, which in turn was the direct outcome of developments undergone by the Community's textile industry.

The EEC adopted a relaxed attitude among the main textile importers during the protectionist surge of the early seventies. Although a signatory of the First Multi-Fibre Agreement, the EEC was slow to sign bilateral agreements restricting MFA imports from low-cost suppliers. Almost two years of the MFA I passed before Community-wide restrictions were imposed on

major exporters, who had meanwhile the opportunity to increase their ex-
ports as rapidly as possible in order to raise the initial level of future
quotas. Moreover, the EEC signed a string of preferential agreements offer-
ing generous tariff concessions to some of the most aggressive suppliers
of textile and clothing products, especially in the Mediterranean area.

By the end of 1976 it had become clear that a change in policy
was required : a full swing had occurred from a net surplus in textile
trade of 1.234 million dollars in 1973 to a net deficit of 1.061 million
in 1976. Between 1973 and 1975 employment in textile and clothing combined
fell by 366 thousand in the Community, which was attributed mainly to com-
petition from cheap imported products, and gave strength to claims put by
the protectionist lobbies.[147].

In the face of unilateral action by some of its individual mem-
bers, the EEC imposed temporary restrictions on textile and clothing im-
ports in 1977, and negotiated bilateral agreements with approximately 30
MFA suppliers. These were induced to agree to a far more restrictive MFA
renewal under threat of unilateral EEC action. The main goal of the EEC
in renegotiating the MFA was to reduce sharply the imports of eight high-
ly sensitive products, accounting for over 60 percent of EEC imports from
low-cost suppliers, and to allow virtually no future growth of such imports.

However, the preferential agreements establishing duty-free (or
at least, liberalized) access to Mediterranean textile products presented
a difficulty to the achievement of a global import ceiling for all low-
cost suppliers, as no import restriction could be made binding on a per-
manent basis. Relying on the argument of a possible resort to the safeguard
clause, the EEC persuaded all important suppliers in the Mediterranean area
(except Turkey) to accept a voluntary limitation of their exports of textile
and clothing products. These informal agreements set the maximum quantities
that could be exported to each EEC country in each product category, and
defined the rules of quota management [148].

Like the other Mediterranean countries, Portugal signed a one-year
agreement for 1978, and then a three-year agreement for the period 1979/81.
The impact of the EEC textile policy on Portuguese exports can therefore be
subdivided into two distinct periods - before and after 1978 - and has to
be examined in close connection to its global policy towards the Mediterra-
nean area.

The effect of the EEC's trade policy on Mediterranean exports

of textile and clothing over the period 1970/76 was studied by R. Pomfret (1982). By use of the "control-group" methodology, Pomfret was able to conclude that the preferred imports grew faster than world trade or OECD imports from other developing countries, and as a proportion of both EEC imports and Mediterranean exports. While EEC preferences appear to have had a significant effect on Mediterranean countries' textile and clothing exports in general, wide disparities existed among recipients as to the advantages they were able to extract from the preferential agreements.

As a matter of fact, as Table I.14 clearly shows, Portugal has been amongst   the least benefited recipients of tariff preferences[149].

Table I.14

EEC imports of textiles and clothing from Portugal and Mediterranean countries

1970 and 1976

	Portugal				Medit.countries *			
	Textiles		Clothing		Textiles		Clothing	
	1972	1976	1972	1976	1972	1976	1972	1976
As % of OECD imports								
a) from world	0.6	1.0	0.6	0.6	2.3	5.4	1.8	5.7
b) from LDCs	5.0	4.6	2.3	1.4	17.7	24.7	6.5	12.9
As % of EEC(9) imports								
a) from world	3.9	3.7	4.7	2.2	13.7	19.9	13.3	19.9
b) from LDCs	11.1	9.9	7.1	3.6	39.0	53.4	20.2	32.1
As % of OECD imports from the exporters	44.3	62.1	42.1	52.6	59.6	81.4	45.9	78.9

(*) Greece, Portugal, Spain, Turkey, Malta, Cyprus, Morocco, Algeria, Tunisia Egypt and Israel.

Source: R. Pomfret (1982, Table 1.)

Portuguese exports of textile and clothing products to the EEC declined both as a share of EEC imports and as a share of OECD imports from low-cost suppliers. Portuguese exporters lost market shares on the EEC market, not only in comparison to other Mediterranean countries, but also in comparison to non-preferred partners, which is an indication of the extent of their general loss in competitiveness. On the other hand,

the rising share of the EEC in Portuguese exports indicates that tariff pre-
ferences were not entirely ineffective : there was apparently a diversion of
exports towards the EEC markets, where the loss in competitiveness could be
matched to some extent by preferences.

A different question to be asked is whether the ceilings imposed
on sensitive products played a restrictive role or not. In order to be able
to answer this question, it is necessary to compare the growth performance
of "sensitive" and "non-sensitive" exports both to the EEC and to the Rest
of the World (ROW). On the basis of selected samples drawn from product
groups defined in accordance with the list of "sensitive" products presented
earlier (cf. Table I.) Laspeyres indices of volume growth and Paasche price
indices were computed $\underline{150/}$ for the period 1972-77.

Table I.15

Price and volume indices of textile exports

(1972 - 77)

	Sensitive		Non-sensitive	
	Volume	Price	Volume	Price
Total exports	89.6	225.9	59.8	277.3
Exports to EEC-7	145.5	229.3	193.5	258.6
Exports to ROW	81.9	224.8	49.9	385.7
Exports to UK+DK	81.9	201.4	n.a.	n.a.

Source: Estatísticas do Comércio Externo, INE, Lisbon, 1972 and 1977

These results suggest that the export performance of both sensi-
tive and non-sensitive textile exports improved only in those markets that
were removing tariffs vis-à-vis Portuguese products in the period under
consideration , i.e. the original EEC members plus Ireland. In the other
markets, textile exports declined in constant prices between 1972 and 1977.
It is particularly relevant the fall of textile exports on the British
market (an average annual rate of decline of 4 percent), which reflects
both the impact of the loss of preferential margins due to the first EEC
enlargement and the bilateral V.E.R. agreements already in force for some
products $\underline{151/}$.

By comparing the growth index of "sensitive" exports to the EEC
to that of "non-sensitive" exports, we may conclude that the latter increa-
sed their share in Portuguese textile exports to the EEC. However, this

conclusion can not be taken as a final indication that "ceilings" were operating so as to restrict Portuguese exports effectively. The relatively better performance of exports of "non-sensitive" products could have been due solely to an increased ability of suppliers of these products to improve their competitiveness in terms of price, product quality, terms of delivery, etc. In order to test for this possibility, we must compare the growth index of "sensitive" exports to the ROW (i.e. the World minus the EEC-7) to the growth index of "non-sensitive" exports to the ROW. If the extent to which the latter exceeds the former is larger than the difference found earlier for the corresponding products exported to the EEC, then we may conclude that the surveillance measures adopted in 1972 had a trade-inhibiting effect on Portuguese exports of textiles and clothing. In other words, we are comparing the following ratios:

$$A = \frac{e_s}{e_n} \qquad \text{and} \qquad B = \frac{r_s}{r_n}$$

where e and r are volume growth indices of exports to the EEC-7 and the ROW, respectively, and the subscripts s and n refer to "sensitive" and "non-sensitive" products respectively.

In the present case, it is clearly $B > A$ and therefore, we may conclude that the exports of "sensitive" products to the EEC would have increased much faster than they did (and, in any case, faster than "non-sensitive" exports) had the surveillance measures not been operative.

There is no evidence that these measures have operated directly by levying CET duties instead of the zero rate. Among the ten items included in the 1972 list, only five did actually outpass their respective "ceilings" in 1977, but there is no record of CET duties being actually reimposed on textile imports from POrtugal in that year (in the case of "ceiling" supervision this is not automatic).

"Ceilings" must have operated rather in an indirect way, by inducing Portuguese firms to diversify sales towards products that were less subject to Community's surveillance and   competition from other low-cost suppliers.

The growth rates of unit values indicate a slower increase in "sensitive" rather than in "non-sensitive" products, as well as a slower increase in sales to the United Kingdom and Denmark. These differences confirm the expectation that prices are inversely related to supply growth. In order to hold market shares in those markets where competition was more severe, Portuguese exporters could not match entirely the rising costs with

an equivalent rise in prices.

Now let us examine the impact of the V.E.R. agreements upon Portuguese exports to the EEC. In comparison with the product coverage of the ceiling system of surveillance that had been in force since 1973 (see Table 1.14), four more four-digit BTN items were added, whereas one was excluded [152]. The share of Portuguese textile exports to the EEC that became subject to V.E.R. arrangements was estimated as 87 percent in 1977.

Table 1.16

Price and volume indices of textile exports
(1978 - 81)

	Sensitive		Non-sensitive	
	Volume	Price	Volume	Price
Total exports	136.6	219.0	112.3	199.8
Exports to EEC-9	152.2	225.2	129.2	199.8
Exports to ROW	117.8	211.3	89.0	199.8

Source: Estatísticas do Comércio Externo, INE, Lisbon, 1977 and 1981

Again in this period, textile exports to the EEC (now including the UK and Denmark) have increased faster than those to the Rest of the World. The addition of some fast-increasing export products to the list of "sensitive" items accounts for the fact that "sensitive" exports to the EEC increased faster than "non-sensitive" ones throughout the period. However, the impression left by these figures as to the inexistence of trade-inhibiting effects of V.E.R.s is misleading. By computing the same ratios as above, we may again conclude that B > A (although the difference is now smaller). The "sensitive" group has enjoyed greater competitive gains in relative terms throughout the period 1977-81, and consequently the growth of its exports to the EEC would have been higher, had V.E.R.s not been in operation.

There is additional evidence in G. Ashoff (1983) as to the restrictive effects of V.E.R.s upon Portuguese exports in 1981. By assuming that the very existence of quotas by importing EEC country and by product category has had restrictive effects only when their utilization exceeded the level of 75 percent, the author took the ratio of the total volume of the supplying country's exports to the respective EEC member

countries corresponding to over-utilized quotas to its total textile and clothing exports to the EEC as a whole as a measure of the effective restrictive role of V.E.R.s (but not of potential exports "forgone"). The results suggest that 38.9 percent of Portuguese exports to the EEC of these products were actually restricted by V.E.R.s, this being the second largest effect among Mediterranean suppliers, next to Turkey.

Despite the wide coverage of the V.E.R. Agreements with Portugal and their proved export-reducing effect, it is by no means certain that this restraint policy has been detrimental to the interests of exporting firms. Between 1977 and 1981 V.E.R.-subject exports to the EEC-9 grew at an annual average rate of 10.5 percent, which is much above the growth performance of other low-cost suppliers, in particular those that were signatories of the MFA II (cf. G. Ashoff, 1983). As a result of this, most Portuguese firms were able to reverse the recent trend and increase their share in EEC markets. This contrasting performance reflects the discriminatory treatment afforded by the EEC to low-cost suppliers, according to whether these are signatories of the MFA or of preferential trade agreements. Differences of treatment favouring the latter have been detected, not only in what concerns the mechanisms of supervision and compliance, but also the initial amounts and projected growth rates of the quotas [153/].

Furthermore, by comparing the price indices of "sensitive" and "non-sensitive" products, we may conclude that, whereas the behaviour of export prices of "non-sensitive" goods was homogeneous across markets, that of "sensitive" goods was not. This suggests that exporters to the EEC-9 , where V.E.R.s were in operation, were able to increase prices to a fastar rate than those selling to other markets (a substantial share of which were V.E.R.-free). This behaviour contrasts with that observed during the previous period, and confirms a theoretically expected outcome of V.E.R.s (cf. K. Jones, 1984   ). Competitive suppliers of V.E.R. subject commodities tend to charge prices above the world price level as a rent for the shortage of low-price imports, if V.E.R.s are applied in a sufficiently extensive way, so as to cover all important competitive suppliers.

3.6. Other economic policies with direct influence on the price system and the pattern of resource allocation

The price system in Portugal has been subject to several distort-ing influences other than those operating directly on the relation between foreign and domestic prices and costs. Among those, we shall examine briefly the policies of price control, employment and direct subsidies, and their effects on the price system and the pattern of resource allocation.

Price control policies have an old tradition in Portugal, as we saw in Chapter I, when examining the historical background. They originally served social policy purposes, but, as inflation mounted, in the late sixties, they became a permanent instrument of anti-inflationary policy.[154/] Presently, there are three types of price controls in operation : maximum prices, reported prices and prices under surveillance.

The majority of the products subject to maximum prices meet basic needs of a large number of consumers, and the decisions taken by governments as to adjust prices to increasing costs involve considerable political bargaining. Delays have been frequent and deteriorate the firms' financial situation, especially in the public sector. Consequently, the setting of maximum prices is generally linked to a system of direct State subsidies.

"Reported prices" are currently still the most widely used form of price control. Every firm exceeding a pre-defined level of total sales (or of sales of a specific product) must report their prices and costs to the Domestic Trade Department. Pre-tax prices of products sold on the domestic market are subject to a maximum margin of 30 percent above production costs. This margin is actually reduced to 10 or 15 percent after taxes are deducted.

Both schemes of price control have been subject to strong criti-cisms. In the first place, empirical and theoretical evidence elsewhere has not provided enough arguments for their use, even as an instrument of anti-inflationary policy , except in the short run. Moreover, they create distortions in the allocation of resources. These tend to be attracted towards those sectors and products where a scarcity rent can be earned, or where risk is practically absent as a result of the price con-trol scheme, instead of those with more dynamic demand prospects. Innova-tive products or technologies find it hard to be implemented, if the neces-

sary funds for investment cannot be duly generated within the well-established branches of the firm. Besides, corruption and bureaucratic costs find it easy to flourish within price intervention schemes.

The perception of the excessive costs of the traditional forms of price control has led more recently to the adoption of schemes whose purpose is simply to subject some specific product prices to the authorities' surveillance, without actual previous permission being required as a rule[155/]

Since 1975, labour dismissals cannot normally take place except in cases of insolvency or of severe financial and economic hardship of the firms directly involved. In any case, prior authorization from the Ministry of Labour is mandatory. Originally conceived as a means to fight unemployment, the labour laws in Portugal became a source of rigidity in the process of resource allocation as well as a prime cause for the emergence of perverse social and distributional effects.

The present labour laws influence negatively the adjustment capacity of the economic system in a variety of ways. Firstly, they create desincentives for the adoption of labour-saving technologies in established industries, thereby delaying the necessary adjustment to foreign competition. Secondly, overmanning raises production costs and, together with more expensive credit, has been the prime responsible for the transformation of previously profitable firms into cases of near-bankrupcy. As the ultimate reason for excessive labour costs is attributed to the employment policy, demands from "sick" firms for subsidies in order to sustain employment can hardly be repealed by the government. Therefore, further subsidization is the price to pay for the current employment policy.

Even as an instrument of employment policy, the labour laws have largely failed their objectives. In the first place, they have not avoided the continuous rise of the "official" unemployment rate, from 1.3 percent in 1974 to 9 percent in 1980, and approximately 11 percent in 1983. The impact of unemployment has been very unequal across age and sex, with women and school-leavers bearing most of the costs of structural rigidity, while most of those employed in large, influential firms have successfully hold on to their jobs. Secondly, the labour laws gave rise to a dualistic labour market: whereas the wage and working conditions of those workers who are protected are determined by collective bargaining, recently employed wage-earners have to work on a temporary basis and are therefore subject to free market laws. This dualistic labour market has been a source of distortions

among competing firms. Thirdly, the labour laws contribute towards a social atmosphere that is not conducive to productivity increases. Excessive job security combined to automatic promotion procedures internal to the firm is normally responsible for a lack of self-motivation, whereas the temporary character of most new jobs acts as a desincentive to professional training and multiplies the costs of adaptation.

Traditionally, the policy of capital subsidization had been pursued basically by means of tax reductions and exemptions, as the ceilings on interest rates did not allow much space for credit bonuses. After 1976, it became necessary to implement new and more generous forms of financial assistance, so that the restrictionist policy that had been implemented in the meanwhile with respect to credit did not affect the investment rate too severely. Preferential interest margins were widened, a scheme of direct allowances by the central bank was created in order to allow commercial banks to pass on to borrowers the total interest differential, and support to longer-term loans was envisaged.

However, the concession of extended financial facilities was accompanied by greater selectivity, and therefore, a more crucial role had to be played by the Administration. The experience proved that State bureaucracy was not up to its new task. Different centres of decision, frequent changes of criteria in the assessment of projects' viability, excessive bureaucratic requirements, delays in the financial participation of the central bank, and the uncertainty created by the fluctuations in monetary policy, reduced the efficiency of financial assistance schemes. Its objective of raising the the average ratio of productive investment to GNP was not achieved - it stagnated at 14 percent between 1976 and 1979. In order to clarify the scheme of credit subsidization and channel investment towards high productivity, net exchange earning projects, an "Integrated Incentive Scheme" was adopted in 1980 [156/].However, the complex procedures of project selection, trying to reconcile employment, regional, industrial and technological policy targets, made the scheme largely inoperative (J. Rendeiro, op. cit., p. 63).

The importance of financial incentives to investment can not be underestimated though. In December 1980, 55.3 per cent of the financing to private investment was obtained through preferential credit, 52.3 per cent of which was long term and 18.1 per cent medium term. Non-preferential credit was distributed in an opposite way, with only 23.3 per cent being medium- and long-term (Report of the Bank of Portugal, 1981). Interest

rate differentials in subsidized credit were substantial (10.5 and 5.5 per cent in the first year, depending on whether the investment was considered to be first or second priority) which, together with fiscal exemptions due to the debt service, maintained the real interest rate on loans for capital expenditure at negative levels. Therefore, the capital-intensive sectors of the economy continued to be privileged in terms of access to credit, despite the rise in unemployment and the increasing trade deficit.

A special scheme of financial assistance (involving subsidized loans and tax exemptions) was created in 1977 with the objective to redress the financial situation of firms that had contracted short-term loans to cover operating losses during the period 1974/76 and were caught unprepared to match rising interest rates thereafter. However, this scheme progressively departed from a timely intervention designed to compensate for the effects of temporary market disturbances into a generalized concession of cash facilities to inefficient firms. Until 1980 the number of "rentabilization" contracts awarded had not yet ceased to grow, and by December 1981 the total capital involved in such contracts was estimated in 700 million US dollars, 55 per cent of which corresponded to subsidized loans (Report of the Bank of POrtugal, 1981).

These "rentabilization" contracts are just one of the forms through which the government channels funds to apparently unviable firms in order to keep them in business. The State Secretary for Employment runs a scheme of grants to firms in hardship that threaten to license workers. The lack of transparency in criteria and of assessment of results is revealed by the inexistance of any published report about this scheme. Finally, the Ministry of Industry runs a complex scheme of direct subsidies to nationalized firms, or to firms whose products are subect to maximum price setting. Although the magnitudes are not known, it has been argued that the injunction of public funds to cover firms' losses has been a major factor responsible for the widening public budget deficit.[157]

The concession of subsidies to industries, not justified by any existing market imperfection or temporary disequilibrium, creates artificial distortions among competing domestic firms and reduces the potential benfits of trade and specialization, without raising any welfare gains derived from a closer correspondence between actual and opportunity costs. When such a policy is maintained for a longer period than that required by short-term stabilization policies, production adjustments to international shifts in competitiveness become severely affected, and

a sustained recovery of the economy is delayed. Moreover, the granting of economically unjustified subsidies spreads easily to other firms in the same sector and to other sectors of the economy. Keeping unprofitable firms in business, regardless of their market performance, often means to distort competition at the expense of profitable competing firms that, as a result, also start to have problems and have to ask for further subsidies. Therefore, the list of candidates for State aid expands automatically.

3.7. Summary and Conclusions of Part I

Commercial policy instruments can play a very important role in stimulating economic growth, especially of industrial activities. The direct intervention on the ratio of domestic to foreign prices is justified in economies subject to adverse conditions, such as small market size, technological backwardness, great distance from the main consuming markets, or to market imperfections. However, the role of commercial policy can not be restricted to the maintenance of minimal conditions of profitability for existing or projected firms, by means of "made-to-measure" protection. In a dynamic perspective, the artificial maintenance of a differential between domestic and foreign prices for the same commodity can only be justified,from an economic point of view, if this support helps the firm to increase its own productivity in the long run, or that of other firms and/or activities in the same economy. This macro-economic objective can be achieved if commercial policy contributes to raise output in externality-generating sectors, to shift resources towards potentially competitive sectors or to increase the general efficiency of the economy.

Commercial policy should deal, under this dynamic perspective, with important choices, not only as to the degree of static protection to be afforded to individual firms or sectors, but especially as to:

- the timing of infant-industry protection;
- the dispersion of the nominal rates of protection;
- the connection between the tariff rate levied on the output and the rates levied on the inputs;
- the use of alternative protective measures, as subsidies,taxes, quotas, etc., instead of tariffs.
- the use of export subsidies in order to compensate for the adverse bias introduced by protection to sales to the domestic market.
- the alternative between discriminatory and preferential trade.

In Portugal, commercial policy has been traditionally conceived
as a passive complement to industrial policy, designed to assure minimal
profitability to established or projected firms, rather than an active
tool of industrial development. Besides this basic restriction, commercial
policy has been denied an active role in development because of its sim-
ultaneous use as a direct means of intervention in case of external dis-
equilibrium and as a source of fiscal revenue. In the first case, inter-
vention is directed towards currency rationing by means of quotas and
import licensing. Besides their immediate distortive role in terms of
resource allocation, these quantitative restrictions tend to become a
permanent feature of the protective system, thereby raising the general
level of protection and making the economic system less responsive to
price and income changes. In the second case, intervention is by means
of tariffs levied on low price-elasticity, high income-elasticity goods.
Insofar as revenue-raising tariffs increase the costs of imported inputs,
they lower the rate of effective protection and may turn the protective
policy partly inoperative.

The participation into international organizations and agreements,
especially those that are more directly concerned with european integration,
has played a corrective role in this context. The choice as to alternative
instruments of commercial policy became richer and the submission to inter-
national procedures of surveillance helped to make the protective system
less discretionary and more prone to liberalization.

The   relationship between nationally autonomous and foreign-
constrained commercial policies, as well as the roles assigned to these
policies, according to whether revenue collection, currency saving or
industrial development were the priority targets, varied a great deal
throughout the recent economic history of the country. Five main periods
can be distinguished in this respect.

The first period embraces a succession of cycles of economic
activity and policy, all of them sharing the common characteristic of not
having transformed the basically rural, pre-industrial nature of Portuguese
society. Until the Second World War, an incipient industrial base sur-
vived under high protectionist barriers, that had become traditional since
the earliest tariff reforms of the 19th century. Following a serious
international crisis, a sharp rise in protectionism took place in the 1890s
which stimulated the first sustained process of import substitution in the
industrial sector. High tariff levels persisted within a totally autonomous

commercial policy, and were occasionally supplemented by quantitative
restrictions in order to curb the foreign deficit. Tariffs had mainly
a fiscal role, especially after the early industrialization efforts sub-
sided, under the joint effects of an unfavourable international environ-
ment and internal tensions raised by the resistance to industrialization
from traditional sectors.

After the War, a second period starts in which commercial policy
partly looses its autonomous character. Portugal's participation into the
OEEC allowed it to be contemplated by the Marshall Plan, to share in the
E.P.U. discipline for intra-European settlements and to take part in the
multilateral negotiations envisaging trade and exchange liberalization.
Furthermore, the country's authorities started to be involved in the deba-
tes that would lead to the partition of the OEEC into two economc blocs
- the EEC and EFTA.

From the point of view of the prevailing policy instruments,
this second period, that ends in 1959, can be divided into two sub-
periods. Until the mid-fifties, the prime objective was to manage the
unbalanced stock of foreign currencies without disrupting imports. A
complex system of quantitative restrictions and exchange controls was
set up to this purpose, and then liberalized in accordance with interna-
tional rules, until the full return to external convertibility. In the
second sub-period, once these restrictions practically removed, the Tar-
iff emerged as the fundamental instrument of commercial policy with its
dual role: revenue collection and industrial protection. However, in
contrast to the previous period, its protective role was made an essen-
tial condition for the achievement of an import-substituting strategy,
that sought to build a system of inter-industry linkages under strict
State control. Despite a relatively small public sector, the State con-
trolled effectively the orientation of the industrialization process by
indirect means, such as licensing, administrative pricing and fiscal and
financial incentives as a subsidiary, together with tariffs and quotas.
However, the Tariff's efficiency to achieve development aims was handic-
apped by its continued fiscal role and its frequently prohibitive level,
that discouraged long-term gains in productivity.

The third period covers a time interval of approximately 10
years, between the Stockholm Convention and the launching of the economic
reforms of 1968/69. It is widely agreed that EFTA membership contributed

decisively towards the transformation of the economic structure and of domestic policies during this period. Portuguese firms in competitive sectors were able to overcome initially adverse conditions thanks to tariff preferences, and expand considerably sales in EFTA markets, thereby creating an outward-oriented sector in manufacturing. The fiscal role of commercial policy was significantly reduced when the general transaction tax was created as a replacement for the falling customs revenue. The adoption of more liberal rules of establishment, as well as the IMF rules on current payments, contributed to the liberalization of F.D.I.

The terms in which Portuguese membership had been negotiated left a large room of manoeuvre for autonomous policy making. According to the Annex G of the Convention, the large majority of domestic industries would be shed from foreign competition for a sufficiently long period. Furthermore EFTA lacked means of intervention on such fields as trade relations with third countries and industrial policy. Therefore, it was possible for Portuguese authorities to pursue commercial and economic policies that, albeit compatible, were contradictory with the objectives that EFTA membership was supposed to achieve.

One of such policies was the establishment of a free trade area with the Overseas Territories and the discriminatory partial liberalisation of exchange controls. As the pattern of bilateral comparative advantages vis-à-vis those economies was the opposite of that existing vis-à-vis the industrialized world, the "protection to exports" contributed to neutralize partially the resource reallocation effects expected from EFTA membership. Another contradictory policy was the ultra-protective schemes for the new industries to be launched during the 2nd Development Plan. The conciliation between these two opposed strategies was perceived in terms of a "young economy", that was allowed to develop its externality-generating network of industries, until it might become internationally competitive.

The problem with this argument is that most of the capital-intensive undertakings that were privileged by public support could never reach international competitiveness, due to the lack of autonomous sources of energy and raw materials, whereas labour-intensive industries and the primary sectors were not supported for their modernization. As available investment resources were devoted to the "base" industries, and protection raised the costs of intermediate goods, the expansion of potentially competitive branches was hampered. Therefore, the benefits of free access to EFTA markets were reaped only partially.

The second half of this period marks a departure from traditional views, which is reflected in the guidelines for the Interim Plan and the preparation of the 3rd Plan. To increase the growth rate of exports, in order to close the foreign trade gap, and to introduce a greater degree of competition in the domestic market became stated objectives of policy. It was in this context that the first measures of export promotion, the attempted reforms of licensing and the liberalization of F.D.I. took place. However, the actual impact of these measures upon the allocative pattern remained marginal.

During the fourth period, between 1968/69 and 1974/75, commercial policy was used predominantly as an instrument of economic development. Free of fiscal or external equilibrium restrictions, the tariff policy left duty rates sink under the effect of import price rises, whereas a policy of selective export promotion was followed with a view to "pick up winners" in a future, internationally liberalized context.

The direction of preferential policy was further clarified. Full tariff removal for Annex G products was negotiated in 1970, and after the Free Trade Agreement with the EEC, it became clear that the Portuguese economy should take full part in an European-wide free trade area, by the end of the 1970s. On the other hand, the preferential regime vis-à-vis the Overseas Territories knew a serious setback when exchange controls and quantitative restrictions were reimposed in 1972.

However unintended it might in part have been, the liberalization of imports was coherent in respect of the "New Industrial Policy". In short, State protection should cease for established firms, in order to let some market selectivity to operate, whereas financial support should be concentrated on promoting a few would-be winners. This strategy presupposed a large scale shift of resources between activities and entailed several adjustment costs: a frictional rise in unemployment, idle capacity in the most affected sectors, and a temporary deterioration of the foreign trade gap. However, these costs seemed low, against the favourable background of the early 1970s, marked by world demand expansion, strong reserves, and low unemployment.

The twin shocks of rises in domestic wages and in oil prices in 1973/75 cancelled the conditions for an immediately successful strategy of outward-looking development. Throughout the fifth period, commercial policy in Portugal was used with a dual purpose.

The first one consisted in curbing the foreign trade deficit, in a context of rapidly changing foreign relations and of great international uncertainty. Quantitative restrictions and import surcharges were used as policy devices in an early period. These measures were later supplemented by export incentives, designed to compensate partly for the consequent loss in international competitiveness, but their effectiveness was low. The discrete parity change of February 1977 opened the way towards a partial redressing of this QR-regime through a progressive devaluation-plus-liberalization package, to be monitored by the IMF. However, despite reductions in the surcharge rate, non-tariff barriers were to become a permanent feature of the Portuguese protective system.

The second purpose was to achieve the integration into a free trade area for industrial products, covering both the EEC and EFTA. Tariff removal became faster than had been programmed, due to the erosion of basic duties, percentage-wise. The issuing contradiction between preferential liberalization and the macroeconomic policy of import restraint was solved only partially by the resort to successive amendments of the original Free Trade Agreement. In reality, the influence of non-tariff barriers, tolerated rather than accepted by Community members, was determinant.

The resort to non-tariff barriers was not one-sided. Voluntary export restraints were negotiated bilaterally with Portugal in the context of the "textile policy" of the European Communities. In the one hand, the outcome of such a policy must be considered as positive from the standpoint of Portuguese interests, as the terms of the V.E.R.s were more severe - for signatories of the Multi-Fibre Agreement than for countries that had preferential relations with the EEC. In the other hand, V.E.R.s played an effective role in curbing exports of "sensitive" products to the EEC, but indirectly contributed to a diversification of the commodity pattern of textile and clothing exports.

The net overall outcome of commercial policy in this period was a substantial increase in the rate of effective protection for manufacturing industries and a disruption in the traditional protective pattern. Together with a greater degree of state interventionism, this increase in protection blocked the adjustment in domestic reource allocation to exogenous price changes and preferential tariff cuts. Therefore, on the import side, the 1972 Free Trade Agreement did not materialize as a gradual preparation of the economic structure having in sight future EEC membership.

NOTES TO PART I

1/ See W.M. Corden (1971, 1974), M. Chacholiades(1978),
A. El-Agraa (1983), J. Bhagwati and T. Srinivasan (1983).

2/ The works of M.H. Pereira (1971) and S. Sideri (1971) strongly reflect
the arguments presented by the protectionists along this debate and
recast them in the framework of a "theory of dependence".

4/ J. Borges de Macedo (1975, p. 304 fls.).

5/ M. V. Cabral (1979, p. 11).

6/ J. Borges de Macedo (op. cit., p. 306).

7/ Retaliation by Britain against imports of Port wine was feared as most
damaging, given the critical situation of the foreign trade deficit. Al-
though the dominant character of Pombal's strategy were import-substitut-
ing, the export sector was not neglected, and an important piece of his
strategy was the formation of chartered companies, with monopoly privile-
ges on overseas trade, fisheries and the production and trade of Port
wine. See J. Borges de Macedo (op. cit., p. 122 fls.).

8/ According to V. M. Godinho (1955, p. 249), the conjunctures marked by
low prices and high wages incentivated the adoption of improved technol-
ogy, in order to reduce production costs and free underpriced imports'
competition.

9/ P. Bairoch (1971).

10/ V. M. Godinho (1971, p. 104).

11/ The crucial institution that made difficult the development of market
relations in agriculture was the "morgadio". It prohibited the sale or
the division by heritage of the estates owned by the nobility. It was
totally abolished only in 1863.

12/ Between 1801 and 1810, Britain imported an annual average of £ 550,000
of Portuguese wine, which represented 60% of her wine imports and 10%
of total Portuguese exports. After 1831, the duties on Portuguese wines
were raised to the level applied to French wines (S. Sideri, op. cit.,
p. 202).

13/
Several attempts were made, in 1845, 1869 and 1880 to introduce a
personal income   tax in partial substitution for the schedular
taxes, such as to guarantee a more responsive and stable fiscal source.
But the British example could not be followed in Portugal, due to strong
opposition from the land and financial capital based interests (A. S.
Franco, 1982).

15/ The British shares in Portuguese trade declined from 61% (imports) and
58% (exports) in 1855 to 42% in 1881. The tariff concessions offered to
France were not extended to Britain until 1876, in retaliation for the

Cobden-Chevalier Treaty's favourable treatment of French wines.
(S. Sideri, op. cit., p. 225).

16/ A. Kenwood and A. Lougheed (1972, p. 74).

17/ In 1890/91, public finance had reached a chaotic state. The budget re-
corded a deficit of 3.1 million pounds, making public debt soar to a
maximum of 140 million. As borrowing became more and more costly, the
government sought relief by unilaterally reducing the nominal interest
of the public debt, which caused foreign creditors to protest loudly and
to propose that a specified share of customs revenue be allocated to the
servicing of foreign debt.

18/ The determination and role of the exchange rate in this context was first
studied by Salazar in "O ágio do ouro" (1918). The comments are made by
M. V. Cabral (1979).

19/ The reduction of duties in goods of metropolitan origin reachead 90
percent in some cases (S. Sideri, op. cit.).

20/ A. Castro, 1973, p. 214.

21/ Between 1890 and 1905, 35% of the capital invested in new corporate firms
corresponded to manufacturing activities (the largest share together with
colonial investment). Almost half of this amount had been invested in
1890-91. Between 1881 and 1917, the steam energy used in manufacturing
increased at an annual rate of 7%. From the growth rates of imported ma-
chinery and raw cotton, M. V. Cabral (op. cit., p. 146) inferred that the
industrial capacity of the country would have doubled between 1890 and
1914.

22/ A. Castro (1975, p. 275).

23/ F. Medeiros (1978, p. 85).

24/ F. Medeiros (op. cit. p. 328 fls.).

25/ F. Medeiros (op. cit., p. 115).

26/ In 1921, the existing duties were kept as a minimum schedule for imports
originating in countries to which the m. f. n. principle applied, and a
maximum schedule was created. In 1923, another tariff was established
with an increased number of items and some specific duties were increased.

27/ A. M. Oliveira Marques (1972, p. 77).

28/ A. S. Franco (1982, p. 1119).

29/ A. B. Nunes and N. Valério (1983).

30/ Antunes Guimarães, the author of the first law on licensing, considered
industrial concentrations to be "anachronisms", which were condemned for
moral, political and defense reasons. See J. M. Pereira (1971, p. 28).

31/ E. Baklanoff (1980, p. 103).

32/ Ferreira Dias (1946).

33/ E. Baklanoff (1980, p. 104).

34/ See below, Section 2.7.

35/ The wording used in the presentation of the Plan suggested also something like the Nurkse-Lewis version of balanced growth, according to which growth should occur simultaneously in all the basic sectors of the economy (agriculture/industry, heavy/light industry) in order to prevent the emergence of bottlenecks in some of them, or excess capacity in others. In fact, the execution of the Plan had no meaningful impact upon the stagnant primary sector or the atomized branches of light industry, thereby leading to a globally more <u>unbalanced</u> economy.

36/ A. Marques (1981, p. 276 fls.).

37/ A. Marques, ibid.

38/ Between 1953 and 1960, consumer prices increased by 9.7 percent only, one of best performances in the OEEC area (X. Pintado, 1964, p. 190).

40/ It is no coincidence that the law on the Nationalisation of Capital has been passed in this period. Foreign capital was welcome insofar as it was deposited in bank accounts, but fear must have among authorities that it could occupy important positions in the national economy.

41/ R. A. H. Robinson (1979, p. 139).

42/ J. B. Macedo (1978, p. 306).

43/ While individual licensing was imposed on an increasing number of products originated in the dollar area or payable in hard currencies, the liberalization rate for EPU merchandise imports was increased to 100% in Portugal and 75% in the Overseas Territories, in 1952. Payments to EPU area on account of many categories of invisibles were freely permitted up to a specified amount. Individual licensing of exports was required whenever the importer was a non EPU country but the settlement was done in an EPU currency. In principle, 30% of the proceeds accruing from exports of specified products to the EPU area were blocked in a no-interest account at the central bank. Their deblocking, or inversely, the raise of that percentage would be done according to the level of the trade balance towards the EPU area. For further details, see IMF <u>Annual Report on Exchange Restrictions</u>, several annual issues, and A. P. Xavier (1970, pp. 80-7)

44/ Tariff rates were especially high in the following branches: paper, cotton and wool textiles, alcohol, caltium carbonate, glass, hats, isolating equipment. See Ferreira Dias (1946).

45/ A. P. Xavier (op. cit., p. 126).

46/ N. Valério (1982).

47/ This position was communicated bilaterally to the Portuguese government in 1957, and made the future position of Portugal look very uncertain for almost one year. See P. P. Cunha (1965) and R. T. Guerra et al. (1981).

48/ For the curious diplomatic details surrounding the admission of Portugal into EFTA, see R. T. Guerra et al. (1981).

49/ See below, Chapter 5, for an analytical treatment.

50/ An exception is X. Pintado (1964), whom we shall make reference to in the next Chapter. Another far-sighted view on this issue was produced by Moura in the report presented by the Corporative Chamber in 1960 on the accession to EFTA (F. P. Moura, 1969, p. 120).Accession would require not only a full reorganisation of existing industries but also the elimination of some traditional instruments of economic policy (export compensations, industrial licensing), that were incompatible with the free trade philosophy. A new, purified economic environment was therefore required, under which" ... only those domestic firms able to resist to the competitive shock will survive and prosper".

51/ According to this slower timetable, Portuguese duties were cut by 20% on July 1960, along with all other import duties. Three 10 percent cuts followed in 1963, 1967 and 1970. Later on, a specific timetable was agreed for the elimination of the remaining duties during the period after 1970.

52/ The other EFTA members accepted such a generous regime, because of the very small size of the Portuguese market for industrial products (3.6% of intra-EFTA trade in 1960), and of a prospect of a shorter life for the Convention, as a global arrangement with the EEC was thought to be nearer than it really was. Besides, Portuguese claims were supported by a technical report favouring one-way preferences, drawn up during the OEEC negotiations for an European free trade area.

53/ A similar argument was put forward by S. Triantis (1961) for the case of Greece.

54/ A. Repolho Correia (1969, p. 294).

55/ Defined as the difference between the fiscal charges on the same product, depending on whether it was domestically produced or imported.

56/ The range of products was very large and included: tobaco, beverages, confectionary, perfums, vehicles, cameras, watches, furs, precious stones, etc. (A.P. Xavier, op. cit., p. 138).

57/ For a description of such commodities, see EFTA Secretariat (1966, p. 91).

58/ V. Curzon (1974 ., p. 206).

59/ Annex C listed as export subsidies the following: direct subsidies to exporters, currency retention involving a bonus on exports, remission in respect of exports of direct taxes, differential pricing policies by government agencies, subsidized export guarantees, subsidized export credits and subsidization of the cost/obtaining export credit. Overcompensation for indirect taxes was added in 1961 by the EFTA Council.

60/ The use of drawback in Portugal dates back to 1848, being implemented to support exports of sugar and tinned plates during the 19th century.

61/ The temporary import regime had been originally conceived to contemplate only those cases of internal circulation of goods, without transformation, for a period of 6 months. It was extended into an export promotion measure by several laws, passed in 1954, 1957 and 1968. See J. M. Barata and A. Schmidt (1978, p. 46).

62/ For a detailed account of the different views on drawback within EFTA and the position held by Portugal on the issue, see V. Curzon (1974, p. 48-50).

63/ EFTA Secretariat (1966, p. 113).

64/ R. Middleton (1975, p. 85).

65/ EFTA Secretariat (op. cit,, p. 115). This "understanding" was extended to the Bergen conclusions, in order to allow for the discriminatory effects of industrial licensing, despite the liberalization of foreign investment.

66/ For the Portuguese participation in the IBRD aid programs, see J. B. Macedo, 1978.

67/ A special status was granted to Portugal, along with other Southern European countries, allowing them to negociáte on a product-by-product and country-by-country basis, without having to apply the reciprocity principle towards more developed countries. (A. Viñas et. al., 1979, p. 1225).

68/ Accession to EFTA did not affect directly the "informal" preferential regime, as the free trade area was stipulated to cover only the European regions of member countries.

69/ J. Silva Lopes (1963).

70/ E. Rocha (1982).

71/ E. Rocha (op. cit., p. 1067).

72/ Between 1960 and 1969, Portuguese net reserves in gold and currencies did not cease to increase from 699 to 1,675 million US dollars, which corresponded in the latter year to 16 months of imports. Foreign public debt during the period did not exceed 266 million US (in 1966), which represented 6.5 percent of GNP. (E. Rocha, ibid.)

73/ Public statement published in Jornal do Comércio, 8/12/59 and Note sent to the Parliament, and published in Diario das Sessões, nº 149, 29/1/60, as quoted in M. Porto (1982, p. 221/2).

74/ J. Donges (1976, p. 70) found an average protection rate of 33.8 percent for Spain in 1959 (including indirect taxes with protective effects), and high levels of dispersion of tariff rates. Still, Spain has to be considered more protectionist than Portugal, as only 38 percent of her total trade was free of QRs in 1960/61.

75/ Cf. A. Tovias (1979) for an empirical investigation of similar tariff patterns in other newly industrialized countries.

76/ Linearly homogenous production functions, price-elasticity of substitution equal to zero between material inputs and between primary inputs, infinite price-elasticities both for export demand and for import supply, perfect competition in the factor and goods markets, total factor mobility within a country, and total factor immobility between countries, full employment and no transport costs. See W. Corden (1971) and Balassa et al. (1971).

77/ It is not surprising, that the loudest protests against the generally high level of duties falling on inputs, were voiced during the Exporters' Conference, organized in March 1965, by the Portuguese Industrial Association (A.I.P.). Together with other measures for export promotion, the Conclusions of the Conference contained the explicit demand for a more liberal regime of duty exemptions, not only for equipment goods but also for raw materials and intermediate products. (Associação Industrial Portuguesa, 1965, p. 9fls).

78/ Decision by the Council of Ministers for the Economic Matters, dated 31 January 1968, published in "Diário do Governo", 1st series, of 21 February 1968.

79/ Fundo de Fomento da Exportação (1969, p. 5fls).

80/ The nominal tariff rates shown in Table/are lower than those in Table B.2 for two reasons. First they were obtained by weighted averaging using import values as weights, which tends to bias the estimates downwards, due to the negative price-elasticity of import demand. Second, they considered collected instead of taxable duties, which also tends to lower the estimated rates, due to the effect of preferential and unilateral reductions.

81/ A more ambitious inquiry into the objective motivations of tariff policy was attempted by M. Porto (1982) using an empirical application of public choice models. He regressed nominal and effective rates of protection on several economic and financial variables, with a cross-section sample of agricultural and industrial sectors.
The price-elasticity of imports was found to be negatively correlated with the nominal rates of protection, which indicates a predominance of fiscal purposes in tariff policy. As to effective rates, the estimated parameters suggest that the wage rate, the corporate size and the export growth rate were the factors that mostly affected tariff policy choice in 1970. The employment share, the corporate employment growth and the growth rate of output revealed a more uncertain effect.

82/ See, among others, I. Little et al. (1970), A. Krueger (1978, 1983b) J. Bhagwati (1978).

83/ Fundo de Fomento de Exportação (1969, p. 12).

84/ Ibid., p. 31.

85/ See A. Viñas at al. (1979, p. 1,266).

86/ A. P. Xavier (1970).

87/ J. M. Barata and A. Schmidt (1978).

88/ J. Donges (1976, p. 92).

89/ A. Viñas et al. (1979, p. 1,279) calculated the average anti-export bias in the Spanish economy at 83.4% for 1970. See also B. Balassa (1971).

90/ A. Marques (1981, p. 328) for details.

91/ OECD Survey, Portugal, 1966.

92/ F. P. Moura (1969, p. 36)

93/ OECD Survey, Portugal, 1966. During the three-year period, industrial employment would grow 2 % per annum, while productivity was expected to grow 7.5 %.

94/ F. P. Moura, ibid. p.40.

95/ Among the authors who disputed the need to abandon industrial licensing, see F. Amaral (1970) and Rego Lima (1966).

96/ For the details about these operations, see J. B.   Macedo (1978, p. 320 fls).

97/ Exchange controls on imports of capital were first liberalized in June 1960, and again in November 1962, by Decree-law nO 44,698.

98/ After 1969 double taxation in Portugal and in the country of origin was avoided by bilateral agreements. However, tax exemptions that were specifically afforded to foreign investment remained an exception rather than a rule.

99/ This estimate is based on the share of intra-firm loans in total financial credit received in 1970/74 (10 percent) and on the supposition that reinvested profits would be insignificant until 1970 given the young age of most foreign undertakings. Cf. S. Matos (1973) for details.

100/ The "signs" of foreign participation were considered to be the following: statements in corporate reports, names of the founders, presence of foreign personnel at the executive level and the participation of foreign firms in the ownership of quotas or shares. After eliminating some of the most doubtful cases, in order to identify those firms that were affiliates to MNEs or show strong evidence of obeying foreign centres of decision, the percentages of foreign firms among the largest in production and trade declines to 25 and 13, respectively.

101/ See J. Dunning (1981) and M. Casson (1979).

102/ The rates of achievement were 73% in 1971, 88% in 1972 and 64% in 1973. For the latter year an exceptionally high rate of growth of programmed investment had been prescribed - 30%. See the OECD Survey on Portugal, 1974.

103/ Whereas the price trend in the first half of the decade (an average rise of 2.4% in the consumer price index) had been among the lowest within the OECD area, the average rate during the second half , 6.1%, was among the highest. In 1972 and 1973 the inflation rate soared to 11.2% and 12.5% respectively.

104/ See R.   Martins (1970).

105/ Examples of such branches were mentioned: optical and professional instruments, electronic goods, machinery, foundries, "upgraded" types of furniture and textiles.

106/ Decree-Law no. 393 of August 5 , 1970.

107/ Footwear, clothing and furniture were completely excluded; the branches that were more heavily represented in the new licensing lists were food and beverages (14 industries), textiles (8), chemicals (22), non-metallic minerals (14), machinery (11) and transport equipment (6). In comparison with the previous list a total of 134 industries were removed from the licensing regime. Two years later another group of 17 industries were transferred from national to territorial licensing. See A. Marques (1981, p.450).

108/ Examples of such projects were the 1200 million dollar industrial harbour of Sines, the construction of conventional and nuclear power plants, the 74 million dollar shipyard of Setubal, the expansion of the steel mills and of the petrol refineries, and new factories for the production of concrete, fertilizers, synthetic fibres, beer, plywood and petrochemicals (see E. Baklanoff, 1980, p.170). Most of these projects were quite demanding in technology and capital. However, it was believed that international competitiveness could be achieved, thanks to the geographical position, scale economies (in connection to the duty-free access to the EEC), the cheap price of energy and the "cheap" money.

109/ Article 35 of the Trade Agreement, published in O.J. no. L301 of December 31, 1972.

110/ R. J. Morrison (1981, p. 141). The Preamble to the Agreement contained specific references to the role that the development of trade relations between Portugal and the EEC could play for the construction of Europe. See also C.R. Fernandes and P. Alvares, 1972 , p. 147.

111/ For a detailed account of the Mediterranean agreements and a discussion of the global EEC policy towards the area, see G. Yannopoulos and A. Shlaim, 1976.

112/ For a more detailed account, cf. R. J. Morrison (1981, Chapters 3 and 5).

113/ J. B. Macedo and P. Krugman (1981).

114/ H. O. Schmitt (1982).

115/ An import surcharge on a vast number of manufactured products and some foodstuffs was introduced in June 1975. The imports of the goods subject to a 30 percent rate fell by 42 percent in the second semester, whereas they had risen by 12 percent in the first semester, relative to identical periods of 1974. Those imports subject to a 20 percent surcharge fell by 53 percent after having increased by 9 percent. See the Report of the Bank of Portugal, 1976.

116/ H. O. Schmitt, op. cit., p. 8.

117/ These speculative operations took several forms: shortened periods for the settlement of accounts in foreign currency by domestic importers; use of Escudos by foreign purchasers to pay for Portuguese exports; delays in the settlement of accounts by foreign importers, while Portuguese exporters resorted to favourable schemes of export credit; artificial stockbuilding of raw materials and intermediate products; acquisition of imported durables by consumers in anticipation for future devaluation, etc. See Report of the Bank of Portugal, 1978.

118/ H. O. Schmitt, op. cit., p. 10.

119/ Ibid. , p. 12.

120/ B. Balassa (1983, p. 113) and Report of the Bank of Portugal, 1980.

121/ See Bela Balassa (1983) and OECD Survey on Portugal, 1982.

122/ According to the import price index, as estimated by the Portuguese Foreign Trade Department.

123/ The goods that were subject to Annex G payed 40% of m.f.n. duties, whereas imports from the EEC payed 60-70% in the year 1974.

124/ According to the new legislation, there was no limit as to the types of equipment or operation that might benefit of the exemption of customs duties. Every firm wishing to import equipment with the purpose of setting up, expanding or reorganizing its production units might obtain a 50% reduction (or 100% in the case of "priority industries".

125/ The same regime was applied to EEC makes, although their quotas for CBU cars were increased by the 1972 Trade Agreement on an annual basis.

126/ The program of the first post-Revolutionary government explicitly recognized the need to "liberalize, in accordance with the country's interests, international economic relations in the fields of trade and .capital movements". And the same government was to sign the OECD Declaration on Imports, Exports and Other Current Account Transactions, on the 30th May 1974. See OECD Survey on Portugal, 1974.

127/ Decree-Laws nos. 720A/76, 720B/76 and 720C/76.

128/ C. R. Fernandes and P. Alvares , 1980, Annex XVII. The establishment of global quotas had a clearly restrictive effect, as shown by the decline of the share of quota-subject commodities in total imports: from 4.3 percent in 1976 to 1.8 percent in 1978.

129/ Bela Balassa et al.(1971).provides quantitative illustrations for a number of less developed countries.

130/ There was another part of the Protocol, dealing with financial aid, that had to be ratified by member states and could be applied only from November 1978 onwards.

131/ These new duties were introduced by Decree-Law no. 109/79 of May 3.

132/ The dismantling of fiscal duties or of the fiscal element thereof was also frozen for a number of products.

133/ There is no explicit reference un the Protocol to such industries. The expression is used, however, in C. R. Fernandes and P. Alvares (1980) and, as the authors took direct part in the negotitations, it is likely that the "age" argument has been present in the spirit of this concession.

134/ Production of polioxypropilen, certain types of varnish, soap powder, glues, artificial resins, glass fibre, aluminium wire and refrigerators. C. R. Fernandes and P. Alvares, op. cit. p. 69.

135/ By 1980, more than 85 percent of industrial imports from EFTA were treated duty-free, 4.1 percent benefited of newly increased duties, and 8.7 percent payed duties that could be maintained until 1985. See C. R. Fernandes and P. Alvares, op. cit., Annex XI.

136/ Another justification may be provided by the fact that we are ignoring here the effects of QRs and of licensing. If these instruments had a stronger impact upon consumer-good industries than upon input-producing ones, then the position of the former in the escalating ranking would be underestimated.

137/ One might add "potentially" as a qualification for this policy. Because a number of selected industries had difficulties finding external markets , partially as a consequence of the 1973 oil crisis, they became rather more inward-oriented than forecast.

138/ The export credit system was revised by Decree-Law no. 289/76 of April 22, and the scheme of direct allowances for export credit was introduced by Notice no. 2 and Regulation 15-4/77/DSOC of February 28, issued by the Bank of Portugal. The export insurance system was revised by Decree-Law no. 318/76 of April 30, and the regime of export development contracts by Decree-Law no. 288/76 of April 22.

139/ See J.M. Barata and A. Schmidt, op. cit., p. 63.

140/ The export credit system was revised later, by Decree-Law no. 481/80 of October 16.

141/ Report of the Bank of Portugal, 1977.

142/ The scheme of fiscal benefits was extended after 1980 under a revised version, introduced by the Law no. 31/80 of July 28 and Decree-Law no. 408/80 of September 28.

143/ J.O. Rendeiro (1984, p. 58) and J.M. Barata and A. Schmidt (op. cit., p. 190).

144/ J.M. Barata and A. Schmidt (op. cit., pp. 46/47 and 182).

145/ One may also argue that the appropriate nominal tariff rate to consider is the sum of the reduced rate applying to imports from "preferred" areas, instead of the weighted average of rates applying to different suppliers.

146/ The interest rate differential in terms of the U.S. dollar has been an important target variable of Portuguese monetary and exchange policy, after 1977. The rise in domestic interest rates combined to the crawling peg brought the interest rate differential down to 5 percent, thereby reducing the incentives to exchange Escudo-denominated assets.

147/ D. Keesing and M. Wolf (1980, pp. 55-69).

148/ The quotas have been managed through the so-called "double import control system: imports into the EEC are only possible after the export license of the supplying country has benn exchanged for an import license of the coutry of destination within the EEC. Thereby the customs authorities keep a constant control of the degree of utilization of the quotas and can proceed to immediate consultations with the exporting coutry's authorities (or ban automatically further imports, in the case of MFA arrangements) if the respective quota is exceeded.

149/ Together with Algeria, Cyprus and Egypt. See R. Pomfret(op. cit., p. 860).

150/ The average coverage of the sample in the sensitive groups was 85 percent in 1972 (declining to 81 percent in 1977), whereas that of the non-sensitive group was 61 percent (51 percent in 1977).

151/ Limited V.E.R. agreements between Portugal and the United Kingdom had been in force for some cotton products since the late sixties. Their coverage was largely extended in an informal "Exchange of Letters", annexed to the 1976 Protocol.

152/ In comparison to the ceilings list of 1972, the following products were added: Non-specified cotton fabrics, discontinuous synthetic and artificial fabrics woven, bed and table linen, and continuous synthetic and artificial fabrics and bags thereof. Women's girls' and children's underwear was withdrawn from the surveillance list.

153/ Cf. G. Ashoff (op. cit.) for a detailed account of this discriminatory treatment. Portugal was especially favoured during the period of the first VER agreement (1978), when "sensitive" exports grew 34.8 percent in average, in constant prices, i.e., much above the projected target rates of 3 and 5.5 percent.

154/ The widespread use of price controls in Portugal is also associated with the policies of capital subsidization and protectionism. In the case of monopolistic or oligopolistic structures, it is justified by the need to avoid that the subsidy (or the tariff) served to increase profits beyond the normal rate, instead of increasing the scale of operation.

155/ Regulations no. 894/80 and 1049/81. See J.O. Rendeiro (1984, pp. 54-55).

156/ Cf. OECD Survey, Portugal, 1984.

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PART II

THE ECONOMICS OF PREFERENTIAL

TRADE POLICY

Economics as a separate science is unrealistic, and misleading if taken as a guide in practice. It is one element - a very important element, it is true - in a wider study, the science of power.

Bertrand Russell

CHAPTER 4

PREFERENTIAL TRADE POLICY
UNDER PERFECT COMPETITION

Broadly defined, a <u>non-discriminatory</u> trade policy gives equal treatment to every trade partner of a specific country. By contrast, a <u>preferential</u> trade policy discriminates between alternative partners in what concerns the level of tariffs and export subsidies, and the size or severity of quotas and other non-tariff barriers. Preferential trade policies are usually classified for analytical purposes (M. Chacholiades, 1978, p. 545) into three basic types:

- A <u>preferential club</u> is an arrangement between two or more countries that reduce partially their import duties on imports from each other, while retaining their original tariffs against the non-club-members. A system of rules of origin is set up, whose purpose is to avoid the penetration of goods originating in the rest of the world (r.o.w.) into a highly protected club member through their temporary importation into less protected members followed by reexportation (trade deflection).

- A <u>free trade area</u> (FTA) is an arrangement between two or more countries that completely abolish trade restrictions among themselves without harmonizing their individual external tariffs. The difference in relation to the preferential club is both quantitative and qualitative. The removal of obstacles, including non-tariff barriers, is total and embraces pratically all sectors of trade in merchandises. A FTA is considered also as a much more permanent form of association than a club.

- A <u>customs union</u> (CU) is a preferential arrangement between countries that abolish all barriers in their mutual trade, and in addition, establish a common external tariff (CET) against imports originating in non-members. The rules of origin are thus made unnecessary, as the CET equalizes duty-wise the conditions of access of foreign goods independently of the importing member country.

Two different purposes have been assigned, separately or not, to the implementation of preferential trade policies. One is to promote regional economic integration, the other is to promote the economic development of the less developed partners.

Regional economic integration may be defined as a situation where all potential opportunities for an efficient allocation of resources are being utilized among countries that are geographically close. It therefore implies a high degree of mobility of goods and factors among integrating countries and the absence of discrimination, in the sense that neither sellers nor buyers inside these countries are influenced by the origin or destination of the product or service being exchanged[1]. Consequently, the preferential removal of the trade obstacles is a necessary condition for economic integration to take place, while the essential meaning of this concept remains connected to the efficiency criteria of the division of labour. Under this concept, sectoral preferential trade policies do not make much sense: one individual sector or branch cannot be fully integrated if others are not, because different costs for the same input would reflect themselves in different prices for the same product, according to location.

Instead of a defined state of affairs, economic integration may be interpreted as the process by which such a state is reached. Preferential trade policies, together with the removal of restrictions to flows of productive factors, constitute what Tinbergen has called _negative_ integration (J. Tinbergen, 1965). Because the effects of autonomous national policies, either macroeconomic or sectoral, continue to affect prices of traded goods and distort the adjustment of production and consumption structures, a further step is necessary. _Positive_ integration is thus required to bring about the coordination, the harmonization, and ultimately the full integration of national policies, with the objective of correcting wrong signals that the market might supply and of strengthening the effects of correct signals. It includes also the establishment of permanent institutions with power over the whole regional area, without which the integrated forms of the free market would be too weak to be effective. The difficulty with this distinction between negative and positive integration is twofold. In the first place, as the mutual removal of trade barriers between integrating countries is not assured to bring about equal gains, some form of compensation has to be given, which implies the simultaneous existance of at least a co-ordinating body or even the implementation of common policies (regional, social, etc.). In the second place, the recent emergence of non-tariff barriers is increasingly blurring the traditional distinction between measures that affect international trade with intention and those that do it unintentionally, thereby making irrelevant the whole point in Tinbergen's distinction. For instance, the establishment of a common code of hygienic and health regulations, while representing a new instrument of integration policy, implies the removal of one of the most effective restriction to the free movement of goods (especially in the chemical and food sectors) among partners, once

tariffs have been eliminated.

The second purpose of preferential trade policies is to encourage an out-ward-looking strategy of development in less developed countries leading to the full expansion of industries in which they possess potential comparative advantages. Tariff preferences are designed to provide extended "infant-industry" protection to l.d.c.s' exports towards rich markets relative to products originating in mature industrialized countries. Besides, they may produce an income transfer in benefit of l.d.c.s, which corresponds to the foregone customs revenue. In general, preferential trade policies directed at development purposes are translated into tariff reductions, that are selective, unilateral and often partial.

The distinction between integration and development purposes is more readily perceived in theoretical terms than in the real world. The Generalized System of Preferences and the Lomé Conventions are clear examples of trade policy instruments with development purposes. However, most of the bilateral agreements between the EEC and the Mediterranean countries, while retaining an overall unbalanced character, include "reverse" preferences to EEC exports in l.d.c.s' markets. These can hardly be justified either on the grounds of development purposes or of greater efficiency in the allocation of resources. Given the generally immature degree of development of domestic industries, these may be "killed off" prematurely, even if they might develop comparative advantages in the future. The European Economic Community and the European Free Trade Association, while pursuing explicitly regional integration purposes, included features that may be interpreted as stimuli to the development of their most undeveloped regions, members or candidates. That is the case, among others, with the Annex G to the Stockholm Convention, in favour of Portuguese industry and the Association Agreements of the EEC with Greece and Turkey.

The theory of preferential trade policy has been made a separate branch of the theory of commercial policy. However, it has been claimed that the basic motivations of regional economic integration lie beyond the reach of rational economic thought. If the ultimate objective of economic integration is an increased efficiency in the division of labour among alternatives uses, why should regional integration be selected when the possibility of worldwide integration is assumed to be available? The latter concerns Pareto-optimal resource allocation throughout the world, and in the traditional framework of international trade theory, with perfect competition ruling in the domestic and foreign markets, it can be proved superior to any form of integration at a more limited scale. This is the central subject of Chapter 4.

Most economists will accept that their only rolé consists in assessing the economic costs and benefits of what is otherwise a strategic decision, made on the basis of political considerations. In the last twenty years, however, the theory of preferential trade policy has investigated the conditions under which two or more trading partners can increase their common welfare by resorting to preferential arrangements. So far, the conclusions have emphasized the importance of assuming specified imperfections in the operation of domestic and foreign markets. This constitutes the basic issue of Chapter 5.

4.1. Framework of analysis and optimaly criteria

a) In the present Chapter, the effects of non-discriminatory and preferential trade policies will be studied in a framework that contains the following assumptions:

i)   In production:

. two factors of production, named K and L for capital and labour, homogeneous, fully employed and in constant supply;

. two goods, named X and Y;

. constant-returns-to-scale production functions.

ii) In demand:

. trade balance equilibrium

. a social welfare function, implying permanent income redistribution in the optimal direction.

iii) In trade:

. no transportation costs;

. internationally immobile factors of production.

iv) Institutional:

. perfect competition in the markets for goods and factors.

Because what is relevant is the aggregate behaviour of producers and consumers, in response to exogenous changes in the price of commodities, certain additional assumptions have to be made concerning individual agents. On the production side, however, it is not required that each firm operates equally with constant-returns-to-scale production functions. If each firm produces one single good (X or Y), the number of firms is sufficiently large, entrepreneurship is not considered a specific factor, every firm has access to

the same technology and no externalities are present, then a production function will exist for each sector enjoying the well-known properties of linearly homogeneous functions. Even if each individual firm operates on a U-shaped / curve of average production costs, the long-run supply curve for the industry as a whole will be horizontal at a level given by the minimum average cost, which is identical for every firm. In this economy, therefore, no firm is large enough to influence market behaviour, and the equilibrium price of X (or Y) will be determined in the long run by the lowest possible cost of each producer of X (or Y). Since all active firms will be running the same factor proportion, a single proportion K_o/L_o exists for the whole industry. It can be demonstrated that a one-to-one correspondence exists between the factor price ratio (w/r), where w stands for the remuneration of labour and r for the remuneration of capital, and the optimum ratio (K/L) employed by each firm in the long run[2]. This means that, once a certain factor proportion K/L is given, each firm is able to optimize its output level at the point where the factor price ratio w/r equals the ratio of marginal productivities of K and L. As a result, an unique output level can be determined for the whole industry as a function of given amounts of L_o and K_o, and such that an increase or decrease of both will determine a proportional increase or decrease of the industry output. X and Y are therefore produced by specified industry production functions in conditions of constant returns to scale. A Paretian optimum in production is said to arise when it is not possible to increase the output of one good without decreasing the output of the other. It can be easily demonstrated [3] that, in conditions of perfect competition, where externalities are absent, the marginal rates of technical substitution in each sector will be identical[4], and equal to the factor wage ratio, and that this equality is a sufficient condition for such production optimum to be reached.

Given certain fixed amounts of K and L for the economy as a whole, still an infinite number of output combinations of X and Y can be produced which maximize the efficiency in their allocation among sectors. Each of these production optima corresponds also to an equilibrium situation in the factor markets, since the factor price ratio will equalize the ratios of marginal productivities of K and L in each sector. However, a single output combination that represents a general equilibrium situation in the commodity markets can only be determined once the behaviour of consumers is known.

Aggregation problems arise too, and with greater severity, on the consumption side. For each individual consumer, it is possible to determine, on the basis of the utility function $U = U (X_1, X_2, ..., X_n)$, where U is an utility index and X_i (i=1, ..., n) are goods, an indifference map on the N - dimensional space, which enjoys the well-known properties of non-intersection, conve-

xity, transitivity and negative slope. Once such a map is given, it is always possible to rank alternative consumptions according to an ordinal utility scale.

The neo-classical framework for international trade theory generally considers it possible to construct similar indifference maps for the community as a whole[5]. They allow us to make an objective judgement between two alternative welfare situations, resulting for instance from two different packages of trade policy. In particular, they enable us to measure the changes in welfare (consumer's surplus). However, the extension of demand analysis in terms of indifference maps to more than one individual is not straightforward, and needs further assumptions.

Given a community of m individuals, characterized by different tastes and incomes, it is not generally possible to compare Situations I and II when at least one member considers his (her) utility to have decreased between I and II, even if all the others consider themselves to be better off after the change. Two aproaches to deal with this problem have been popular among economists: the compensation tests and the social welfare function. E.J. Mishan (1960) summarized the criteria involved in the compensation approach:

. A necessary condition for Situation II to be considered potentially superior to I in terms of community's welfare is that some public authority could compensate the losers in II (or alternatively, that the gainers could "bribe" them), so as to make everyone better off — Kaldor - Hicks criterion.

. A sufficient condition for Situation II to be superior is that it represents more of every good than I, thereby enabling a positive compensation test to be performed under every conceivable income distribution — Samuelson criterion [6].

However, this approach is of little use in most situations arising in international trade theory. Given a fixed stock of productive resources, an infinite number of Pareto-optimal combinations of output can be produced. By definition, none of these can contain more of both goods than the others, and consequently, the Samuelson criterion does not provide an unambiguous ranking of situations in terms of community's welfare. Although the losers in a hypothetical change from Situation I to Situation II (both situations being considered as production optima) could be fully compensated, the same might be done in the reverse change from II to I, which makes the construction of an indifference map an impossible task.

The only possibility left to rank two different (Pareto-optimal) economic situations is to weigh individual gains against losses by means of an ethical judgement. This can be formalized in a Bergson-Samuelson social welfare function of the type: $W = W(U_1, U_2, \ldots, U_m)$, where U_i is an utility indicator

referring to the ith individual, and W is an ordinal indicator of social welfare. On the m - dimensional space, this function is represented by an indifference map, where each social welfare contour, W_o, W_1, W_2, etc, represents a locus of utility combinations as between which the community is indifferent, and can be ranked with increasing levels of social welfare. Therefore, a strong assumption is needed here: that the community is able to exercise a judgement of its own about the way real income is distributed among its members, so as to order different distribution states. However, given the extreme variety of individual ethical beliefs, it seems sensible to ask whether society can always perform such a judgement on its own. K. Arrow addressed to this problem, and formulated the Impossibility Theorem, which proves that, in general, it is not possible to form social preferences from individual preferences. Either one at least of specified logical axioms (complete ordering, responsiveness and independence of irrelevant alternatives) is violated, or the way social preferences are imposed are incompatible with basic democratic principles (dictatorship, imposition by customs)[7].

Despite its logical inconsistency, the social welfare function is usually postulated in most presentations of international trade propositions. It allows the economist to concentrate on the "efficiency" side of the question, while hoping that society is able to handle the "distribution" problem in the best possible way. Samuelson (1956) showed that, if a social welfare function exists, and in addition, if income is always reallocated among individuals in such a way as to maximize social welfare, it is possible to derive a social indifference map with all the usual properties of an individual consumer's indifference map. A social indiference curve (SIC) is defined, therefore, as the locus of all combinations of commodities X and Y which, if distributed optimally among the members of the society, produce the same amount of social welfare. The full demonstration of its properties would take us too far away from the present context[8]. However, a simple illustration of how a SIC is derived is given in Figure II.1.

Figure II.1

(a)   (b)
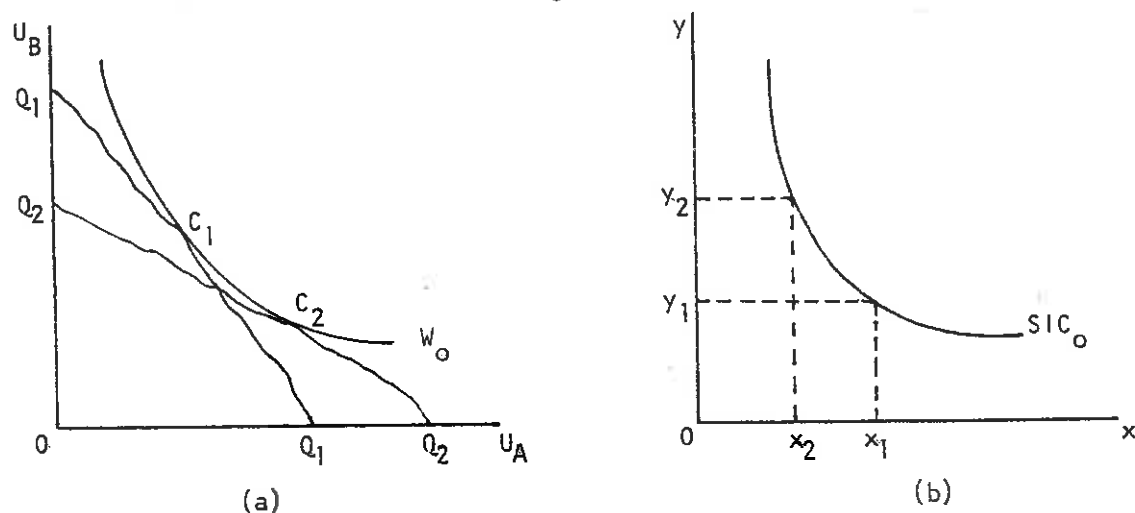
In panel (a), OU_A and OU_B define an utility space for two consumers, A and
B, assumed to constitute the whole of the community. Line Q_1Q_1 is an utility-
possibility curve, which depicts the alternative combinations of maximum
utility levels enjoyed by A and B, once given a specific bundle of goods
X_1 and Y_1, distributed in variable amounts among the two consumers. Line
Q_2Q_2 is another utility-possibility curve, associated to a combination of
the same goods in the amounts X_2 and Y_2. W_o is an indifference curve that
corresponds to a specified level of social welfare. When the community is
endowed with bundle (X_1, Y_1), social welfare will be maximized if income
is redistributed in such a way as to reach the utility combination repre-
sented by C_1, since no other point of Q_1Q_1 reaches superior welfare levels.
With bundle (X_2, Y_2), the welfare maximizing situation will be C_2. Therefore,
the community will be indifferent between these two bundles, in the same way
as an individual would be indifferent between two combinations that give him
the same level of utility. Curve SIC_o in panel b) is derived in the two-
commodity space by adjusting a smooth curve to all points representing every
bundle of goods X and Y enabling the community to reach the specified level
of social welfare. W_o - such as (X_1, Y_1) and (X_2, Y_2). A whole map of SICs can
thus be derived in a similar way, provided that a permanent income redistribu-
tion takes place in the optimal direction[9/].

It can be easily demonstrated[10/] that, in perfectly competitive markets,
consumers maximize their utility when they equalize their respective marginal
rates of substitution in consumption. These are defined as the amount of one
good, say Y, that one consumer is willing to give away in order to obtain
an additional unit of X, and may be represented by MRS_{yx}. Each point on lines
Q_1Q_1 and Q_2Q_2 represents by definition a Pareto-optimal allocation of goods
X and Y among consumers. If bundles (X_1, Y_1) and (X_2, Y_2) are also Pareto-
optimal in terms of resource allocation in production, they are compatible
with perfect competition on both the demand and the supply sides. However,
perfect competition will not be sufficient for society to reach the welfare
optima represented by points C_1 and C_2, in Figure II.1. Public intervention
in the form of permanent income distribution is required. In both points,
the marginal rate of substitution is the same for every consumer and thus
becomes the community's marginal rate of substituion, whose value is indi-
cated by the slope of SIC_o at the relevant point.

b) Once explained the implications of some of the assumptions underlining
our analysis, let us assume then an economy that fully employs its produc-
tive resources in an optimal way. If the production functions are different
in sectors X and Y, the infinity of output combinations that can be produced
under the existing resources and technology can be described on the commodity

Figure 11.2
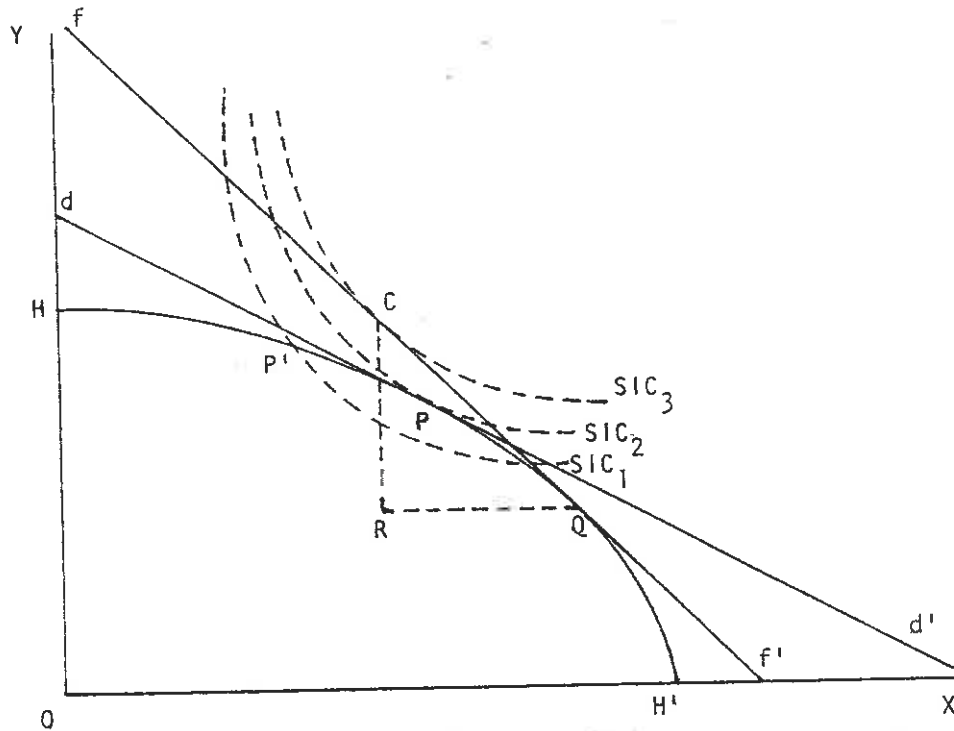
space by a curve such as HH', in Figure 11.2, which is named the production-possibility frontier $\underline{11/}$. The absolute value of the slope at any point of this curve measures the amount of good Y that one has to give away in order to produce an additional unit of X. This amount is called the opportunity cost of X (in terms of Y) or the marginal rate of transformation of Y into X - MRT_{yx}. Once defined an indifference map for social welfare with the conventional properties, represented in Figure 11.2, by curves SIC_1, SIC_2 and SIC_3, an unique output combination can be determined which maximizes welfare for the community. It will be that point where the PPF reaches the highest level of social welfare — point P in Figure 11.2. This point represents a Pareto optimum both for consumers and for producers. Being a tangency point between PPF and SIC_2, it verifies the equality between the marginal rates of transformation and of substitution in consumption. It is also an equilibrium situation, where quantities of X and Y produced by the economy are exactly equal to quantities demanded by consumers, the equilibrium price being represented by the absolute slope of tangency line dd', which expresses the price of X in terms of Y. If, for a moment, the economy produced an output combination represented by point P' on the same PPF, the marginal cost of X in terms of Y would be lower than the marginal rate of substitution consumers would be prepared to accept, which would lead producers to transfer resources from the production of Y to that of X until the following identity were reached:

$$MRT_{yx} = MRS_{yx} = \frac{P_x}{P_y}$$

This is a third condition for the establishment of a Pareto-efficient state in the whole economy, considering simultaneously the production and the consumption sides — it is called the "exchange" or the "top level" criterion.

In a situation of complete autarchy, consumers have to consume exactly the same combination of X and Y that the economy produces. So, the production-possibility frontier is also a consumption-possibility frontier. This coincidence disappears when the possibility of trade with the outside world is allowed. Let us assume an exogenously given price ratio prevailing in the world market, different from the domestic ratio. In Figure II.2, the absolute slope of line ff' represents the world price ratio, also called terms of trade. If producers are left entirely free to adjust quantities supplied to the world prices, which now have become the domestic prices as well, they will produce enough of X (or of Y) to equalize their opportunity cost to the world price. The production equilibrium will therefore shift to point Q, involving a specialization in good X. This is the sector holding comparative advantages in our economy, since

$$\frac{P_x}{P_y} < \frac{P_x^*}{P_y^*}$$

where the asterisk refers to the world prices.

With trade, consumers are no longer limited by domestic production possibilities. They are free to choose any combination along ff', i.e. they are able to transform any amount of the export good X into a correspondent amount of Y, in accordance with fixed terms of trade. For this reason, the absolute slope of ff' is also called the marginal rate of foreign transformation of Y into X — MRT_{yx}^f —, and the line itself can be conceived as a consumption-possibility frontier.

The welfare maximizing combination is found by consumers when the marginal rate of commodity substitution equals the international price ratio. Given a specific social indifference map, that combination is represented by the point of tangency between the exchange line and a social indifference curve — point C in Figure II.2.

So, a fourth Pareto optimality criterion must be stated when the possibility of free trade is introduced: The marginal rate of foreign transformation must equal the marginal rate of commodity substitution and the marginal rate of domestic transformation. In symbols:

$$MRT_{yx}^f = MRS_{yx} = MRT_{yx}^d = \frac{P_x^*}{P_y^*}$$

A clear gain arises in the free trade situation relative to autarchy: The consumption equilibrium shifts from a lower to a higher social indifference curve, which under our assumptions represents an unambiguous welfare improvement for the community. The gain is not dependent however on the particular shape of the indifference map, or on the autarchy production equilibrium. Any point on the consumption-possibility frontier provided by trade represents a bundle containing more of both goods than some points on the production-possibility frontier, but the reverse is not true. No point on HH' can be considered superior in terms of welfare to any point on ff'.

4.2 - The effects of tariff protection

a) In the framework just described, where all Pareto criteria are fully satisfied and the terms of trade are exogenously given, the use of a tariff is always detrimental to welfare. To understand why, let us assume an ad valorem tariff on imports of Y. The immediate effect will be to increase P_y by a margin equal to the tariff rate $\underline{t}$: $P_y = (1+t) \, p_y^*$. In relative terms, and maintaining the assumption of fixed terms of trade, we have:

$$\frac{P_x}{P_y} = \frac{P_x^*}{(1+t) \, P_y^*} = \left(\frac{1}{1+t}\right) \frac{P_x^*}{P_y^*}$$

The domestic price of X will be lower than the world price ratio, as a result of the tariff being imposed on Y. The use of an export subsidy would have symmetrical effects. Assuming that the subsidy would benefit exports of X at an ad valorem rate of $\underline{s}$, its immediate effect would be to lower the export price relative to the domestic price of X by a margin equivalent to s: $\frac{P_x}{1+s} = p_x^*$. In relative terms, we obtain:

$$\frac{P_x}{P_y} = (1+s) \frac{P_x^*}{P_y^*}$$

This time, the domestic price of Y will be lower than the world price ratio, as a result of the subsidy on the exports of X. As the effects of tariff and subsidies are symmetrical, the analysis will be conducted in terms of tariffs, the extension to the case of export subsidies being straightforward.

In figure II.3, the slope of line ff' represents the terms of trade, and initially the economy produces at P_o and consumes at C_o, with welfare being indicated by indifference curve SIC_3.

Figure II.3
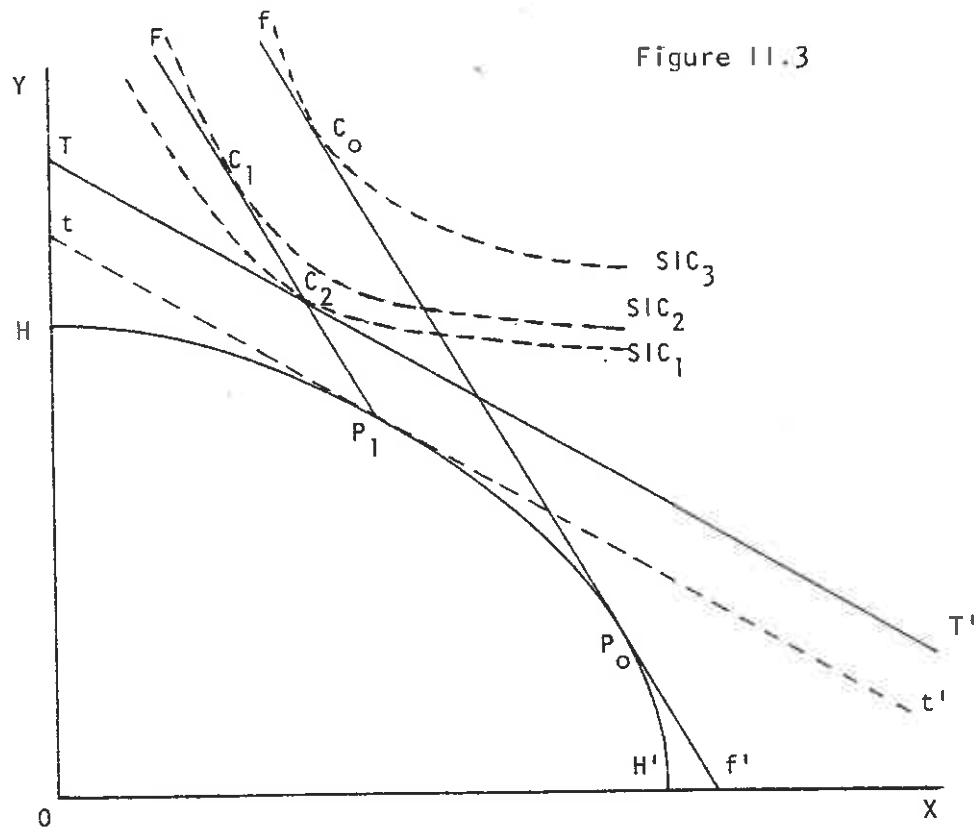
The introduction of a tariff on imports of Y will increase its domestic price to the value indicated by the slope of line tt'. This increase will enable uncompetitive producers of Y to enter the market, and the economy will shift resources from the production of X (where it holds comparative advantages) to that of Y. The new equilibrium will be established at point P_1 where the domestic price equals the domestic marginal rate of transformation.

The fiscal effect of the tariff will be disregarded in the present analysis. It will be assumed that Government expenditures are satisfied by means of non-tariff taxation, and consequently customs revenue will be redistributed among consumers who will spend it according to their preferences. Introduction of fiscal considerations in the present general equilibrium framework could be made through the hypothesis of a specific preference function for public consumption, but this would add very little to our main purpose of study.

If consumers still faced world prices, i.e. were unaffected by the tariff on imports, they would dispose of the available production of X and Y (given by point P_1), and exchange X for Y in the world market until they reached the optimal condition $\frac{P^*_x}{P^*_y} = MRS_{yx}$. In Figure II.3, the consumption equilibrium would be established at C_1, where FP_1, a line with the same slope as ff', is tangent to curve SIC_2[12/]. This is the situation

that would arise if, instead of a tariff, a production subsidy with equi-
valent rate were attributed to the producers of Y, while the consumers were left
free to consume at the given terms of trade.

A tariff, however, increases the price of Y both for consumers and producers.
The consumption equilibrium must satisfy two requirements:

- that the domestic price equals the marginal rate of substitution in
consumption:

$$\left(\frac{1}{1+t} \right) \frac{P_x^*}{P_y^*} = MRS_{yx}$$

- that trade between the home economy and the rest of the world, which
is carried out at the terms of trade $\frac{P_x^*}{P_y^*}$, is in equilibrium.

In Figure 11.3, point C_2 satisfies both requirements. It is a point of
tangency between a social indifference curve (SIC_1) and a line with the same
slope as tt' (TT'), and is located on FP_1, which represents now the consump-
tion-possibility frontier.

The total welfare loss resulting from the imposition of a tariff is illustrated
by the shift of the consumption equilibrium from SIC_3 to SIC_1. Two distinct
components of this total welfare loss can be distinguished:

- A production loss is associated with the shift of the output combination
from P_o to P_1, involving a correspondent shift of the consumption locus from
C_o to C_1, along the income-consumption curve. This loss is incurred also by a
production subsidy to Y.

- A consumption loss is associated with a new price ratio facing domestic
consumers and is represented by the shift of the consumption locus from C_1
to C_2, with a decrease in welfare. This type of loss is attributable only to
commercial policy.

b) Therefore, the use of tariffs can never be justified to increase welfare as far
as the economy presents all the requirements of a Pareto-optimal state. This
is no longer the case when we abandon the supposition of constant, exogenously
determined terms of trade, that is appropriate when the object of analysis is
a small economy. When the economy is large enough to influence the terms of
trade through the quantities it is willing to trade, one can easily demons-
trate that:

i) Not all the four Pareto optimality criteria are observed;

ii) The use of a tariff at an optimal rate by a country raises its welfare
to a maximum, not obtainable by any other policy means, if the other country
does not retaliate.

Figure II.4
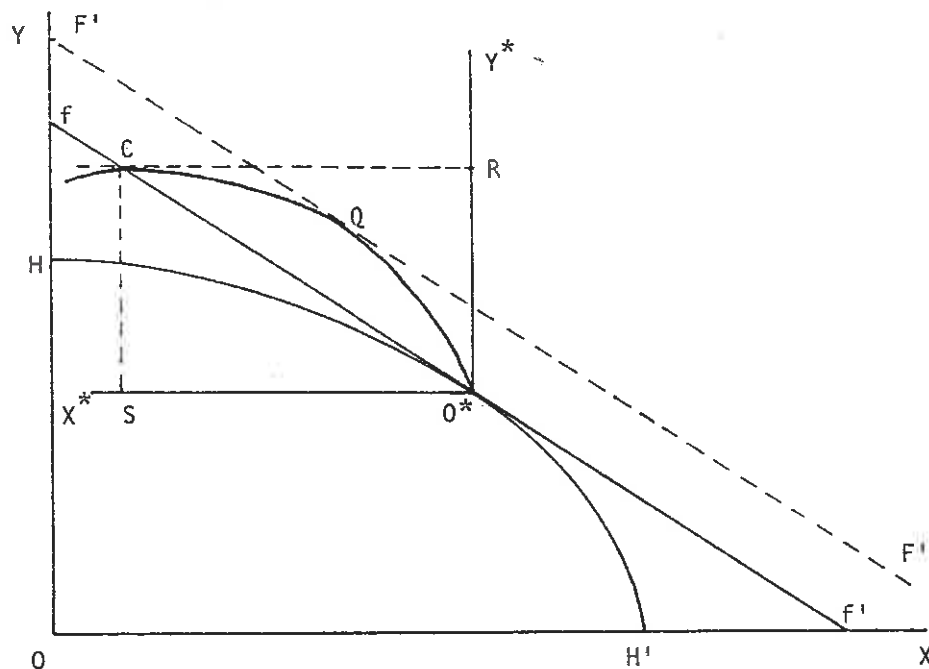
In Figure II.4, curve HH' is the production-possibility frontier of home country A, and in free trade with the rest of the world, the terms of trade would set at a level indicated by the slope of ff'. A's producers reach an efficient state at point 0^* and the economy trades somewhere along line ff'. Under the previous assumption of A being small, the consumption equilibrium would depend only on its own consumers' preferences — the outside world would be so large that it could purchase (sell) any quantity of X (of Y). Now, under the large country assumption, the amounts of each good that the outside world, to be described under an hypothetical "country B", is willing to trade, have to be also taken into consideration. In Figure II.4, curve 0^*QC is a Marshallian offer curve drawn into a two-axis system where axes 0^*X^* and 0^*Y^* represent the quantities traded of goods X and Y, respectively. Each point of B's offer curve indicates the quantity of Y (of X) that country B wishes to export (to import) at each different level of the international terms of trade. If the equilibrium terms of trade between A and B are reached at ff', then point C will show the equilibrium trade situation, where 0^*R units of good Y are sold by country B to A, in exchange for 0^*S units of good X. However, this situation is not optimal in terms of A's welfare, despite being normally reached under free trade. At C, each unit of Y imported by A costs $\frac{0^*S}{0^*R}$ units of X; this is the <u>average</u> rate of foreign transformation of X into Y (ART^f_{xy}) which in our case equals the domestic price ratio. However, the <u>marginal</u> rate of foreign transformation of X into Y, that is defined as the number of units of X that A has to supply in order to obtain an additional unit of Y through importation, has a different value at C in Figure II.4.

Being measured by the slope of the tangent to the offer curve of the foreign country at this point, MRT^f_{xy} has a value close to infinity in the example shown. So, each additional unit of Y becomes more expensive for A when imported than when it is produced locally. This is contrary to the fourth criterion of optimality and thus describes a sub-optimal situation where:

$$MRS_{xy} = MRT^d_{xy} = \frac{P_y}{P_x} = ART^f_{xy} < MRT^f_{xy}$$

c) In order to retrieve full Pareto optimality, it is necessary that all marginal rates have identical values. Apparently, that would occur at point Q, where B's offer curve has a slope that is equal to the slope of ff'. However, this cannot in principle represent an equilibrium situation, since different quantities traded between A and B are necessarily associated with different terms of trade. This relationship can be clearly brought forward in a diagram that links together the offer curves of A and B, as in Figure II.5. Here, OA and OB are their respective free trade offer curves which result in equilibrium terms of trade given by the slope of vector OE (not drawn), which corresponds to line ff' in Figure II.4, as well as equilibrium point E corresponds to C. In Figure II.5 we also represented two curves (TIC_1 and TIC_2) belonging to the trade indifference map of country A. A trade indifference curve (TIC for short) is defined as the locus of all combinations of traded quantities of X and Y that provide country A with a specified and constant level of social welfare. It is not necessary to review here

Figure II.5

A's imports of Y
B's exports of Y

A's exports of X
B's imports of X
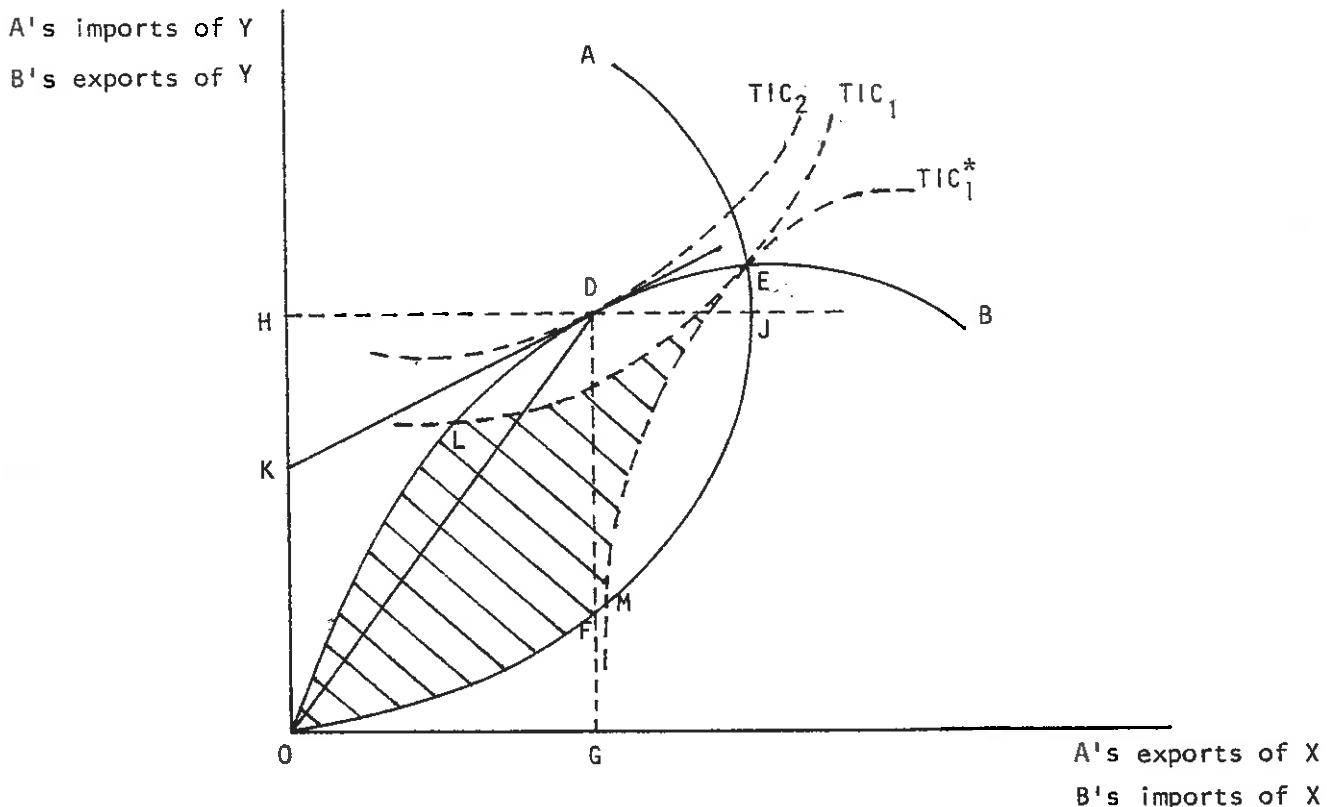
the process by which a trade indifference map may be constructed [13]. It suffices to say that each point on $TI\tilde{C}_1$ is equivalent to a particular point along a correspondent social indifference curve, say SIC_1, and the equivalent points lie on equal slopes. It therefore follows that movements along TIC_1 trace the/different quantities that A is prepared to export in exchange for varying quantities of imports (at varying relative prices), so that A is left on the same level of social welfare. A movement from TIC_1 to TIC_2 represents an improvement in A's welfare, as in general any movement in the NW direction, since it corresponds to moving to higher SICs. The free trade equilibrium given by point E is a sub-optimal welfare state from A's standpoint, and the highest welfare level that A can reach is the one associated with TIC_2, which is tangent to curve OB at point D. This latter can be reached by means of an/appropriate tariff policy. If country A taxes the imported commodity Y at the rate $\dfrac{DF}{FG}$ it will be requiring DF more units of Y in addition to the FG units that country B would be ready to exchange for OG of exports [14]. The imposition of a tariff produces a new offer curve for A that lies between the original (tariff free) offer curve (OA) and the vertical axis. In the present case, the tariff-ridden offer curve (not drawn) would cross OB at point D. This is the new equilibrium point, the new terms of trade being given by the slope of vector OD. The optimum tariff, that in our case has the rate DF/FG, is thus the tariff that maximizes the welfare of the country imposing it. It can also be said that t_o reestablishes the full optimality criteria expressed in marginal terms:

$$MRS_{xy} = MRT^d_{xy} = MRT^f_{xy} = \frac{P_y}{P_x} = (1+t_o) \frac{P^*_y}{P^*_x}$$

In Figure II.5, the slope of vector KD describes the domestic price in A, which, in the absence of domestic distortions, equals MRS_{yx} and MRT^d_{yx} in the same country. We may say this in view of the properties of the TICs. As the same vector is tangent to OB at point D, its slope represents also the MRT^f at that point. Therefore, the tariff t_o opens a wedge between the domestic and the international price ratio, that corrects the initial distortion and allows the marginal criteria to be fulfilled.

We may derive an expression for the optimum tariff in general terms. At point D, the domestic price ratio is given by $\dfrac{HD}{KH}$, and the international price ratio by $\dfrac{HD}{OH}$. Remembering the basic relationship between the two prices, we may write for point D, where the optimum tariff is t_o:

$$\frac{HD}{KH} = \frac{HD}{OH} (1+t_o)$$

and $\qquad t_o = \dfrac{OH}{KH} - 1$

The inverse is:

$$\frac{1}{t_o} = \frac{KH}{OH-KH} = \frac{OH-OH+KH}{OH-KH} = \frac{OH}{OH-KH} - 1$$

Now, the expression $\dfrac{OH}{OH-KH}$ measures the elasticity of import demand of country B at point D[15/]. Therefore, we may write for the optimum tariff:

$$t_o = \frac{1}{E^D - 1}$$

The optimum tariff is equal to the inverse of the elasticity of the foreign demand for imports minus one at the point where the domestic social welfare can be maximized. Two important implications follow. In first place, if the foreign elasticity is infinite, the optimum tariff is zero, which confirms the proposition that a country facing a perfectly elastic foreign offer curve (i.e. small) cannot gain from tariff imposition. Secondly, the more elastic the foreign offer curve is, the lower the optimum tariff will be.

The superiority of tariff policy in achieving higher welfare levels when the source of distortion is foreign can be qualified in several ways. In first place, not every tariff rate may be said to improve welfare relative to the free trade situation. As we saw earlier, the imposition of a tariff by A displaces its offer curve in the NW direction, with the origin still in point 0. It is clear from Figure 11.5 that if the tariff-ridden offer curve intersects B's offer curve somewhere between point E and L, welfare will be improved relative to initial free trade. But if the tariff rate is high enough to locate final equilibrium somewhere between the origin and point L, a lower level of welfare will be obtained. This is so, because any tariff intervention by A under the present assumptions brings forward two conflicting outcomes: it improves the terms of trade of the tariff--imposing country, which is beneficial for its welfare; and it decreases the amount of trade, which is detrimental. The height of the tariff rate and the particular shape of the foreign offer curve jointly determine which of the two effects is dominant.

Secondly, the cost of tariff intervention by A is entirely borne by the foreign country, as its welfare deteriorates from the level indicated by TIC_1^* to a lower level, that is necessarily associated to point D. So far the hypothesis of retaliation by country B has been left out of consideration. This is a realistic assumption to make, if B consists of a heterogenous group of countries incorporating the "outside world" that are unable to co-ordinate their commercial policies. However, if B is thought of as a

small group of homogenous countries, or a single large partner, it might well retaliate to A's action, either by imposing an optimum tariff on imports of X, or by taxing its exports of Y. The immediate effect would be to shift B's offer curve in the SE direction, so that the terms of trade would shift in B's favour, and the welfare loss previously induced by the imposition of the tariff by A would be partially compensated. This action, however, might trigger off a series of recipocal retaliatory measures on both sides, the result of which would be a decrease in mutual trade. If the final equilibrium situation arising from mutual retaliation were located inside the shaded area in Figure II.5, both countries would be worse off than in the original free trade situation. If it were located inside the area defined by curves OA and TIC_1^*, the final outcome would be beneficial only for country B; and if located inside the area defined by OB and TIC_1, A would be better off than in free trade, but not B.

From the foregoing discussion, some important conclusions can be derived in what concerns the motivations and effects of tariff reduction. For small countries, total elimination of tariffs is the optimal policy, if no domestic distortions are present. Therefore, there is no economic justification for their participation into the tariff bargaining process that is current in multilateral negotiations. The same cannot be said about large countries. Unilateral tariff reduction means a deterioration in welfare and a certain gain to the outside world. Observe Figure II.6, where OA and OB are the free-trade offer curves of countries A and B, and OA^T and OB^T are their respective tariff-ridden offer curves. E is the free trade equilibrium point and F depicts a tariff-cum -retaliation final situation — when it is reached, neither country gains form further tariff imposition, since each country's offer curve is tangent to the other's TIC. Starting from point F, it can be clearly seen that if A adopts a unilateral tariff reduction, it stands to loose since such action would take it to a TIC to the SE of TIC_o, and vice-versa for an identical action by B. However, a joint tariff reduction might result in the new offer curves intersecting inside the shaded area, thus moving both A and B to higher TICs[16/].

Consequently, there seems to be some rational grounds for the tariff bargaining process that takes place under GATT, on the part of the so-called "large countries". One specific country will be benefited by reducing or eliminating its tariff, provided its largest partners are willing to do .likewise. The same explanation however cannot apply to "small countries", i.e. those facing a perfectly elastic foreign offer curve. In this case, tariff bargaining has to be explained, if rational decision-making is to be assumed, by the introduction of externalities or "public good" considerations, along the lines developed below in Chapter 5.

Figure 11.6
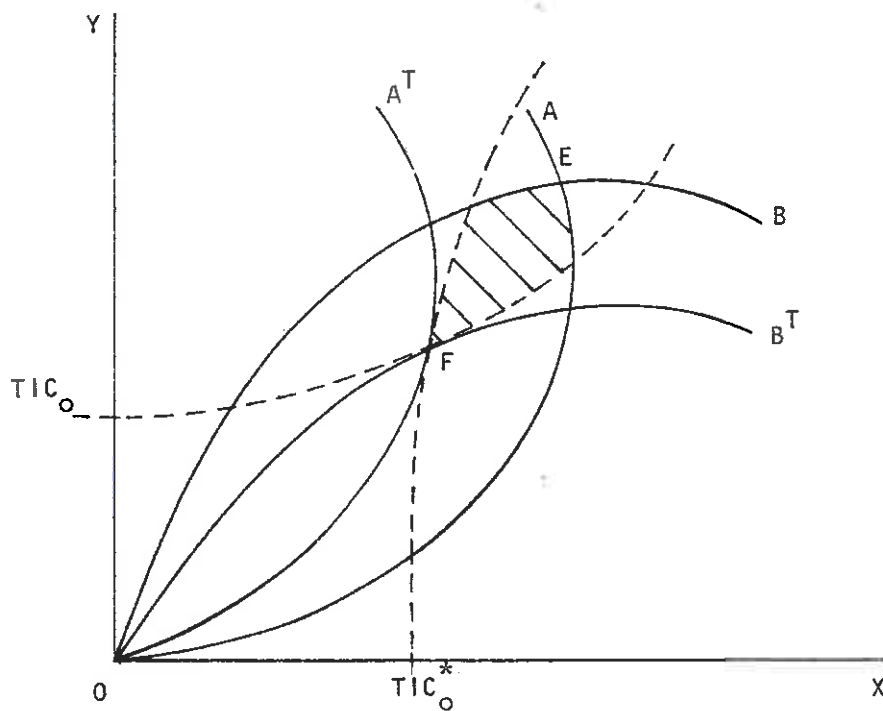
4.3. Preferential trade policy under Pareto-optimal conditions

a) In the previous Section we concluded that a perfectly competitive economy
of small size suffers a welfare loss when it changes its commercial policy
from free trade to tariff protection, and that   this   is separable into
a consumption and a production loss. How does preferential trade policy com-
pare with these alternatives? The question has attracted some attention since'
the early fifties, especially in what concerns the effects of the formation
of customs unions. It is in this specific context that we shall examine the
problem in the present Section, leaving to the next one the analysis of
the relevant differences between customs unions and free trade areas.

In his pioneering work, J. Viner (1950) showed that the formation of a
customs union can result in either of two different effects:

   - One is a consequence of the removal of duties which previously had
effectively operated as a barrier to trade between the member countries
of the union. It consists of a shift from high-cost domestic production
to low-cost production in a partner country. This result, that the free
trader would approve, was called trade creation.

   - The other is a consequence of the fact that union members will replace
tariff-ridden imports from third countries with imports from preferred union
partners. It consists of a shift from low-cost external supplies to high-
cost partner's production. This result was called trade diversion, and being
contrary to free-trade resource allocation, would be approved by a protec-

tionist.

In the first case, welfare improves as a result of a better resource allocation; but in the second case, welfare deteriorates as resources shift to higher cost locations. The concepts of trade creation and trade diversion remained as the cornerstone of the theory of preferential trade policy. However, Viner's approach is based on the Ricardian model of trade, which ignores the role of demand in determining trade equilibrium and postulates constant opportunity costs. Further refinements have progressively lifted these constraints so as to cast definitively the theory into a general equilibrium framework.

In almost simultaneous contributions, R. Lipsey (1957) and F. Gehrels (1956) studied the effects of customs unions with the help of a model where the role of demand was explicitly considered, while retaining the constant cost assumption. They concluded that a trade-diverting customs union would not necessarily lead to welfare deterioration as Viner's conclusions implied. The formation of a customs union may result either in higher or in lower welfare for the acceding country; /all it depends on whether the terms-of-trade loss arising from the shift to higher-cost location is compensated or not by the gain for consumers that arise from their ability to adjust purchases to a tariff-free import price. The height of the original tariff and the cost differential between union partners and outside suppliers are the relevant variables in determining the welfare outcome of the trade-diverting customs union. This type of analysis was later reviewed and refined by J. Bhagwati (1971).

However, H. Johnson (1974) made it clear that the Lipsey-Gehrels conclusion depended upon a certain definition of trade diversion, referring to a diversion of the locus of production for an unspecified quantity of trade. In this sense, trade diversion includes both the welfare-decreasing shift of initial trade to a higher-cost location and the welfare-increasing expansion in trade due to substitution of imports for domestic goods, and may obviously be welfare-increasing on balance. But, if the definition of trade diversion is restricted to the shift of initial trade, and the consumption gains arising from increased imports are treated as trade creation, then trade diversion will be always welfare-decreasing, and the net effect of a CU depends on the balance of trade creation and trade diversion.

b) The effects of preferential trade can be studied in the most general way, by assuming increasing opportunity costs, as well as a social indifference map, as in the previous section. Let A be the home economy, with a production-possibility frontier represented by curve HH', in Figure 11.7, which imposes

Figure 11.7
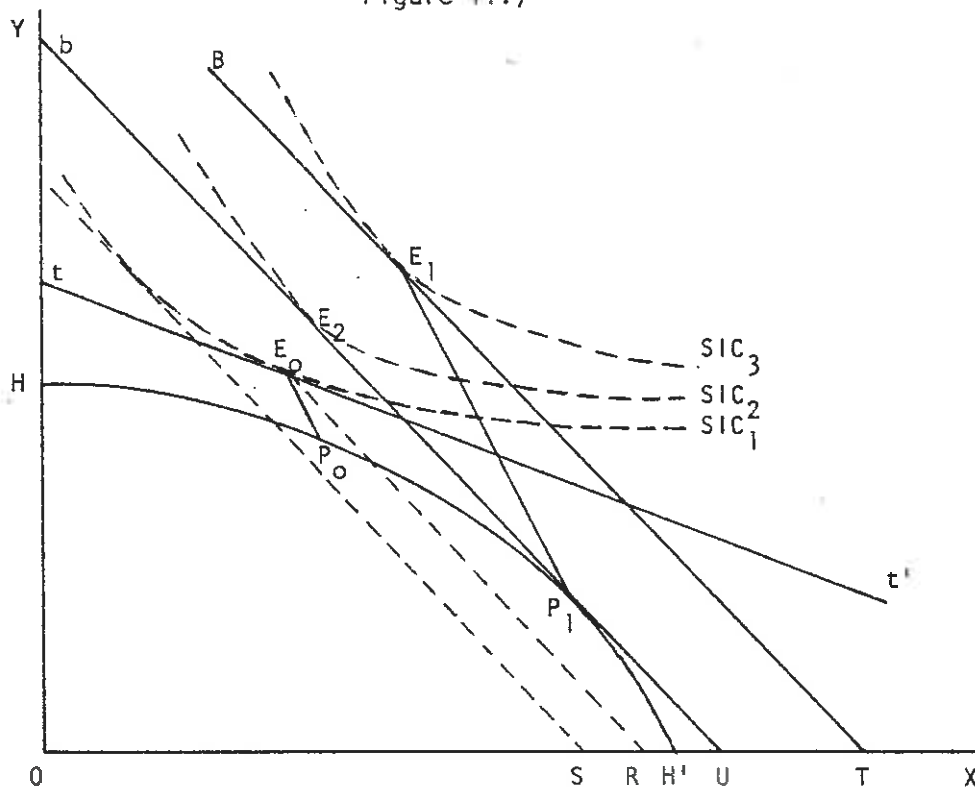
a non-discriminatory tariff on imports of good Y, originating in the world's lowest cost supplier, designated by "country C". The slope of line tt' indicates the domestic price (inclusive of the tariff), while the slope of vector E_0P_0 indicates the terms of trade between A and C. For reasons that were already explained, production initially takes place at P_0 and consumption at E_0, on SIC_1.

Now, let us suppose that a preferential trade arrangement takes place between countries A and B, the latter being a not-so-efficient producer as country C. For country A, the final outcome of such arrangement is characterized by full tariff elimination for products originating in B and a tariff rate on imports from C, that is high enough to make B's products cheaper than C's on the home market, transport costs being neglected. For the moment, we shall ignore the question whether this tariff rate is autonomously fixed by A (free trade area) or set in common agreement with B (customs union). This distinction is left to the next Section.

This move towards a preferential trade arrangement may be split into two different steps: The first step is a unilateral, non-discriminatory tariff reduction by a margin equal to the difference between the export prices of B and C. The second is the imposition of a higher tariff rate on C's products only, so as to make them more expensive than B's on the home market.

After the first move has been completed, the domestic price of Y will decrease to a level that is given in Figure 11.7 by the slope of bU. Production now takes place at point P_1, resources having been pulled out

from the production of Y to that of X. As the tariff rate is the same for
every foreign producer, trade will be carried out with the lowest cost
supplier, which is C, at its respective terms of trade. The consumption
point now is E_1, which is a tangency point between an indifference curve
and a line with the same slope as bU'. This point is clearly associated
with a better situation in terms of welfare than E_o, as indicated by the
the shift from SIC_1 to SIC_3. This welfare gain is the   joint   result of
two types of trade creation effects: Production effects, that arise from
the reallocation of resources towards the sector with comparative advan-
tages; and consumption effects, that arise from the partial removal of re-
strictions to the consumption of Y (whose domestic price is now closer to
its "true" international price).

As a result of the second move, country A will be supplied by high-cost
producers in country B, and its terms of trade will therefore deteriorate,
without affecting the domestic price which will remain at the level given
by bU. For this to happen, it is necessary that B's supply be perfectly
elastic and that the tariff reduction equals exactly the cost differential
between B and C. Production equilibrium remains at P_1, but the real income
of the home economy declines as a result of the worsening terms of trade.
Consumption will now be located at point E_2, on the tangency between SIC_2
and line bU. A is worse off under preferential trade with B (SIC_2) than under
a non-discriminatory, albeit reduced, tariff (SIC_3).

We can now conclude, as C. Cooper and B. Massell (1965 a) did, that if the
formation of a preferential trade area is split into a non-discriminatory
tariff reduction and a discriminatory tariff increase:

   - the tariff reduction is the sole source of gain in social welfare,
accounting for trade creation effects;

   - the setting up of a preferential trade arrangement necessarily results
in pure trade diversion and a deterioration of social welfare.

These conclusions hold independently of the particular assumption and con-
ventions included in the illustrative model of Figure II.7. Here, the final
outcome, as depicted by point E_2, is shown to be superior to the initial
situation. But the opposite pattern might result as well, depending on the
particular values chosen for the variables. Also, if B's supply were consid-
ered imperfectly elastic, the deterioration of A's terms of trade would be
larger than the initial cost differential between B and C suggests. Finally,
the convention that the tariff reduction is restricted by this cost differ-
ential is made in order to bring out the main issues more clearly, and to
simplify the graphics. If it were assumed full tariff removal in the first
move, a free trade situation would obtain with consumption equilibrium sit-

uated NE of E_1, and the shift towards E_2 would imply not only an income loss but also a different domestic price facing consumers.

c) Changes in social welfare have been presented in terms of shifts over a social indifference map, which gives us an idea about the direction of changes, but not a precise measurement of their magnitudes. The Hick's method of compensating variation may be used in order to translate welfare changes into measurable concepts, when comparing non-discriminatory versus preferential trade policies. Here, the gains (losses) from preferential trade are measured by the maximum amount of the export good that could be extracted from (added to) the economy under preferential trade, while leaving it free to trade at the intra-area prices, without making it worse off (better off) in relation to a non-discriminatory trade situation. The fact that units of the export good are used as "numéraire" reflects mainly the welfare variations from the consumer's point of view.

In Figure II.7, if country A were completely specialized in the production of X, it would need to produce an amount equal to OU in order to reach consumption locus E_2, which is the final outcome of the preferential trade arrangement, by trading X against Y at the terms of trade given by bU . If the output of X were reduced by an amount equal to SU units, the same economy might reach the welfare level corresponding to SIC_1, i.e. the level that pre-existed to the arrangement, still trading at price bU . We may note that the broken line starting at S is tangent to SIC_1 at some point NW of E_o. SU is therefore the compensating variation that measures the welfare gain asso-
ciated to the change from/the initial non-discriminatory tariff to preferential trade with country B. This net result may be separated into their three different components:

- The consumption effect is measured by distance RS, which is the difference between the amount of X required to reach equilibrium point E_o, OR, and the output of the same good required to reach the same welfare level as before, but without consumption constraints, OS.

- The production effect arises from the shift of resources towards production of X, which enables consumers to purchase combination E_1. At the intra--area terms of trade, OT units of X are required in order to trade them in exchange for Y and reach E_1. If an amount equal to RT units of X were subtracted from OT, consumers would reach the initial consumption bundle E_o; therefore, RT measures the production effect.

- The trade diversion effect is measured by distance TU, which represents the amount of X that it would be necessary to add to output OU, corresponding to the final situation E_2, in order to reestablish the welfare level reached

with combination E_1.

The total welfare effect obtains by algebraic sum of the three effects just mentioned: RS + RT - TU = SU.

d) The measurement of welfare gains and losses from alternative trade policies is usually studied with the help of linear supply and demand schedules. Being more popular in the partial equilibrium context, where the aim is to study their effects on a particular market, they may also be used for general equilibrium, provided that the relevant information is translated into a space defined by price and quantity of one good only. In Figure 11.8, we have the units of the import good Y measured along the horizontal axis and its price in terms of X, $\frac{P_y}{P_x}$, measured along the vertical axis. The quantity of X, that was adopted as the measuring yardstick for welfare changes, or simply as the income, is given by the relevant area in each case — the area being q_y times $\frac{q_x}{q_y}$ (or $\frac{P_y}{P_x}$), it yields q_x.

In the same Figure, SS' is a domestic supply curve derived from the production-possibility frontier in Figure 11.7[17/]. It relates the domestic output

Figure 11.8
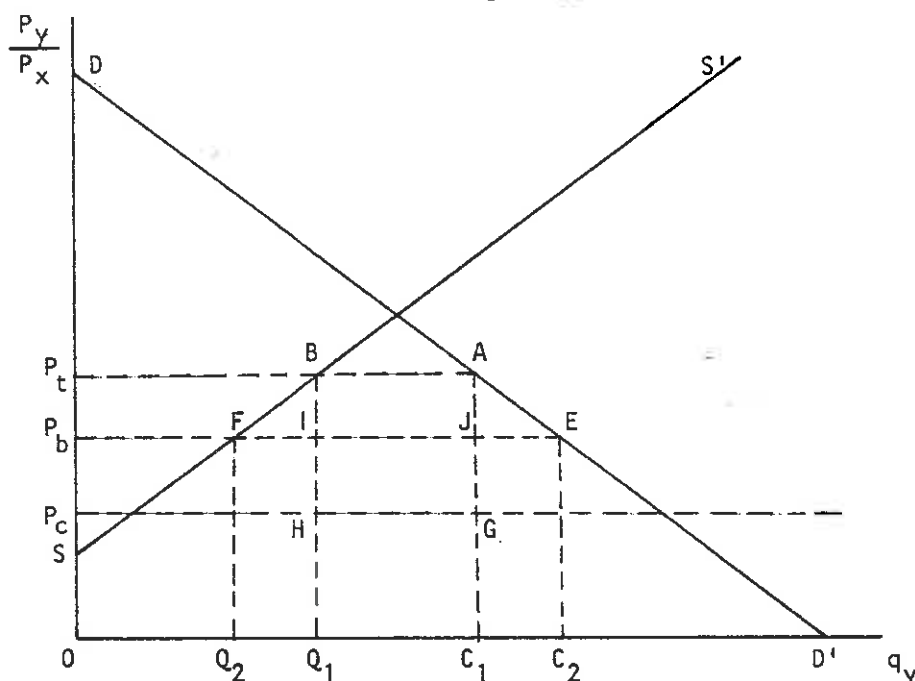
of Y to its opportunity cost. Under perfectly competitive conditions, producers equalize marginal cost to price in order to maximize profits in the short run. As all producers in the same sector are supposed to work with the same production function, their optimum level of output is the same for everyone, and the industry output can be determined by simply multiplying it by the number of producers in activity. SS' can therefore be identified with the short-term home supply function.

DD' is a compensated demand curve for Y, which indicates the amount that would be purchased if the community were constrained to the initial welfare level by compensating variations in income. It is derived from a specified social indifference curve in Figure 11.7, by relating the different quantities of Y to the slopes of that curve which, as we know, represent the marginal rates of commodity substitution between Y and X.

Earlier on, the compensating variations of income were measured as lengths on a horizontal straight line. It was rigorously demonstrated elsewhere[18]/ that such variations could be measured as triangles under a compensated demand curve. In the present context we shall call the compensating variations of income consumer's surplus. Total consumer's surplus measures the change in welfare, as given by the income that it would be necessary to subtract from the community in a situation with trade, in order to keep it at the same level of welfare enjoyed in a situation with no trade at all. Partial consumer's surplus applies to a comparison between two different situations with trade.

Let us consider in Figure 11.8 a change from a situation where no Y is traded at all to one where the community purchases OC_1 units at price OP_t. By our definition of curve DD', the first unit of Y is marginally valuated in terms of X by distance OD. In other words, the community, having yet purchased zero units of Y would rather pay a price of OD for the first unit instead of continuing without it. Since income effects are considered to be absent, the marginal value of Y as given by the vertical height of curve DD' decreases with the amount of Y already purchased. The community will keep consuming additional units of Y until its actual price exceeds the price consumers would be willing to pay for another unit. This happens at consumption level OC_1. By then consumers would have spent an amount of income equal to $OP_t AC_1$; but they enjoy a gross increase of welfare relative to the no-trade situation equal to the whole area bellow DD' up to C_1. The net welfare change is then equal to the difference between these two areas, i.e., triangle $P_t DA$. Once deprived from this income, community would be in the same situation as before trade was opened up.

The concept of producer's surplus can be defined in a similar way. It is the difference between the actual income received by producers when selling a specified amount of Y and the minimum income they would require in order to keep in business (without suffering actual losses). In Figure 11.8, curve SS' indicates the marginal costs of Y in terms of X, as measured on the vertical distance from axis oq_y. The producers of Y will keep supplying additional units of Y until the next one has a higher opportunity cost than its actual price. By then they will have produced OQ_1 units of Y in exchange of which they received an income equal to the area $OP_t BQ_1$. However, the marginal costs

accumulated so far would amount to an income equal to area $OSBQ_1$. The difference between these two areas is SP_tB, and this measures the producer's surplus at the output level OQ_1.

Let us suppose now that our economy imposes a non-discriminatory tariff on Y so as to put the domestic price up to OP_t, whereas the world price is originally given by OP_c. The difference P_cP_t is therefore the specific equivalent of our tariff rate t.

$$\frac{P_y}{P_x} = (1+t) \frac{P_y^*}{P_x^*}$$

$$OP_t = (1+t) \, OP_c = OP_c + t.OP_c$$

At this price level, consumption equals OC_1, production OQ_1, and the difference is covered by imports Q_1C_1. As the tariff is non-discriminatory, imports will come from the cheapest external source — country C. An alternative supplier might be country B, which produces Y at higher costs than C by a margin equal to distance P_bP_c in Figure II.8. Therefore, if a preferential trade arrangement takes place between A and B, so that A's imports shift totally their origin and no transport costs or tariffs will interfere with the formation of the domestic price in A, this will be brought down to OP_b. As a result. consumption increases to OC_2, while domestic production of Y drops to OQ_2. Partial consumer's surplus is obtained as a difference between total surpluses. Consequently, the gross increment in real income accruing to the community as a result of increased consumption of Y, is measured by the difference between the triangular areas P_bDE and P_tDA. However, the strip P_bP_tAE cannot be considered as the final welfare gain. Because domestic output drops, the producer's surplus shrinks by an amount given by area P_bP_tBF, that must be subtracted to the gross partial consumer's surplus. Also, the external source of Y shifts from C to B, implying a deterioration in the terms of trade offered to A from OP_c to OP_b. Previously to the formation of the preferential area, A's government received customs revenue (subsequently distributed among consumers) that equalled import volume Q_1C_1 times the absolute value of the tariff P_cP_t, that is, the amount given by rectangle HBAG. This whole revenue is lost as a result of the preferential arrangement. The net welfare effect will be the difference between areas FBAE and HBAG. This can be either positive or negative, all depending on the height of the initial tariff, the competitiveness of partner B in relation to the outside world and the absolute slopes of the demand and supply schedules. It is irrelevant that the tariff rate applying to C's products is changed from its previous level, provided it exceeds P_bP_c in specific terms. In the present example, perfectly elastic supply schedules are assumed both

for B and C. If B's supply were not perfectly elastic, its costs would
increase with extra-demand from A, which would worsen terms of trade still
further. If C's supply were also not perfectly elastic   the formation of
the preferential trade area would entail beneficial effects for its terms
of trade towards the outside world. Both variants of the model will be
studied in more detail in the next Chapter.

The welfare effects can be measured as the areas of triangles FBI and JAE
and of rectangle HIJG, in Figure II.8.

1) Area FBI measures the trade creation gain in terms of increased pro-
duction efficiency. It corresponds to the difference between the domestic
costs of production and the import costs of Y that domestic producers ceased
to produce.

2) Area JAE measures the trade creation gain in terms of increased con-
sumption, and is associated with the increase in consumer's surplus.

3) Finally, area HIJG measures the trade diversion loss, which equals
the difference between production costs in B and C multiplied by the initial
import volume.

The graphic representation of welfare effects is the basis of an important
method for measurement, known as the "triangles method". This issue will be
studied in Part III. However, we may already note that the application of
the model to empirical analysis is not straightforward. The compensated de-
mand curve is an useful tool for analysis, but is not an easily measurable
concept. What is observed in the real world is variations of quantities
purchased that correspond both to price and to income changes — that is,
the points of an ordinary demand curve. Areas under an ordinary demand curve
can only provide a proper measure of consumer's surplus, in the Hicksian
sense, if the income elasticity of import demand is assumed to be zero. This
assumption is clearly restrictive in the general equilibrium context, and
it is for this reason that the "triangles method" has been used for measur-
ing welfare effects in particular markets, where price movements are supposed
to bring about insignificant changes in income. Besides this shortcoming for
pratical applications, the Hicksian measure of the consumption effect pre-
sents other difficulties, which were emphasized in A. El-Agraa and A. Jones
(1981, p. 18). Because there is no expectation that income compensations are
paid in relation to price changes, that measure will not only produce dif-
ferent measures for both directions of a price change which exactly reverses
itself, but will also produce different measures for any given price change,
depending on the number of adjustment steps taken to accomplish it. In order
to overcome these difficulties, the authors use an ordinary demand curve in
general equilibrium analysis, and define consumer's surplus as the limit of

the sum of compensating variations in income for any change in the terms
of trade treated as a series of infinitesimally small adjustments. Therefore,
the two measures of consumer's surplus will be further apart, the less pro-
gressive is the change in terms of trade, which makes the use of ordinary
demand curves particularly unsuitable· in applications of tariff theory. Here,
changes in terms of trade occur often as a result of "once-for-all" tariff
adjustments. Consequently, the use of the Hicksian measure of consumer's
surplus in this kind of analysis seems advisable, although its validity is
restricted to a specified non-segmented price change in a specified direction.

4.4. Customs unions and free trade areas

So far, the difference between the effects of a CU and a FTA have been ne-
glected. However, in certain conditions, differences may be substancial. The
literature that has been produced about this subject examines these differ-
ences in the context of partial equilibrium models. H. Shibata (1967) assumes
imperfect elasticity of supply in both the home and the partner economies,
and discusses the effects of "rules of origin" according to alternative values
for the price-elasticity of home demand. V. Curzon (1974, pp. 264-85) formal-
izes the conditions under which a FTA would be preferable to a tariff-averaging
CU, for a variety of market situations, according to size, efficiency, and
supply and demand elasticities. A. El-Agraa and A. Jones (1981, pp. 39-51)
investigate the different effects of CUs and FTAs in a model with constant
production costs in all economies concerned, and analyse the consequences of
alternative competitive paterns and alternative tariff policy principles.
The analysis is enlarged so as to examine the phenomena of deflection of
production and investment in FTAs.

The main differences between the concepts of a CU and a FTA were described
in the beginning of this Chapter. In a CU, equalization of external tariffs
of all members prevents trade deflection by eliminating profit opportunities
that would have existed had there been differential external tariffs. In a
FTA, the role of preventing trade deflection is assured by a system of rules
of origin. If these were ineffective, all imports into the area would enter
via the external frontier of the country with the lowest tariff on the
good in question, regardless of where they would be finally consumed, which
would undermine the effectiveness of the protection afforded by the higher
tariff in the other countries. If this were the case, a common area-wide
price for the good in question would be established at the level equal to
the sum of the world price and the lowest of all the members' tariffs. This
situation is comparable to the case of a CU which adopted the lowest tariff
of all members as the CET.

The rules of origin limit the duty-free movements of goods inside the FTA

to those goods that originate or are deemed to originate within the area.
In so doing, they free area producers from competition with non-area pro-
ducers in those markets where tariffs are higher. The relatively efficient
among the area producers can find an opportunity to expand their outputs to
supply the whole area market at the expense of the least efficient producer
inside as well as the most efficient producer outside the area. A similar
outcome arises when a CU is formed, which adopts CET rates higher than the
lowest rates among members. However, important differences between the two
preferential arrangements may occur. The crucial elements in determining
these differences are: (i) whether a single equilibrium price exists for
the area as a whole; (ii) the level at which it is established.

Let us suppose two small economies, relative to the r.o.w., producing a
homogeneous good in conditions of increasing costs in the short run. The
most efficient producers are located in the r.o.w., but among the small
economies, one, named country B, is more efficient than the other, named
country A. Both countries impose tariffs (not necessarily prohibitive) on
imports of the good in question, and it is assumed that country B's tariff
is lower than A's, which reflects its relatively superior level of efficiency.

Once a FTA is established between A and B, incorporating a system of rules
of origin, the effective supply in A's market becomes the joint supply of
producers established in both countries, who produce area-origin goods. The
crucial factor in determining the effects of the FTA is the size of demand
in the high-tariff country, relative to effective supply. Let us first con-
sider the situation in which A's demand is entirely satisfied by producers
of the area-origin good at the price previously prevailing in B. Then, a
single equilibrium price will be established for the whole area, that is
equal to the price in B. Due to the price fall in country A, relative to
the pre-FTA situation, its tariff becomes ineffective, and trade creation
gains, both in consumption and in production, are reaped by A's consumers.
They also have to support trade diversion losses, that correspond to the
initial amount of imports from the r.o.w. multiplied by the excess cost of
partner's production. The fact that B's producers divert a share of their
output to increase sales in the partner's market creates a shortfall in their
own domestic market, which is met by additional imports from the r.o.w. —
this is called by Curzon the "shifting effect" (or "indirect trade deflec-
tion", according to Shibata). As a result, country B enjoys a windfall gain
in government revenue (i.e., a real consumption gain for the country at
large). As country A loses tariff revenue, we may say that a FTA causes
redistribution of revenue among its members in favour of the lower-tariff
country.

Therefore, the FTA brings obvious welfare gains to country B, while the net

outcome to its high-tariff partner depends on the usual compensation between negative and positive effects. If a CU had been formed instead of a FTA, the welfare effects would not be so clearly positive. In the present situation, any CET above the lowest tariff among union members would reduce demand in both markets and increase the joint supply, the outcome being less imports from the r.o.w. to meet the shortfall in B's market. Eventually, the CET might be so high as to clear the whole union market, making the CU self-sufficient. Above this level, the CET becomes ineffective, unless a union subsidy equal to the difference between the CET and the world price is paid to B's exports to the r.o.w. In any case, the CU brings about higher domestic prices than the FTA, in result of which country A's consumers gain less and loose more than under this option. In country B, the consumers suffer a consumption loss, and the economy looses real surplus, as its resources are drawn out of other occupations to produce an extra-amount of the area-origin good, in which it has comparative disadvantages relative to the r.o.w.

Let us consider now a second situation, in which B's supply is incapable of satisfying A's demand at the price that used to prevail in its domestic market. After the formation of a FTA, the excess of demand in A over joint supply causes its domestic price to rise, until an equilibrium situation is reached. However, it cannot rise above the level that prevailed before the FTA, which is determined by its (high) tariff. If the effective supply of the area-origin good does not satisfy A's demand even at this ceiling then the demand excess has to be met by imports of the non-area-origin good. Whatever the situation is in A, the price in B cannot rise above the level that existed prior to the FTA arrangement, because imports from the world's lowest-cost producer prevent it from doing so. Consequently, a FTA in this situation produces two different prices in equilibrium: in the low-tariff country, the price remains at the pre-FTA level, while in the high-tariff country, the price will be set somewhere above the partner's level and below or at the level determined by its own tariff.

Since the price of the area-origin product prevailing in A is higher than in B, the producers of this country will take advantage of the fact that they produce area-origin products, protected against third country's competition, and will export to A's market until its demand is entirely met. The resulting shortfall in B's own consumption will be met by imports from the r.o.w., which provide a revenue gain. Given the rise in the price of the area-origin product, there will be an increase in B's output, which entails excess costs of production. However, the loss will be entirely supported by the partner country's consumers. Since there is no change in B's domestic price, there will be no consumption effects.

In this situation, the welfare effects in country A are similar to the previous one. Trade diversion losses are larger and trade creation gains smaller, the higher is the level of the equilibrium price. Customs revenue is entirely lost, except in the case whose domestic price does not fall and the r.o.w. maintains a share in the market.

If A and B form a CU in this situation, the CET turns out to be more or less effective. Union demand and supply balance at or around the CET, at a price which may be above or below the FTA equilibrium price in A's market. Therefore, the welfare effects for country A will not be very different under the two alternatives, except if its demand is large enough to raise the price to the level prevailing before the preferential arrangement. If this is the case, then a CET will entail a fall in the domestic price with all the beneficial results. As to country B, it will experience excess costs in consumption and in production, instead of the windfall gain in government revenue, and part of this cost will be supported by domestic consumers. Less of the increased production in B tends to be traded, because some of it displaces former imports into B from the lowest-cost source. To the extent that the increased production at a higher price is consumed at home and not traded with the partner country, it is a deadweight loss to the economy.

Consequently, under the given assumptions, the FTA option seems to be clearly favourable in terms of welfare net benefit for the country that has the lowest tariff (and consequently is assumed to be the most efficient). As to the country that has the highest tariff, there are no qualitative differences between the effects of a FTA and a CU, the final outcome depending only on the position of a CET relative to the equilibrium price level formed under a FTA.

However, the advantages of a FTA over a CU must be qualified in two respects. In the first place, it is very likely that trade with third countries will be reduced after the formation of a CU. In a FTA, it will not fall below B's pre-union import requirements, and may well rise above this level because of the shifting effect. Thus, if the joint action of our two small economies is influential enough to change their terms of trade with the r.o.w. there are likely to deteriorate in the case of a FTA, while they will improve in the case of a CU. In the second place, one must consider the disadvantage of the distortion of production patterns due to tariff disparities on imports of raw materials and intermediate goods, which is greater, the larger are the differences in individual tariff rates[19]. Consequently, a FTA will fail to eliminate the differences in effective protection which previously exists between member countries, whereas the CET will allow the establishment of an equal basis of competition for all suppliers within the CU.

El-Agraa and Jones fail to reach the same conclusions as Curzon and Shibata. In general, a tariff-averaging CU would bring about better welfare results than a FTA, except if no rules of origin were established, in which case the latter would produce a CET-equivalent equal to the minimum tariff rate within the CU. This conclusion is based on the acceptance of perfectly elastic supply curves in both member countries, which prevents the occurrence of a "shifting effect". Besides, the price differentiation situation is considered by El-Agraa and Jones to be incompatible with the assumption of perfect competition in the present context. This position would be correct if two different prices were practiced for the same good inside one market. However, price differentiation occurs in the final equilibrium between two different markets, where one, the high-tariff country, consumes the area-origin good, while the other, the low-tariff country, consumes the non-area-origin good only.

El-Agraa and Jones raise two further questions of interest. The first is whether the hypothesis that high tariffs correspond to low efficiency and vice-versa, can be reversed without introducing significant changes in the conclusions. In fact, it cannot, because, as the authors demonstrate [20], when the most efficient producer inside the union is also the country with the highest tariff (which becomes nearly prohibitive), its adjustment to a CET will entail a reduction of its tariff, thereby causing external trade creation. In these conditions, the formation of a FTA will not bring about comparable gains for that country.

The second question is related to the possibility that the formation of a FTA is a cause of deflection of production and investment. It is demonstrated[21] that deflection occurs only when both potential partners are producing the same commodity initially, and that this possibility is based on the assumption that the country with the domestic cost advantage has a higher rate of duty on imported intermediate goods. Otherwise, the shift of location would be done in the "right" direction, i.e. towards the country with superior efficiency in the production of the final good.

CHAPTER 5

PREFERENTIAL TRADE POLICY

IN THE PRESENCE OF FOREIGN

AND DOMESTIC DISTORTIONS

In the previous Chapter we examined the welfare effects of preferential trade
policies in comparison with the effects of alternative policies. On the basis
of the standard model of international trade embodying perfect competition in
every market, we were able to conclude that a preferential tariff reduction
was always inferior to a non-discriminatory reduction of an equivalent degree,
and that it might or not be inferior to no reduction at all. Now, we shall
inquire into what extent is this conclusion affected when the alternative po-
licies are used to correct existing distortions. In general terms, a distor-
tion is said to occur in a given market when the equilibrium price is set at
a different level of any of the relevant marginal rates that define the Pareto
optimality criteria. It may be domestic or foreign, depending on whether the
relevant exchange relations take place among producers and consumers of the
same country or of different countries. And it may be either induced by a
specific government's policy (tariffs, taxes, etc.) or inherent to the opera-
tion of the market in question (consumption or production externalities, wage
rigidity, etc.).

We shall examine in succession the cases of foreign distortions of the mono-
poly-monopsony type, of foreign distortions induced by the imposition of tariffs
by partners as well as by the home economy, of the existence of a "public good"
identified with the collective preference for domestic industrial production,
and of production externalities, with constant and decreasing average costs of
production.

5.1. Welfare effects derived from changes in external terms of trade

If the preferential area's demand for imports from the r.o.w. is large enough
to influence its external terms of trade, a divergence will emerge relative
to its marginal rate of foreign transformation. Then, an analysis following
the "optimum tariff" argument can be made in respect of preferential policies.

One of the most informative analysis of the terms-of-trade effects of

preferential arrangements can be found in R. Mundell (1964). If a tariff-averaging customs union is formed and, as expected, it decreases the union's demand for imports from the r.o.w., there will be a tendency for the union's terms of trade with the r.o.w. to improve. This effect will operate to reduce the loss that any trade diversion imposes, and it may suffice to eliminate it altogether if the fall in the price of the imported product is sufficient. If the average level of tariffs is reduced with the formation of the CU, then trade with the r.o.w. may even be increased due to external trade creation, and a deterioration of the terms of trade may arise instead of an improvement. If a free trade area is formed, imports from the r.o.w. will not fall below the (low tariff) partner country's requirements in the pre-free-trade area situation, and they may even rise above these on account of indirect trade deflection. Consequently, any improvement in the terms of trade will be smaller in a FTA than in a CU, and they may even deteriorate if trade deflection is very significant.

Where the conditions for terms-of-trade effects exist, it is possible that members of a CU may be able to exploit them more effectively as a group than if they imposed tariffs separately. The improvement in the terms of trade will be more favourable, the larger is the CU. This possibility was elaborated by S. Arndt (1968). He demonstrated that, when two countries with mono-poly-monopsony power compete on the market of the r.o.w., the imposition of a protective tariff by one of them can only become fully effective for its own welfare if the other country adopts a similar policy. In the interests of the latter, this is a non-optimal policy, since it would be better off without protection, provided that the competing country maintains its tariff. Therefore, the interests and policies of the two countries may not be compatible. The tariff-imposing country might attempt to influence policy-making in the competing country, by means of international commodity agreements or international cartels, but neither would provide an effective and long-term control of the market for its export production. A solution might be the formation of a CU between competitors in order to impose a CET on a particular product that each country continued to import. In this case each country might gain from the action of the other.

More recently, A. El-Agraa and A. Jones (1981, pp. 73-85) examined the rationale for the formation of a "large" CU in the context of optimal intervention analysis. The study is developed in a general equilibrium framework where the trade effects are simultaneously examined for the home and partner countries and the r.o.w. The crucial assumption is that the r.o.w. is unwilling or unable to react to the home country's or the partner country's choice of trade policy or to co-operate with them in reach for a globally optimal solution. It can be demonstrated accordingly, either for dissimilar

or similar economies, that the optimal policy from the joint viewpoint of the home country and the partner is to form a CU whose CET is set at the optimal rate, so as to equate the marginal value of importing into each of the member countries with the marginal cost of importing (from the r.o.w.)[22]. When the situation arising from such a policy is compared with that arising from unilateral optimum tariff policy imposed by the home country without retaliation, the partner clearly gains as it receives an increase in economic surplus due to the increase in the price of its export good. However, the net effect for the home country is uncertain and could well be negative, especially if it has to forego the post-union tariff revenue. However, the desirability of joint optimum tariff intervention holds for two reasons.

(i) As the formation of the CU brings net welfare gains to the union as a whole, the partner could compensate the home country and still reap a final gain (for instance, by adopting an appropriate internal distribution of the union receipts through common policies).

(ii) When the comparison is made with the situation that would arise if the partner country retaliated to the home country's action by imposing its own optimum tariff, the CU alternative is clearly preferable even from the latter's viewpoint.

Of course, the welfare benefits for the CU as a whole have their counterpart in a loss of economic surplus in the r.o.w. due to the fall in the price of its exports. But, from the viewpoint of the CU members, a rationale exists, which is entirely based on the resulting favourable shift in the external terms of trade. When a preferential trade arrangement is agreed between small trading partners, that are unable to influence world prices, even by acting in unison, or when a small country joins an existing arrangement without affecting its external terms of trade, that rationale is lost. The only distortion that we shall consider, in this case, is that created by non-discriminatory tariffs imposed by both partners prior to the preferential arrangement. The following analysis is a sequence to that developed in Section 4.3., now in a framework that allows for welfare effects upon both partners simultaneously.

5.2. Preferential mutual reduction of tariffs with constant external terms of trade

a) Let us assume three different countries — A, B and C — where the latter is large enough not to let its terms of trade be modified by changes in trade with the other two. We shall also assume a constant pattern of trade

flows, whereby country A exports product X to country B in exchange for product Y, while B exports Y to C in exchange for X. This means that country A competes with the r.o.w. in country B's market.

In Figure 11.9, the vector OC represents the (assumedly constant) world terms of trade, and curves OA_{FT} and OB_{FT} are respectively the offer curves of countries A and B under free trade. However, neither A nor B trades on their offer curves initially, as both are assumed to impose tariffs on their respective import products, for whatever reason. Thus, while trading on the world terms of trade, both A and B exchange smaller quantities of X and Y than they would do under free trade. Let us suppose that A_o and B_o are the

Figure 11.9
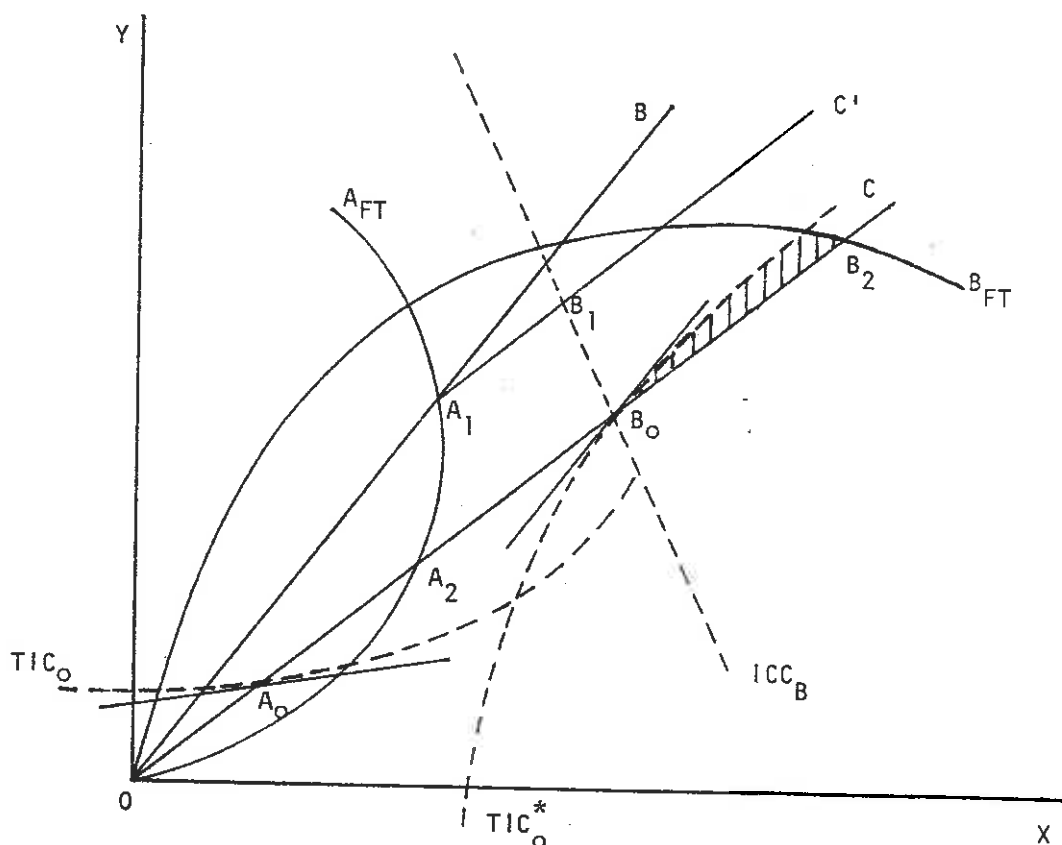
initial trading situation of countries A and B respectively. The small lines intersecting OC at these points represent the domestic price ratios of A and B, the difference in their slopes relative to OC representing the tariff rates imposed by each. Curve TIC_o is a trade indifference curve belonging to A's map, and vectors OA_o and OB_o measure the initial total amounts of trade done by countries A and B, respectively. Following our assumption, the difference vector A_oB_o stands for the trade flows between B and C.

Supposing now that a free trade area is jointly formed between A and B, B's tariff vis-à-vis the outside world will be the one that determines intra-area price, since B is the only country of the two that trades with C. After the

free trade area has been created, the domestic price in B will not be changed and country A will be able to export to its partner at this ratio. In Figure 11.9 line OB has the same slope as the domestic price line through B_0; therefore, the new trade equilibrium situation for country A will be reached at A_1, where its offer curve intersects line OB. The terms of trade between A and B have improved from the standpoint of the former, and together with the trade expansion gains induced by tariff removal, this effect leads to a net welfare improvement. In fact, situation A_1 is even superior to A_2, the point were the country would stand had a unilateral tariff removal taken place instead of a preferential one. The shift from A_0 to A_2 would entail trade expansion gains, only, whereas the shift from A_2 to A_1 is accompanied by a decrease in the imported commodity price, which in turn induces further trade expansion effects.

The welfare consequences for country B are negative. The new trade equilibrium situation of country B is obtained by drawing a line with the same slope as OC from A_1, the point where B trades with A, and then finding the intersection of this new line A_1C' with the income-consumption line at B's domestic price (ICC_B). In Figure 11.9 this final equilibrium is represented by point B_1. While its domestic price is unchanged, country B trades at different terms of trade depending whether its partner is A or C. Up to point A_1, it trades at unfavourable terms with A and then satisfies its excess demand for X by trading with C at more favourable terms up to point B_1. Vector A_1B_1 is therefore the final joint trade vector between the area and the outside world and in comparison with A_0B_0 it represents a decrease in trade. We may say then that trade diversion took place. However, this is not a necessary result. With different income-consumption lines and a different free-trade offer curve of A, the final outcome might well be one of external trade creation, i.e. an increase in trade with the r.o.w.[23/].

Whatever the size of the final trade vector with C, however, provided that this trade is preserved with the initial flow pattern and that both income-consumption lines are negatively sloped, country B always attains a lower welfare level than at B_0. As it enjoys no gains from preferential trading (its domestic price remains unchanged), country B only suffers deterioration in its terms of trade.

In Figure 11.9 both income-consumption lines have negative slope, which indicates absence of inferiority in goods X and Y. For instance, as B's real income increases, exports of Y decrease and imports of X increase, which indicates greater domestic consumption of both commodities. M. Kemp (1969) examined the effects arising from abandoning the non-inferiority assumption. Considering only B's income-consumption line ICC_B, if consumption of commodity X is assumed to decline with an increase in income, ICC_B would rotate

to the right and the final equilibrium point would be situated to the right of B_1 along line A_1C'. As B_1 moves in a NE direction, trade with C increases and B's welfare loss becomes smaller. While external trade creation is a possible outcome, Kemp demonstrates that B cannot be better off even with a very strong inferiority of its imported commodity, unless we assume that initially B is not trading to its greatest advantage. The opposite pattern of inferiority, with good Y of the Giffen-type, would bring still more complex results. Line ICC_B would rotate to the left, thereby shrinking the size of vector A_1B_1 and worsening B's welfare position. With ICC_B perfectly horizontal, i.e., with an income-elasticity of zero in consumption of Y, trade with C would be extinguished, and if it rotated further to the left, B would be inclined to trade less than A. So, there would occur a reversal of trade, with B competing in the export of Y with C in A's market. Kemp further demonstrates that, in the case of trade reversal, both countries would end up trading at A's domestic price ratio, with B enjoying a welfare gain and A suffering a loss. In the case of extinction of trade with C, the final situation becomes somewhat undetermined: either at least one member suffers or at least one benefits, depending on the relative positions of the two initial trade indifference curves.

Once the hypotheses of trade extinction or of trade reversal are ruled out, we may conclude that the formation of a preferential trade arrangement that fully eliminates tariffs between A and B, while leaving B's tariff at its initial level, will result in an improving welfare situation for the country that competes with the r.o.w. on its partner's market (even in comparison with non-discriminatory tariff removal), and a worsening situation for its partner. This is the outcome of a FTA, or of a small economy joining a CU without changes in its CET. Had a CU between small economies been formed instead, the CET might be fixed above or below the level of the tariff of the country that trades with the r.o.w. If it were fixed above, the intra-union price of good X in terms of Y would be higher than B's domestic price prior to the arrangement. Relative to the situation illustrated in Figure 11.9, the welfare loss of country B and the gain of country A would be correspondently larger. If the CET on imports of X were set below B's tariff, the welfare gains to country A resulting from the size in the intra-union price of X would not be so high as under the former case, and its equilibrium trade would be located somewhere between A_2 and A_1 on curve OA_{FT}. As to country B, its income-consumption line would shift rightwards in response to a fall in the domestic price of X, indicating a greater willingness to trade. If the CET rate is fixed so as to avoid unbalanced welfare outcomes, a final solution might be found whereby the equilibrium trade of B would be located somewhere within the shaded area in Figure 11.9. Consequently, both partners would be better off than under the initial situation of non-discriminatory protec-

tion. However, this still does not provide a conclusive rationale for the formation of a CU, as the country that trades with the r.o.w. cannot avoid some uncompensated trade-diversion loss. Whatever the final outcome of a CU, it can never leave B on a higher TIC than the one that is tangent to OC at free trade point B_2.

b) Let us now concentrate on the issues raised by the formation of a preferential area where the tariff imposed by the country that trades with the r.o.w. is left unchanged. What should induce this country to enter an arrangement which is sure to make it worse off?

The preferential trade arrangement might be conceived as an instrument of development aid. In this case, country B suffers consciously a welfare loss inflicted by worse terms of trade, in order to encourage A's outward-looking strategy of development. Possibly, non-economic objectives may be associated with B's attitude, such as geopolitical considerations involving greater political and economic stability in A, liberal access to strategic raw materials, or non-discriminatory treatment of B nationals' foreign investment in A.

G. Yannopoulos (1983) examined the relationship between tariff preferences and development strategies in partial equilibrium models. When tariff preferences are not reciprocal, the recipient country enjoys a gross increase in foreign currency receipts associated with the exports towards the preference-granting country. Such increase is due not only to the enlargement of the market share of the recipient, but also to the total or partial [24] appropriation by the latter of the tariff preference margin. However, the net gain, for the recipient, (the "export expansion" effect) will be much lower than this gross increase in currency receipts. Firstly, if a significative share of exports was previously directed to third countries' markets, the opening of tariff preferences will lead to export trade diversion. Secondly, the final welfare gain is net of the additional domestic resource cost required by the additional production for export, which will be higher, the more elastic is the export supply function. When tariff preferences are "reversed", then other possible sources of negative welfare impact must be considered, such as trade diversion. Furthermore, trade creation may not imply an improvement in welfare, from the viewpoint of less developed countries. If potential comparative advantages are given away in the replacement of infant domestic suppliers by foreign ones, then "reverse" preferences may well lead to a "perverse" pattern of specialization, i.e. one that is contrary to potentially more efficient allocation of resources. Notwithstanding all these limitations, the granting of tariff preferences to less developed countries may obtain some of the gains that are normally associated with import substitution, now in the context of an outward-looking strategy.

In the context of the present model, the only way to make B accept the preferential trade solution would be by means of a lump-sum compensation in terms of its imported commodity X.

In Figure 11.10, the main components of the previous figure are reproduced. Now we suppose that A transfers to B an amount of good X equal to the distance OG. Still assuming that after the preferential arrangement, trade with C is preserved, without reversal, A will trade at B's domestic price ratio up to a point located on its own income-consumption line. In Figure 11.10,

Figure 11.10

such a point is A_3. Now, country B satisfies its excess demand for X by trading at the world terms of trade with C. Final equilibrium will be reached at B_3, where line ICC_B intersects GA_3C''.

As a result of direct compensation both countries enjoy a higher degree of welfare than before, with non-discriminatory protection. Point A_3 is clearly situated above TIC_0 and point B_3 has to be on a higher welfare level than B_0, for every tangent line with a positive slope (as it is the case with the domestic price line through B_0).

A mutually beneficial preferential trade area is not however a necessary outcome. It all depends on the slope of the initial indifference curves and of the income-consumption lines. In Figure 11.11, we depict an alternative situation where the compensation of B by A cannot make both countries better off. The amount of X to be transferred is given by vector OG'. Supposing that the slope of G'G' represents B's domestic price ratio, country A will trade along this line until the intersection A_4 with ICC_A is reached. This point is situated on the initial trade indifference curve TIC_o, so that the compensation payment leaves country A as well off as before the preferential arrangement.

Country B will trade along line A_4C'', starting at A_4 and ending up at B_4. Therefore, the volume of trade with C is indicated by distance A_4B_4. Even after compensation, country B is not as well off as at its initial position.

Figure 11.11
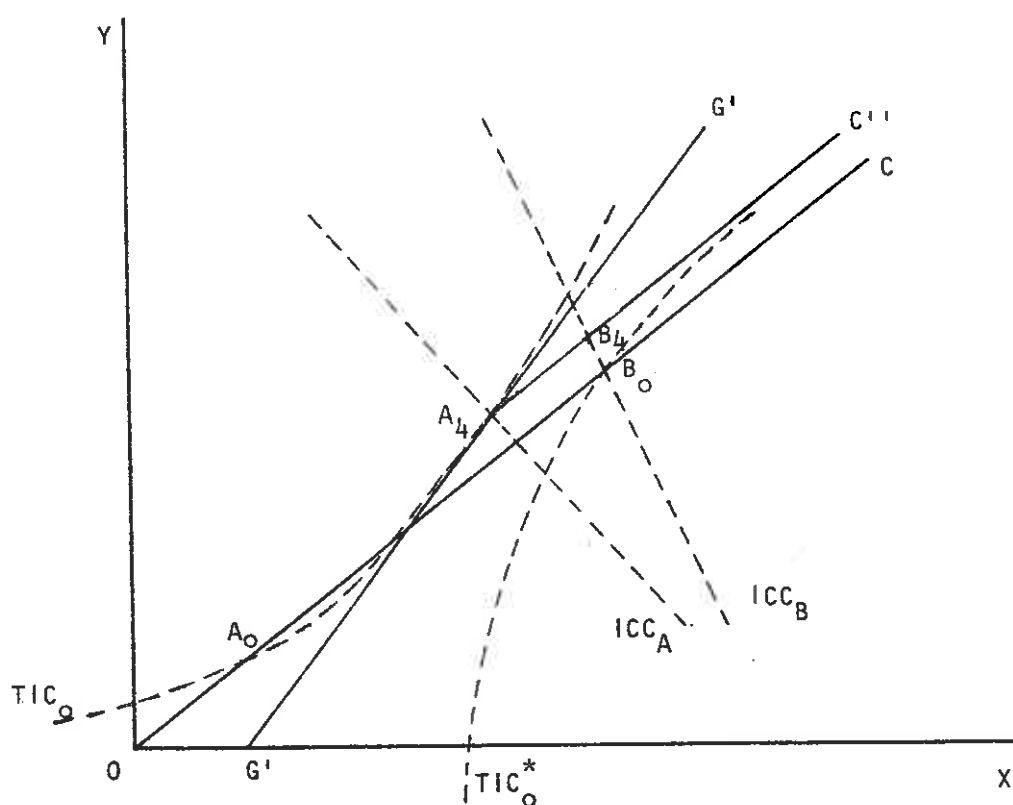
Consequently, as country A cannot transfer more of X without worsening its welfare relative to the initial situation, the preferential arrangement has not produced mutually beneficial results even in a potential sense.

In general, it is a necessary and sufficient condition for a mutually bene-
ficial preferential trade arrangement that the income-consumption line of
the country benefiting from the shift in intra-union terms of trade cuts
its initial trade indifference curve on or below the world terms of trade
line, and that there exists, between this line and the point of intersection,
at least one point of trade equilibrium which lies to the left of its asso-
ciated point for the partner country (M. Kemp, op. cit.). This means that
the likelihood of a compensation agreement being struck decreases with the
absolute value of the slope of the TICs of the compensating country relative
to the axis representing its export product. For a given production-possibility
frontier, that likelihood will be greater, the lower the marginal utility
atributed by the compensating country's consumers to the export good, rela-
tive to imports; and, for a given social indifference map, it will be greater,
the more skewed is the PPF towards the production of the export good. Conse-
quently, a country whose consumption and production structures require a re-
latively large amount of trade will be more able to enter a preferential trade-
cum-compensation agreement than another with anti-trade biased structures.

Supposing that a compensation agreement is possible between A and B, would
that leave them better off than unilateral tariff reduction? Let us go back
to Figure II.10. If A compensates B, its trade situation will be located
somewhere on ICC_A between the intersection points with vector OC and with
the indifference curve TIC_0. Point A_2, in turn, represents the free trade
situation, in which country A reaches the welfare level corresponding to
curve TIC_1. Every free trade equilibrium for country A will be located be-
tween A_0 and the intersection of the terms-of-trade line with the income-
consumption line corresponding to the price ratio prevailing in B's market,
under the assumptions of non-inferiority. It is intuitively perceived from
observation of Figure II.10 that, if country A reduces the compensation amount
so that its trade-cum-compensation equilibrium remains located on curve TIC_1,
at point A_3', it is impossible to reach any equilibrium point for country B
that grants it higher social welfare than that corresponding to the free trade
situation (curve TIC_1^*).

To sum up, a preferential tariff reduction, that does not affect the external
terms of trade, cannot leave both partners better off than under an alterna-
tive policy of non-discriminatory tariff removal. Therefore, a conclusive ra-
tionale for the formation of CUs or FTAs is not provided in this case. If the
tariff imposed by the country that trades with the r.o.w. is allowed to de-
crease, a CET may be established that provides both partners with better wel-

fare situations than under the previous non-discriminatory protection. Other-
wise, that same country's welfare is hurt by the preferential arrangement. In
this case, either the loss is borne as part of a development aid policy, or a
compensation agreement is struck, the likelihodd of which depends upon the
pro-trade bias embodied into the partner's structures of production and con-
sumption.

c) So far, we have been considering two sources of distortions: the tariff
imposed by the home country and the tariff imposed by its partner. Nothing
has been said about obstacles to trade with the outside world. In a recent
paper, Ronald and Paul Wonnacott (1981) argued that when C's tariffs are
considered, the preferential trade alternative dominates unilateral tariff
reduction certainly for at least one partner, and possibly for both. The
central idea behind the Wonnacotts' construction is that in a real world
where obstacles to trade with C exist in the form of tariffs and transport
costs, the partners of a preferential arrangement can, by trading with each
other, benefit mutually by sharing their net saving on transport costs
and C's tariffs. With the introduction of this possibility, country C now
presents not one, but rather two, offer curves. In Figure 11.12 while the

Figure 11.12

relative prices within C remain   given by the slope of OC, the offer
curve of C as seen by A (that purchases Y by exporting X) will be OC_2, and
as seen by B (that purchases X by exporting Y) will be OC_1. Therefore, the
tariff imposed by C (for monopoly power) and the transport costs drive
a wedge between C's offer curves, and if this is wide enough, it is pos-
sible that A and B trade within it in an initial situation where both impose
import tariffs. In Figure II.12, let OA and OB be A's and B's offer curves,
respectively, under this assumption. Country B will prefer to trade directly
with A at the terms of trade given by the slope of OE_0 than with C at the
slope of OC_1. Country A will also obtain better terms of trade if dealing
with B than if it trades on OC_2. Therefore, the initial equilibrium will be
located on point E_0. Now, the argument runs that if A and B mutually remove
their tariffs under a preferential agreement, they would reach a superior
equilibrium at E_1, where their free trade offer curves intersect each other.
This situation would be preferable, not only to the initial one, but also
to the situations that would be reached under unilateral tariff removal,
either by country A (point F_1) or by country B (point G_1). At the final
equilibrium E_1, both partners will be better off, since both have enjoyed
trade creation gains, without suffering trade diversion losses[25].

The authors certainly succeeded in explaining why reciprocal tariff elimi-
nation is preferable to unilateral and non-discriminatory tariff elimination
done separately by each of the trading partners A and B[26]. However they do
not present a satisfactory reason for the formation of a preferential trade
area instead of non-discriminatory unilateral tariff removal done by both
partners together. Provided the free trade offer curves of countries A and
B intersect each other inside the area bounded by vectors OC_1 and OC_2,
the final solution E_1 is reached as the common outcome of two different
sets of policies: Abolition of tariffs vis-à-vis all sources of imports by
both countries A and B, without any concessions from C; or abolition of
tariffs in mutual trade while maintaining protection vis-à-vis C's products
(which is irrelevant, given the terms-of-trade differential). In real world
conditions, however, it is unlikely that A and B removed their tariffs vis-à-
vis the r.o.w. without receiving some concessions from their most important
partners, at least for those products of greater weight in their exports. Such
concessions may be important enough to reverse the judgement about the desir-
ability of CUs (or FTAs) by one of the partners. If, as a result of conces-
sions, the gap between lines OC_1 and OC is narrowed so as to leave point E_1
outside the wedge, it would be to B's advantage not to establish any prefer-
ential agreement with A, and instead trade at the new terms of trade offered
by C, that allow it to reach an equilibrium point such as G_2.

5.3. Public goods and the rationale for preferential trade

So far, the analysis has been conducted on the basis of the standard assumptions of the neo-classical trade model, under which full optimality in resource allocation in production and consumption obtains only in free trade by a single country of a "price-taker" type, and in the imposition of an optimum tariff by a country with monopoly-monopony power. It is not surprising, therefore, that no economic justification might be found for the formation of preferential trade agreements instead of non-discriminatory tariff removal, with one single exception — that the preferential area is large enough to change terms of trade to its benefit and no retaliation by the rest of the world occurs.

It seems therefore that the orthodox trade theory is divorced not only from the reality of economic integration but also from the reality of tariff policy itself. In Harry Johnson's words, "(...) the economist is left without a theory capable of explaining a variety of important and observable phenomena, such as the nature of tariff bargaining, the commercial policies adopted by various countries, the conditions under which countries are willing to embark on customs unions, and the arguments and considerations that have weight in persuading countries to change their commercial policies" (H. Johnson, 1965a, p.239).

The introduction of some additional assumptions into the neo-classical model of trade becomes then necessary in order to make it more appropriate to deal with such commercial policy issues. Three main strands have been followed in the last twenty years with this common goal: the introduction of a collective preference for industrialization as a "public good" in the welfare function, the definition of "innate" distortion in the operation of domestic markets, and the assumption of economies of scale internal to the industry. In this and the next two sections, we shall review and comment in succession these three directions of research.

H. Johnson (1965a) and C. Cooper and B. Massell (1965 b) developed independently and simultaneously an analysis that is relevant for preferential trade arrangements, in which a public good is included in the social welfare function and therefore in the evaluation criteria. They started from the supposition that welfare is generated both by the private consumption of goods and services, and by the collective consumption of a variety of public goods, i.e. goods whose benefits do not accrue solely to the purchaser and that must be provided through government agency at the cost of sacrifices in private consumption. One of such goods is a certain desired level of industrial production, that might be in excess of what would be commercially viable in the absence of protection[27/].

a) C. Cooper and B. Massell proceed with further assumptions. Two countries are considered, which share similar collective preferences for industrial production and the characteristic of being agricultural exporters for whom it is cheaper to import manufactured goods than to produce them locally. The two countries are indifferent to a choice between industries and industrial diversification is not itself an object of policy. Private domestic demand for each product is of equal size in each country and the same between the two countries. Average costs of production are constant for each industry. And the possibility of compensation agreements is disregarded.

In each country, industries can be ranked according to the excess cost of producing one unit of output locally relative to the cost of a comparable import. The ranking produces a stepped function, that is named "supply of industry curve", which indicates the excess cost and the level of production in each industry. If each country is left to itself, it will impose "made-to-measure" tariffs on each industry, and its total level of total production will be determined by the maximum excess cost (or forgone private product) that the community is prepared to pay for admitting local instead of imported industrial goods.

The formation of a CU between the two countries offers prospects for mutual gains. The union market will be supplied from the most efficient location therein. This will produce a new union "supply" curve, which lies below the country "supply" curves. Therefore, it is now possible for both countries to produce the same amount of industrial products as before, but at a lower cost in terms of forgone product. In reality, the saving in industrial costs will cause favourable income and substitutions effects which would combine to increase industrial production in the union.

Given a favourable cost structure, an efficient CET would conveniently result in each country having one of the least cost industries to serve the union market, and consequently share in the total welfare increase. But this is not always possible. In particular, when one member is clearly more productive than the other in a number of industrial branches, the full liberalization of mutual trade might give the former the total benefits from CU formation. In these circumstances, either the losing country is compensated for its loss of industry by a sufficiently large income transfer, or some protection within the CU for the industry of the less efficient partner is necessary. Either way, the post-union pattern of production and welfare distribution becomes much more the result of political consensus than of market prices. And, as several experiences of regional integration among LDCs have demonstrated, the stability of CUs becomes threatened when its continuation is subject to political affinities between Governments.

b) H. Johnson (1965a) develops a similar argument along a more complex
theoretical framework. A crucial distinction is drawn between real income
in the sense of utility enjoyed from both private and public consumption,
and real product, defined as total production of privately appropriable
goods and services. Assuming that industrial production is considered a
collective consumption good, that the government acts rationally, and that
tariff protection is favoured relative to direct subsidization from tax
revenue, protection will be carried to the point where the value of the
marginal collective utility derived from industrial production is just
equal to the marginal excess cost of protected industrial production. This
cost consists of two components: the marginal production cost, expressed
as the proportion by which domestic cost exceeds world market cost, and
that is measured by the tariff rate, and the marginal private consumption
cost of protected industrial production, which comprises the loss of con-
sumer's surplus due to the restriction of consumption by the increase in
the tariff rate necessary to induce the marginal unit of domestic production.

The interaction between the demand for collective consumption of industrial
production and the cost of supplying it in the case of a small importing
country is represented in Figure 11.13.

WW' is the world supply curve of industrial products and DD' is the domestic
compensated demand curve for such products. SS' is the domestic supply curve,
and RS'' is the marginal private cost curve of protected production, which
includes its two components: the excess production cost is measured by dis-
tance FG equal to tariff WT, and the consumption cost which is given by area
REF, equal to triangle area HIJ. The height of VV' above WW' represents the

Figure 11.13
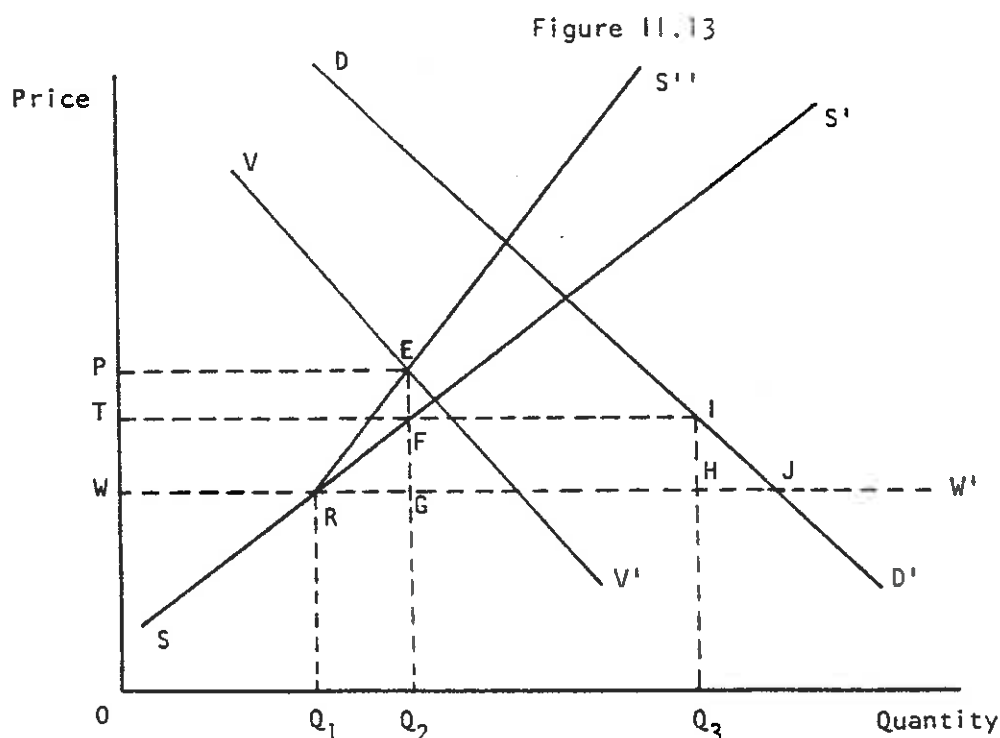
marginal value of industrial production in collective consumption, and line VV' represents the preference for industrial production which is assumed to yield a diminishing marginal utility.

The maximization of real income (but not of real product) is achieved at the intersection E of VV' with RS'', requiring the use of a tariff rate equal to $\frac{WT}{OW}$ to induce an increase in industrial production from OQ_1 to OQ_2, and involving the marginal degree of preference for industrial production $\frac{WP}{OW}$.

The degree of tariff protection will vary inversely with the country's ability to compete with foreign industrial producers and will vary directly with the national degree of preference for industrial production.

This model helps to explain the conditions under which tariff imposition by a small country may be considered a rational choice. The government seeks to maximize real income, which it does with tariff WT, and not real product, that is sacrificed in order to gratify the preference for collective consumption of industrial production.

In order to apply this model to the preferential trade issue, it is necessary to assume that industrial production is not one aggregate but a variety of products in which countries have varying degrees of comparative advantage. This variety allows countries to be both importers and exporters of industrial products, and in combination with the preference for industrial production, will motivate each country to practice some degree of protection. If the conditions for optimum tariffs (monopoly-monopsony power) and for export subsidies are excluded, a country can gratify its preference for industrial production only by protecting the domestic producers of import-substitutes. As previously, the condition for equilibrium is given by the intersection of VV' and RS''; however, the latter shifts upwards, at it includes an additional element not encountered in the previous case, namely the loss of utility from collective consumption of industrial production due to the decrease in industrial exports induced by protection. The costs of production in the industrial export sector are increased, because protection to the import-substitute sector raises: (i) the prices of factors of production common to both sectors and (ii) the costs of outputs of the protected sectors used as inputs in the export sector. The stronger are these effects of protection, the higher will be the marginal excess cost of industrial production; and they are likely to be larger, the larger the size of the industrial relative to the non-industrial sector, and the larger the size of the protected relative to the exporting industrial sector.

In a model of two countries, where one is a net exporter and the other a net importer of industrial products, reciprocal tariff reduction will bring

mutual gains insofar as it expands the exports of industrial goods by both countries. Contrary to the classical analysis, reduction of one's own tariffs is seen as a source of loss; but, on the other hand, a reduction of the other country's tariff is a source of gain, since it expands one's own industrial production and yields an increased flow of utility from collective consumption of industrial production. Reciprocal tariff reductions can be arranged by careful choice of the industries that will increase each country's industrial production while lowering its marginal excess cost, since they will increase each country's aggregate consumption goods at the expense of its consumptions of non-industrial goods. This process of tariff removal would not lead to full free trade — reciprocal tariff-cutting would proceed so long as each country could offer the other a tariff reduction that would increase the other's exports.

In a multi-country model, bilateral reciprocal tariff reductions may take place in a MFN or a discriminatory basis. The latter has the advantage over the former that it permits a country to offer its partner an increase in exports and industrial production without suffering any loss of its own industrial production, through diverting imports from the r.o.w. to the partner (trade diversion). Further discriminatory tariff reduction has the advantage over MFN reduction of yielding the partner the whole of any increase in the tariff-cutting country's imports (trade creation), whereas in the alternative case some of this increase would be shared by r.o.w. exporters. Therefore, discriminatory tariff reduction costs each partner less, in terms of the reduction in domestic industrial production incurred per unit increase in partner's industrial production, than does MFN tariff reduction. On the other hand, preferential tariff reduction imposes an additional cost on the tariff-cutting country — the excess of the cost of imports from the partner country over their cost in the world market. This additional cost will be negligible for slight preferential tariff reductions, while there must be some increase in the partner's industrial production if the preference is to benefit it. Therefore, it follows that a partial preferential arrangement is more likely to raise the real income of the preference-granting countries than a 100 percent preferential arrangement (FTA or CU).

However, the GATT rules prevent the formation of partial preferential arrangements while allowing for the formation of FTAs and CUs. In reality, the analysis of protectionism developed by H. Johnson shows that the protectionist intent is so obvious in the 100 percent across-the-board tariff reduction as in the partial reduction, the difference being one of less efficiency of the former in terms of raising the real income of partners.

P. Robson (1980,p. 50) agrees that the formation of CUs instead of partial
preferential arrangements results from institutional constraints. It would
be possible, by careful choice of industries and rates of tariff-cutting,
to have a mutual trade-diverting preferential area, such as to more than
compensate the increase in the costs of imports caused by replacements of
partners for r.o.w. suppliers with gains in collective utility associated
with the expansion of domestic industrial production. Therefore, it would
be possible for each partner to increase welfare even in the abence of trade
creation.

P. Robson (op. cit., p. 52), who follows M. Krauss (1972,p. 428) in this
respect, further argues that, if governments have the option of providing
direct production subsidies, CU will not be the most efficient protective
mechanism in the presence of industrial production as a public good. On this
view, an economic rationale for CUs could only be established if political
or other reasons denied to governments the use of subsidies, which avoid the
consumption cost of tariffs. A. El-Agraa (1983, p. 137) is right to point
out that this criticism, while legitimate, is related to a first-best view
of the world. Despite economic theory has demonstrated subsidies' superi-
ority relative to tariffs, all countries prefer the use of tariffs to sub-
sidies. The relevant alternatives for policy-making purposes are therefore
discriminatory versus MFN tariff reductions, or even versus maintenance of
the protective status quo, and this policy choice is what the introduction
of the "public good" argument attempts to clarify.

Two interesting extensions of the "public good" models may be considered.
The first one is related to the formation of preferential trade arrangements
covering countries with dissimilar degrees of development. H. Johnson (op.
cit., p. 276) explicitly dismisses this possibility when a collective pref-
erence for industrial production is present on both sides. A country will
be motivated to join a CU only if it judges that its industrial competi-
tiveness or comparative advantage in industrial production is strong enough
for its industrial production to increase within the union. Otherwise, it
will do better by staying out, unless a special arrangement is made that
allows it to maintain protection to domestic industry for some time, while
reaping the benefits of partners'market expansion for its few already com-
petitive export industries. This kind of arrangement was possible in the
early sixties with Portugal inside EFTA and, up to a certain extent, also
with Greece in her Association Agreement with the EEC. But the question be-
comes more complex if, instead of a single marginal preference function for

the whole industry, each country attach separate collective consumption
utility to different industries, due to reasons of prestige, regional lo-
cation, technological spill-overs, factor requirements, etc. When, as it
is presently the case with those two countries, and even Spain, face to
the EEC, the less developed economies tend to value more highly those in-
dustries that are typical of the more advanced industrial structures, it
is difficult to find an adequate compensation for tariff reductions in such
industries, especially if competitive differences are large. From the less
developed countries'viewpoint, trade creation is certain to occur, which
will inflict heavier losses on their real income than the gains obtained
with less valued industries'access to union markets. This difficulty calls
for a global management of the process of elimination of trade obstacles,
that integrates   compensation arrangements, specific cases of
"décalage" in tariff removal, and technical co-operation at the govern-
ments' and firms' levels. There are technological and consumers'preferences
considerations that make it possible for trade in the same industry to in-
crease simultaneously in both directions following reciprocal tariff reduc-
tion — intra-industry trade. Therefore, it seems possible to integrate less
developed economies into a more advanced group, with an approximately equal
distribution of benefits; but the task is more difficult and it requires
closer political affinities than a simple formation of a preferential trade
area, subject to the interplay of market forces.

The second extension of the theory was suggested by P. Robson (op. cit.,
p. 51) to take account of other kinds of public goods or objectives of
public policy that may affect a country's welfare, and that countries might
attain if co-operation on a regional basis (e.g. environment protection,
provision of new employment opportunities. more balanced regional distri-
bution of income, macroeconomic stability, etc.). With respect to such
objectives a similar trade-off may arise between static efficiency gains
and losses and other gains and losses associated with the satisfaction of
those "collective" preferences. From this broader perspective the evalua-
tion of integration would then demand "a more general cost-benefit analysis",
in which resource allocation efficiency would be only one of a number of
possible criteria that would have to be evaluated against others to arrive
at a global appreciation of social welfare effects. The problem with this
broadening of perspective is that we may loose contact with basic principles
of economic methodology, such as the explicits listing of assumptions and
the possibility of empirically testing the propositions. It is difficult
to transform a juxtaposition of claims made by different interest groups
(ecological, regional, unions, etc.), into a single preference function
for non-tangible goods. Without it, the economist may be unable to justify

how the welfare of society may be harmed by particular interests. As Johnson put it, "there is nothing in (my) analysis to prevent an economist (...) from insisting that the consumer's interest in low cost consumption, as contrasted with the producer's interest in high-priced production, deserves more representation in government policy-making than it usually receives" (op. cit., p. 278).

5.4. Preferential trade policies in the presence of domestic distortions in a single country

In general, a domestic distortion on the production side of the economy is said to occur when the marginal rate of transformation diverges from the domestic price ratio. This may arise as a result of either a monopolistic structure or of a production externality. Under monopoly, profit in the production of Y is maximized, when its output is set at such a level that domestic price equals the average cost of Y while exceeding its marginal cost. In symbols, this condition reads:

$$MRS_{xy} = MRT^f_{xy} = \frac{P_y}{P_x} = ART^d_{xy} > MRT^d_{xy}$$

When an increase in the output of Y generates a cost reduction in the production of X, we say that Y is characterized by production externalities or generates external economies. These may arise as a result of an improvement in skills, of technological spill-overs, etc. Therefore, when evaluating the costs of producing one unit of Y, a distinction must be made between the _social_ cost, which takes into account the reduction on the costs of other sectors, and the _private_ cost. In the case of an externality in the production of Y, the following relationship holds:

$$MRS_{xy} = MRT^f_{xy} = \frac{P_y}{P_x} = MRT^d_{xy} (p) > MRT^d_{xy} (s)$$

In the opposite case of external diseconomies (or negative externalities), like pollution, escessive urban concentration, etc., the social marginal cost of Y would be higher than its private marginal cost.

a) It is a non-contested proposition of the theory of optimal intervention[28]/ that the first-best policy to deal with a distortion in the production of Y, originating in a monopolistic market or in a positive externality, is a direct subsidy to the production of Y of a rate high enough to compensate for the difference between the domestic price and the socially-evaluated opportunity cost. This policy reestablishes full Pareto optimality without creating any new distortion. By contrast, a trade tax, either a tariff on the import of Y or an export tax on X, would create a new distortion between the marginal rate of foreign transformation and the domestic price of Y,

while correcting the divergence that originated on the domestic market.

This proposition may be illustrated by means of a simple diagram. In Figure 11.14, curve HH' is the <u>social</u> production-possibility frontier. Its slope at any point indicates the social opportunity cost at that point, which is assumed to diverge from its <u>private</u> evaluation.

Figure 11.14
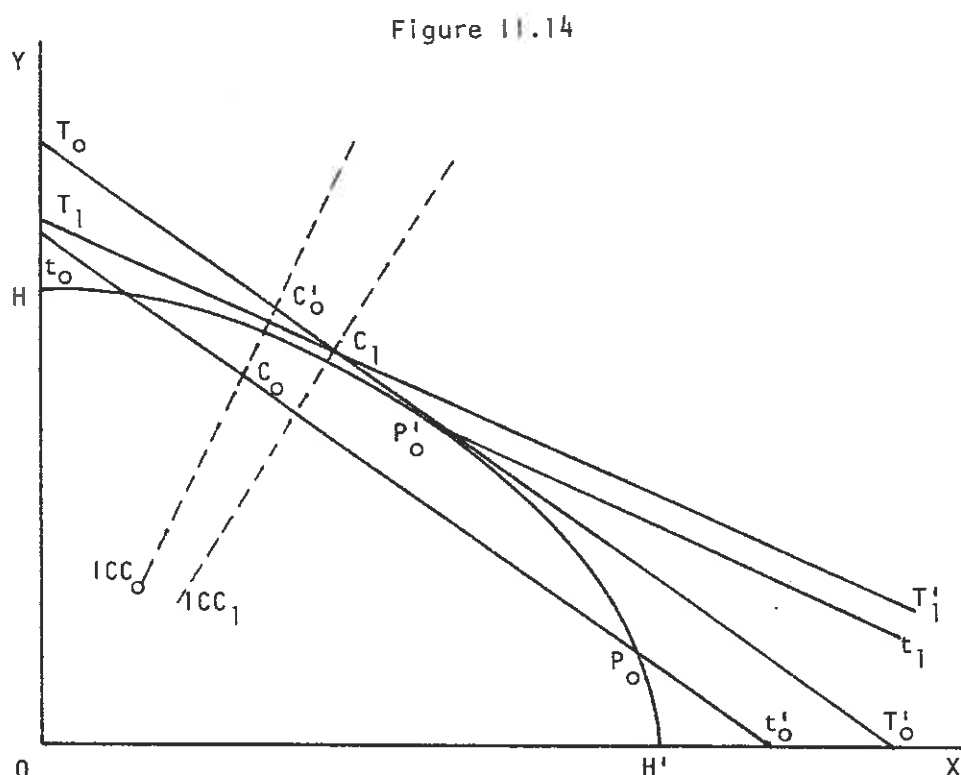
Let us suppose that a positive externality occurs in the production of Y. Then, at point P_o, for instance, the social marginal rate of domestic transformation of X into Y, as given by the slope of curve HH' at P_o, is lower than the private marginal cost of Y, as given by the slope of the line $t_o t_o'$. Assuming that trade with the outside world is carried out without obstacles, the country will produce at P_o and consume at C_o, if the international terms of trade are given by $t_o t_o'$.

This is clearly not a Pareto optimum. If the terms of trade are kept constant, welfare could improve to a maximum at consumption point C_o'. This is the point on the country's income-consumption curve ICC_o (assuming that domestic price does not change) that intersects the most favourable consumption-possibility frontier that the country can reach given the actual terms of trade, given by the slope of line $T_o T_o'$, paralell to $t_o t_o'$. In order to reach this optimum, resources must be transferred to the production of Y, and the production equilibrium must shift from P_o to P_o'. However, at this latter point, the private marginal cost of Y (as given by the slope of $t_1 P_o'$) is higher than the domestic price $T_o T_o'$. In order to cover the potential loss

for private producers of Y caused by this situation, a subsidy must be given the optimal rate of which should equal the difference between the slopes of $t_1 P_o'$ and $T_o T_o'$, i.e. the difference between the social and the private marginal costs of Y.

An equivalent shift in the production locus might be obtained by means of a tariff on the imports of Y, that increase its domestic price, by the same rate. However, the price paid by domestic consumers would also increase, which introduces a new distortion between the marginal evaluation of Y by consumers and the social evaluation as measured by the opportunity cost. The consumption locus C_1 is determined by the intersection of ICC_1 (corresponding to the domestic price of $T_1 T_1'$) and the terms-of-trade $T_o T_o'$. It may be verified that C_1 is on a lower welfare contour than C_o', if we imagine an indifference curve tangent to $T_1 T_1'$ at C_1 and compare it with a non-intersecting indifference curve tangent to $T_o T_o'$ at C_o'. The latter has to be situated further away from the origin than the former.

Our two alternative policies would result in the following situations:

- a direct subsidy on the production of Y (or a tax on the production of X):

$$MRS_{xy} = MRT_{xy}^f = MRT_{xy}^d \ (s) = \frac{P_y^*}{P_x^*} \ < \ \frac{P_y}{P_x} = MRT_{xy}^d \ (p)$$

- a tariff on the imports of Y (or a tax on the exports of X):

$$MRT_{xy}^d \ (p) = MRS_{xy} = \frac{P_y}{P_x} \ > \ \frac{P_y^*}{P_x^*} = MRT_{xy}^f = MRT_{xy}^d \ (s)$$

While the particular situation illustrated in Figure II.14 clearly shows point C_1 to be superior to C_o in welfare terms, it is not necessarily true that tariff protection will result in a better situation for the community than free trade, when a domestic distortion is present. According to the well-known theory of second-best, developed by R. Lipsey and K. Lancaster (1956-7), no a priori judgement is possible when two sub-optimal economic states are compared in welfare terms.

b) Despite their theorical superiority, subsidies are often replaced by tariffs in real world policies. There may be several economic reasons, not usually considered in conventional analysis, that justify that option. They were extensively discussed in W. Corden (1974). One of the most relevant drawbacks of subsidies is that they must be financed by additional taxes, if it is assumed that the budget balanced independently of the existence of market distortions. Also, the collection of additional taxes may raise costs, either in the form of increased bureaucratic expenditures, or of more/efforts of fiscal evasion by tax-payers. It is also to be reckoned

that the imposition of a tax might induce new distortions, either by
changing the relative domestic price of commodities, or by influencing the
prices paid for the productive factors. Furthermore, the disbursement of a
subsidy to a particular industry may increase the costs of bureaucracy, not
to mention the possibility of corruption and the extra-costs implied by its
control and punishment. Finally, the income distribution effects (from tax-
payers to producers, inter-regions, from agriculture to industry, etc.) of
these alternative policies may be considered so important as to outweigh
the pure cost evaluations. W. Corden (op. cit., pp. 43-54) thoroughly ex-
amined the consequences of introducing each of these constraints on the use
of subsidy-cum-tax policies. He demonstrated that only the removal of the
assumption of zero costs of subsidy disbursement would seriously affect the
main argument about the superiority of subsidies over tariffs. There are
however others reasons, outside purely economic considerations, that may
justify the popular support enjoyed by the use of tariff protection. The
absolute lack of minimal bureaucratic infra-structures in poor countries
may make tariffs a more attractive policy instrument. Not only does the
use of tariffs avoid the problem of finding new ways to raise taxes, but
also the tariff itself constitutes a source of final revenue, that is usual-
ly much more simple and cheaper to implement than income or sales taxa-
tion. Political constraints may also favour the protectionist alternative.
It may be politically desirable to maintain a small-sized budget as a way
to reduce the government intervention in the economy; or alternatively, a
hostile reaction to tax increases may arise, which is normally not the case
with a tariff. Its effect on prices is perceived by consumers in a more
diffuse manner, and besides, ideological constraints are usually effective
when they stress the need to "defend national labour" or to overcharge sump-
tuary consumption of "foreign goods".

c) Once dismissed the first-best policy of subsidies financed by taxes, we
are left with the question whether different rates of tariff protection
may produce variable degrees of second-best welfare situations. In general,
it is not possible to establish an analogy with the subsidy-cum-tax policy
case and state that the optimum (second-best) tariff is equal to the dif-
ference between social and private marginal costs at the optimum production
locus. If the tariff rate is progressively reduced from this rate, two
effects will result. In first place, as the domestic price of the protected
good decreases, resources will be diverted to the production of the other
good. Welfare deteriorates, as production externalities are associated to
the protected good. Secondly, the divergence between the domestic price of
the protected good and its marginal rate of substitution in consumption is

reduced. Welfare improves, as consumers are enabled to consume more of the import good. A whole set of possible consumption bundles can be defined by making the tariff rate vary from zero to the level where it equals the difference between social and private marginal costs. In graphic terms, such a set is represented by the so-called Meade curve[29/], and the point where this curve reaches the highest possible social indifference curve indicates the (second-best) optimal consumption locus, which is associated with the (second-best) optimum tariff. It is not possible for this tariff rate to exceed the diference between social and private marginal costs at the optimum production locus. Otherwise, not only would the consumption distortion be aggravated, but also the economy would shift away from the production of the good that yields external economies.

A (second-best optimum) tariff t_o in the presence of externalities is situated between the maximum rate that would completely eliminate the production divergence, and the zero rate that would maintain it, so as to optimize the trade-off between consumption costs and production gains from the externality. Maximization of social welfare, once first-best policies are dismissed, requires that the initial divergence be only partially corrected. In more precise terms, the optimum tariff is such that the marginal consumption loss is just equal to the marginal production gain (socially evaluated). The final equilibrium is one of less than optimal output of the protected good and less than optimal consumption of the same good, such as to make:

$$\mathrm{MRS}_{xy} = (1+t_o) \frac{P_y^*}{P_x^*} = \frac{P_y}{P_x} \;\rangle\; \mathrm{MRT}_{xy}^f \;\rangle\; \mathrm{MRT}_{xy}^d \;(s)$$

So far, we have been assuming that the economy is overspecialized in the commodity that holds comparative advantages. Other possibilities might be explored; however, they would not affect the main results significantly. H. Johnson (1965 b) examined the case of external economies in the production of the good in which the country has comparative advantages. In this case, the country may be specializing either in the wrong direction, i.e. exporting the commodity with a comparative disadvantage, or in the right direction but to a suboptimal extent; all depends on the relative level of the terms of trade. Given the former possibility, the initial distortion may be corrected by tariff protection (once subsidies are ruled out). This policy would achieve self-sufficiency, and the net effect might be a gain or a loss, depending or whether or not the production gain outweighs the consumption loss. Given the second possibility, an export subsidy would increase output of the export good at the expense of domestic consumers, for whom its price would increase above the world level. Again, there is a trade-off between underexploitation of external economies and reduction

of the consumption costs, which should produce an optimum export subsidy.

d) In the following pages, we shall examine the effects of preferential tariff reduction in a general equilibrium type of model revealing domestic distortions in the production of either good. We shall also inquire into the possibility of finding an economic rationale for preferential policies as compared with non-discriminatory tariff reduction and second-best imposition of an optimum tariff. The analysis is conducted in general terms so as to cover both the case of externalities and of a monopoly market, and no distinction will be made between CUs and FTAs, except where it is relevant for the conclusions.

Let us start by the case of overspecialization represented in Figure 11.15. Country A exports good X, but under free trade too little of good Y is produced. Sub-optimal points P_o and C_o, standing for the production and the consumption loci respectively, illustrate this situation. Consumption bundle C_1 is assumed to be welfare-maximizing given a non-discriminatory optimum tariff on the imports of Y, and the production locus is set at P_1[30/].

According to the model developed earlier in Section 5.2, if country A forms a preferential trade area with B, and trades with it only, its terms of trade will improve up to the level of B's domestic price ratio; if A imports Y from B and C it will suffer pure trade diversion and terms of trade will deteriorate. In the first case, an ambiguous result will arise. Welfare in country

Figure 11.15
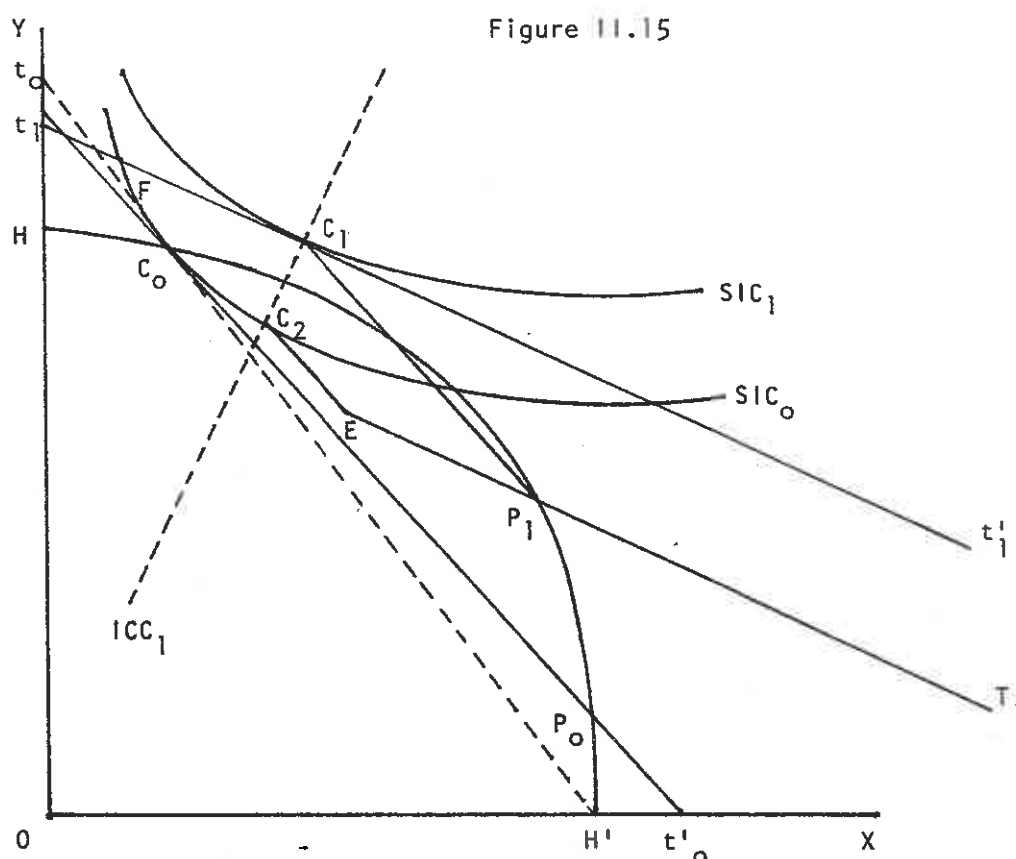
A will tend to improve, thanks to better terms of trade; but the higher price paid to exporters will encourage further production of the export good, thereby shifting resources from the production of the good with positive external effects. An extreme situation might be illustrated with a "corner" solution at point H'. Country A would specialize entirely in the production of X, and its final welfare situation would depend solely on the terms of trade achieved. If superior to the slope of line H'F, the country would be at least as well off as under free trade conditions. Eventually the resultant effect may be an improvement in the country's situation in comparison with the initial protection state, if the domestic price ratio prevailing in B is high enough to allow consumption equilibrium at A to reach a point above indifference curve SIC_1. In the second case, country A will trade with partner country B up to a certain extent, at its own domestic price ratio as set by its tariff rate. If this ratio is represented by the slope of $t_1 t_1'$, the distance $P_1 E$ shows the trade flows between A and B and the remaining distance EC_2 shows trade between A and C. Point C_2 will be the final consumption equilibrium and is determined by income-consumption line ICC_1, which remains unchanged relative to the situation of non-discriminatory protection. In comparison with this situation, country A suffers an unequivocal loss due to worsened terms of trade. The fact that C_2 falls accidentally on SIC_0 indicates that the preferential arrangement might leave the economy worse off than under free trade.

e) Let us examine now the case of insufficient specialization. Country A exports and produces too little of good X, under free trade conditions. If production subsidies are dismissed, a second-best optimal solution would be achieved by imposing a production tax-cum-subsidy on the Y sector or alternatively by granting an export subsidy to X. In Figure 11.16 free trade leads to the equilibrium at P_0 and C_0. An export subsidy equal to the difference between the slopes of $t_1 t_1'$ and $T_0 P_1$ would increase the price paid to domestic producers so as to shift production to P_1, while maintaining the export price at the level given by the slope of $T_0 P_1$. Due to the increase in the price of X, consumers shift their equilibrium point upwards to C_1, where the indifference curve SIC_1 is tangent to a line (not drawn) with the same slope as $t_1 t_1'$.

The only possibility with practical interest is the one where A competes with the rest of the world in its partner's market, and is able to sell X at the price determined by its partner's tariff. Otherwise, one would have to assume that country A would have to impose a tariff on imports of Y, which is clearly irrational (in Figure 11.16 that would lead to autarky and an inferior welfare level).

If B's domestic price ratio is represented by the slope of the vector $C_1' P_2$ (flatter than the slope of $t_1 t_1'$) country A is able to reach the same welfare

Figure 11.16

level as with the domestically financed export subsidy. Therefore, for any union (or FTA) internal price ratio higher than that, country A will be left better off than under unilateral trade policy. A lower price ratio for the good X will leave A at a lower welfare level than that given by SIC_1, but still higher than under a free trade situation.

From country A's viewpoint, there are two gains involved in the formation of a trade-diverting preferential trade area, relative to the free trade situation. If the price ratio changes from $t_o t_o'$ to $C_1' P_2$, the consumption locus shift from C_o to C_1', and this movement may be separated into two different steps. One is a shift from C_o to C_o' (supposedly situated on the same income-consumption line) and represents the gain associated with the shift of resources towards the production of the good that yields external economies. The other is the shift from C_o' to C_1', and represents the gain in pure terms of trade improvement.

f) Several authors have attempted to find an economic rationale for the formation of a customs union or a free trade area using the general equilibrium framework, but explicitly introducing market imperfections. Although the argument runs very much along similar lines, some important differences in results deserve to be examined.

A. Dutta (1969) found out that a relativelly small country will reap the maximum advantages from the formation of a preferential trade area, since the partner's tariff will act as a subsidy on its trade without imposing on it the necessity of bearing the cost of a subsidy. Irrespective of either the direction or the extent of the distortion in its domestic market, the country that competes with the outside world in its partner's market gains unequivocally with the preferential trade arrangement. The illustrated argument[31/] suggests identical results whether the distortion operates in the import-substituting on in the export sector. This conclusion, however, does not agree with our previous findings that, when the externality (or monopoly) is associated to the production of the import-competing good, the terms-of-trade gains must be weighed against the losses due to an inferior exploitation of the externality (or to a larger divergence between monopoly price and opportunity cost). Furthermore, Dutta's assertion that the country who trades simultaneously with the partner and the r.o.w. might be affected favourably or adversely by the formation of a preferential trade area, is only true if the alternative is restricted to a free trade policy. A non-discriminatory tariff imposed at the optimum rate will achieve superior welfare levels in the case of the domestic distortion being associated to the import-substitution sector.

A. El-Agraa and A. Jones (1981, pp. 54-8) examined the effects of alterna-
tive trade policies in the presence of domestic distortions in the produc-
tion of the import-substituting good, assuming the existence of constraints
on the use of first-best domestic policies. Furthermore, they assumed per-
fectly elastic supply curves in the partner and in the r.o.w. They conclude
that the imposition of a non-discriminatory tariff at an optimal rate is a
superior alternative to any other different trade policy choice. Among these,
membership of a CU or a FTA appears unambiguously worse than either the pre-
ferential lowering of the tariff on imports from the partner to a level so
as to cover just the difference between costs in the partner and the r.o.w.,
or the unilateral non-discriminatory tariff reduction from the optimal rate
to that same level. In addition to the loss of socially evaluated producer's
surplus, membership of a preferential trade area entails maximum trade di-
version. In a similar framework, E. Yu and G. Scully (1976) arrive at appar-
ently different conclusions. They demonstrate, both mathematically and graphi-
cally, that trade diversion may still be welfare-improving, in the presence
of domestic distortions, when compared to a non-discriminatory tariff. Of
course, the different conclusion depend on the initial choice of values for
such variables as the rate of distortion, the optimum tariff, the initial
terms of trade, etc.

It is possible to show how contradictory results can be, by assuming
different values for the private opportunity cost. Figure 11.17 represents
a similar situation to the one depicted in Figure 11.15. The home country
imports commodity Y, whose production has external positive effects on the

Figure 11.17
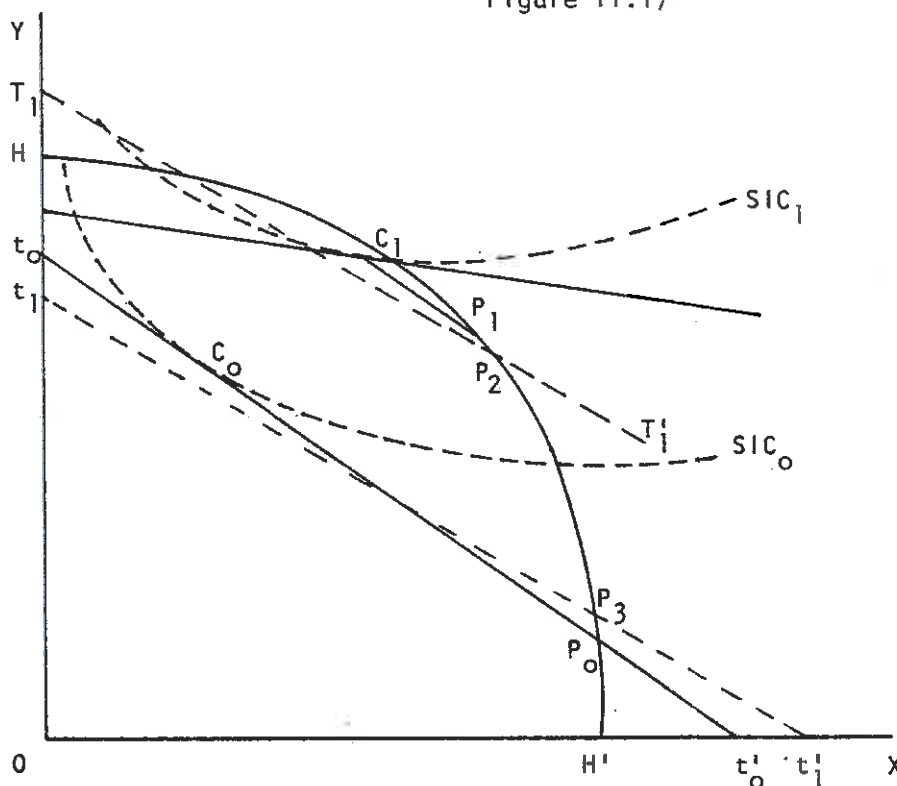
economy. Again, points P_o and C_o indicate the equilibrium situation under
free trade, whereas P_1 and C_1 indicate the situation that an optimal tariff
might reach. The slope of the lines $t_o t_o'$ and $C_1 P_1$ is the same and indicates
the terms of trade at which this economy purchases good Y and exports X be-
fore the preferential trade arrangement is introduced. Now, if, following
this arrangement, the country entirely diverts its imports from the r.o.w.
to the partner (both supply elasticities being assumed infinite), the terms
of trade shift unfavourably. As no protection is given towards imports ori-
ginating in the partner country, the production equilibrium locus after the
preferential arrangement will be set at the point where the privately evalu-
ated opportunity cost of Y equals the partner country's price (assuming
transport costs to be nil). Two extreme situations are depicted in Figure
II.17. In one, the slope of line $T_1 T_1'$, representing the partner's export
price ratio,is assumed to have the same value as the private opportunity
cost of Y at point P_2. Consequently, this will represent the production
combination reached after the preferential arrangement. The consumption
combination will be located somewhere along broken line $T_1 T_1'$, possibly
above curve SIC_1.   If this happens, the country will reach a welfare
situation that is higher than the one it might have reached under non-dis-
criminatory protection. In this case, the consumption and production gains
derived from the removal of the tariff constraint in the domestic market
outweigh the losses associated with the deterioration in terms of trade
and with the minor differential between private and social costs. This is
basically the case presented by Yu and Scully. In the other situation, the
same partner's export price/equals $(t_1 t_1')$ the private opportunity cost at P_3. What-
ever the consumption point on this line, it will leave the economy worse off
than under free trade, since it will be situated below indifference curve
SIC_o. This is basically the case presented by El-Agraa and Jones.

5.5. <u>Preferential trade policies in the presence of domestic distortions</u> <u>in the home and the partner countries</u>

Having assessed the welfare consequences of preferential trade arrangements
upon individual economies with domestic market distortions,now we consider
the joint effects on both the home and the partner economies. An initial
assumption is convenient in order to reduce the number of cases that we
have to work with: The market imperfections are assumed to affect the same
sector in each economy, so that if the social opportunity cost of X is lower
than the correspondent private cost in country A, it will also be lower in
country B, but not necessarily by the same differential rate. This assump-
tion seems especially realistic in the case of external economies.
If an industry is supposed to have beneficial cost effects over others in
one country, the same supposition is admissible for other countries. Coun-

tries A and B will still be considered as the home and the partner, respectively, with opposite patterns of comparative advantages, and only B is engaged in trade with the r.o.w.

a) Two cases will be considered. The first one assumes that the externality is associated with the production of commodity X. This means that if no interventionist policies are used, the export industry of country A and the import-competitive industry of B will operate at lower social opportunity costs than their respective domestic price ratios. In the second case, the externality is assumed to fall on industry Y.

Figure II.18 shows two quadrants, one for each economy. Lines $t_o t_o$ and $t'_o t'_o$ have the same slope, and indicate the (constant) world terms of trade. At domestic prices given by these lines, both economies operate on sub-optimal positions; P_o and C_o are the relevant points for such a position in country A, and P'_o and C'_o are their equivalents in country B. Distance $P'_o E'_o$ is equal to $P_o C_o$ and indicates the amount of B's trade that is carried out with A.

According to the reasoning already explained, the formation of a preferential trade area between A and B would leave A clearly better off, since it would

Figure II.18
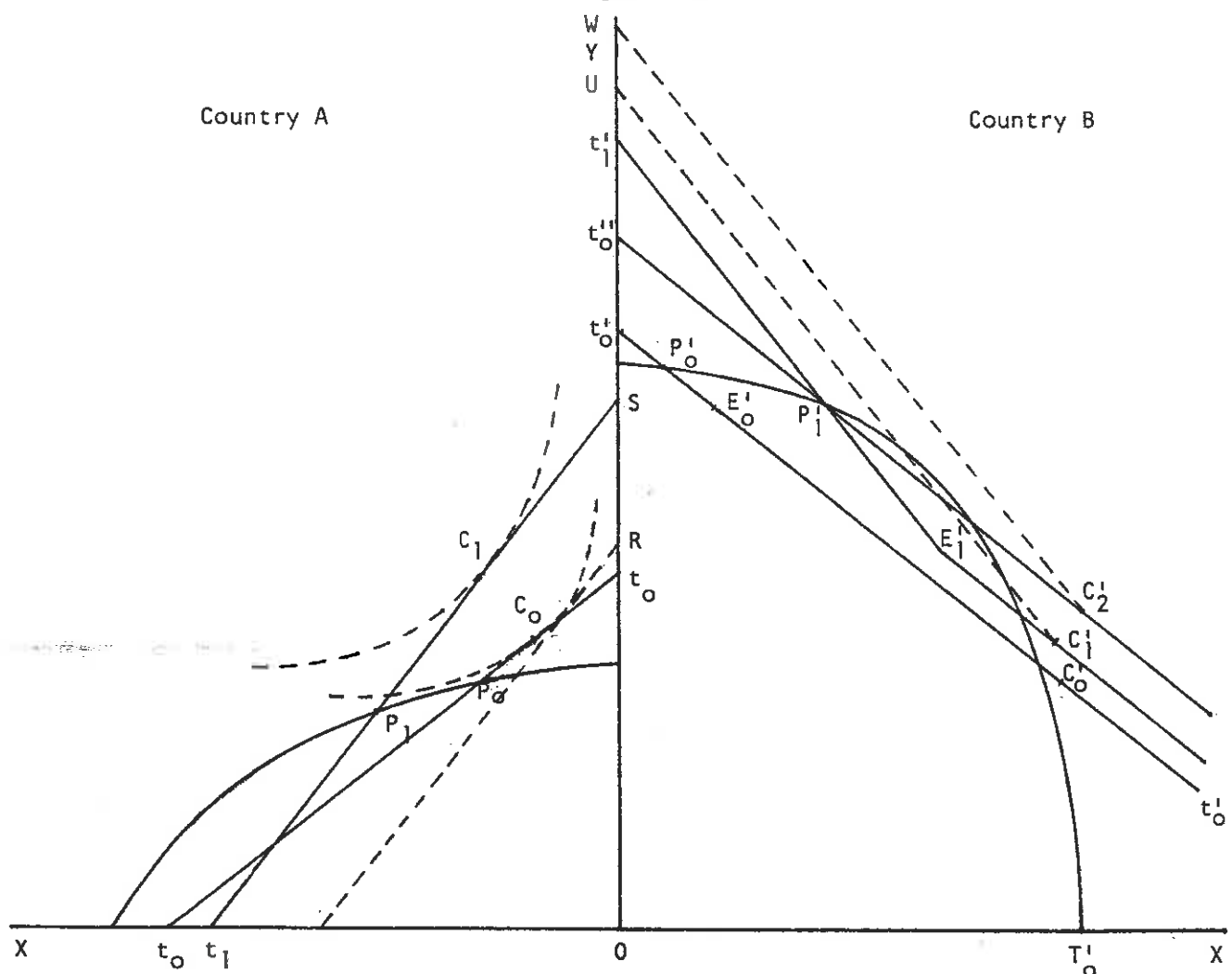
simultaneously enjoy exchange and externality gains. As for country B, if the partial terms of trade loss is not enough to outweigh the externality gains it will also be left on a superior position relative to the free trade situation. Figure II.18 depicts this situation, with country B trading with A from production point P_1' up to E_1' and then satisfying extra-demand for X in trade with C. Trade diversion from A to C has occurred, but the final consumption situation C_1' is clearly superior to C_0'.

On the other hand, if each country is allowed to implement optimal trade policies, the general superiority of preferential trade policies cannot be proved. As we saw in the last Section, the formation of a preferential trade area with B allows A to trade at the partner's domestic price ratio, which may or not leave it in a better welfare position than by applying an optimal export subsidy. However, country B will always prefer a non-discriminatory tariff at an optimal rate which will set consumption at C_2'. The difference in welfare between this situation and that obtaining with preferential trade (point C_1') is explained entirely by the terms-of-trade deterioration.

A different ranking of policies arises if the export subsidy alternative is barred by some international constraint[32]. In this event, the formation of a preferential trade area with B would function as a replacement for the export subsidy, since it would allow country A to produce a greater output of X than under free trade conditions. The trade diversion costs borne by country B would be set against a lump-sum form of compensation, which would leave it better off than under a non-discriminatory tariff. By using the Hicksian concept of compensating variation, we can measure the gains to country A from preferential trade as distance RS[33] in terms of good Y. The loss for country B arising from the acceptance of a preferential arrangement, instead of an optimum (second-best) tariff (equal to the difference between the slopes of $t_1'E_1'$ and $t_0''\,C_2'$) is measured by distance UW. Therefore, as RS $>$ UW, there is scope for a mutually beneficial preferential arrangement[34].

b) In our second case, we assume that the production externality is associated with A's import-substituting sector and with B's export sector. It follows from the discussion in the last Section that the formation of a preferential trade area leaves country B in a less favourable situation, relative to free trade conditions, since it would suffer losses due not only to worsened terms of trade, but also to a decrease in the output of the good yielding positive externalities. For country A, the results are ambiguous, terms-of-trade gains being perhaps outweighed by the (social) costs of shifting resources away from the import-substituting sector. Con-

sequently, a preferential trade arrangement can hardly be considered a rational choice from the joint point of view of A and B.

It may be interesting to study the alternative of forming a CU that subsidizes its exports to the r.o.w.[35/]. In order to exploit the external economies in the production of Y, country B must incur higher costs than the world price. The differential may be covered by a subsidy that is applied to B's exports to the r.o.w. A CET on the imports of Y would give the same result when it comes to B's exports to partner A. While suffering terms-of-trade losses, country A is now able to produce more of Y and to enjoy the cost-reducing effects of externality into a larger extent.

The situation in the two countries is represented in Figure 11.19, where the slopes of lines $t_o t_o$ and $t_o t_o'$ are equal and indicate the world terms of trade. The intoduction of a CET has the effect of increasing the price of Y in A's market to the level given by the slope of $t_1 R$. The volume of trade that A undergoes with B is reduced to distance $P_1 C_1$, as A produces more of the import - substituting good. In country B, it is the production of the exported good that expands, thereby increasing B's foreign trade. At P_1', the (privately evaluated) opportunity cost of Y equals the domestic

Figure 11.19
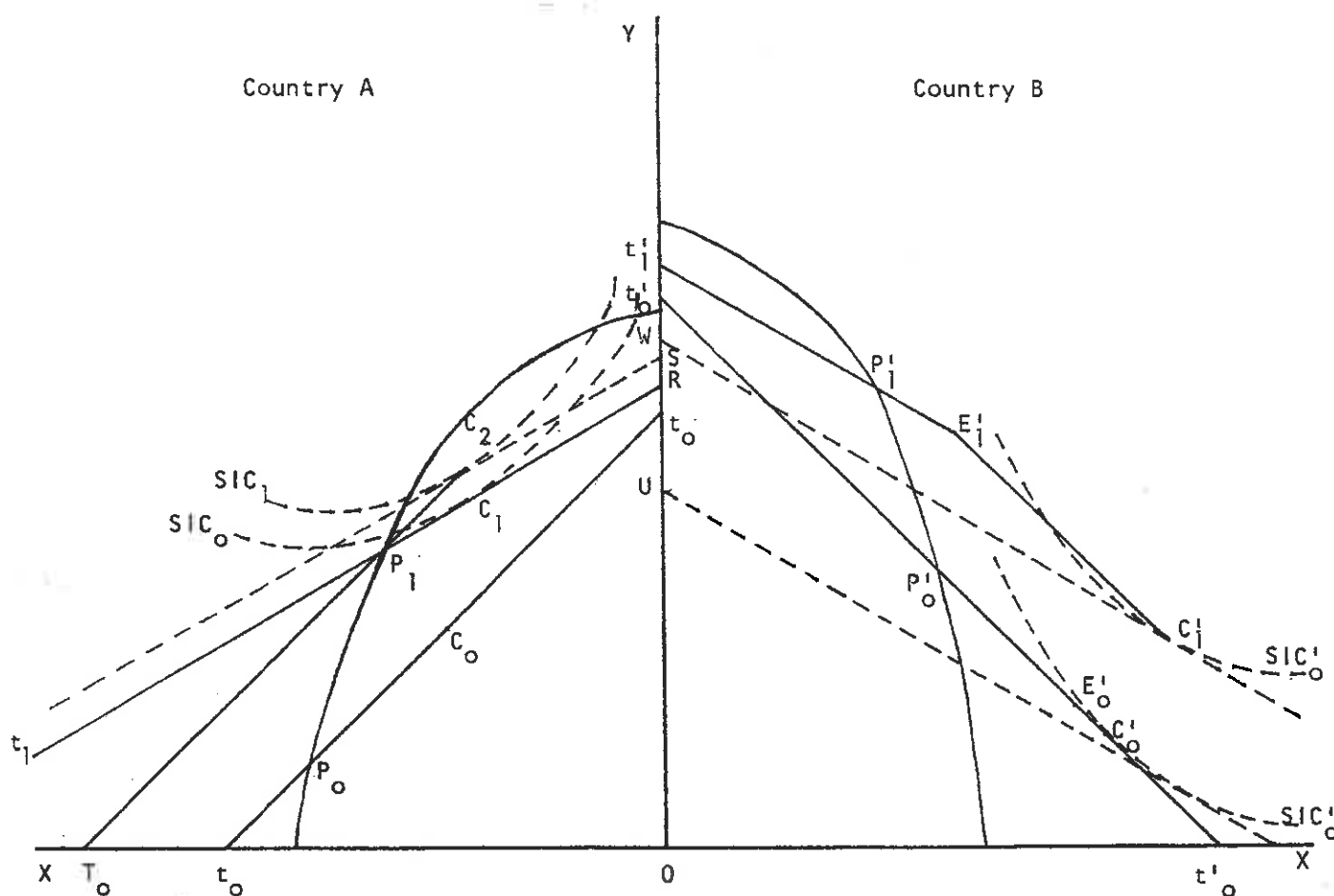
price of Y in the protected partner's market. B trades with A from P_1^1 up to point E_1^1 (distance $P_1^1E_1^1$ equals $P_1^*C_1$) and then with C up to point C'_1 [36/]. Relative to the free trade situation, the final situation of country B is obviously more favourable. Not only by increasing the output of good Y, does it reach a better allocative combination, but also it improves its terms of trade partially in its trade with the partner. Measuring the initial and final welfare levels in terms of units of Y, using post-union relative prices, distance OU representes the free trade real income (broken line from U is tangent to the indifference curve passing through C'_0), and distance OW represents the level of income reached with a union subsidy.

The welfare effects for country A are not so obvious. In the first place, point C_1 might fall below the welfare level associated to C_0, if the allocative gain is not large enough to outweigh the terms-of-trade loss. In the second place, the imposition of a non-discriminatory tariff would certainly leave country A at C_2 on a superior consumption equilibrium compared to C_1. Using the same measurement criteria, we may calculate the value of real income to be forgone by country A, when deciding to joint the customs union instead of adopting non-discriminatory protection, as distance RS. Therefore, as UW $>$ RS, in the present case, country B might compensate country A by a sum at least equal to RS and still enjoy a superior welfare position.

5.6. Scale economies and domestic distortions

When successive increases in the scale of a firm's output give rise to decreasing costs per unit produced, the firm is said to have scale economies to exploit. Their justification lies in the increasing productivity that accompanies an extended division of labour inside the firm,   the existence of material indivisibilities and   the declining costs of some inputs with volume or quantity (A. Jacquemin, 1975, pp. 15-19). This concept of static economies of scale must be distinguished from dynamic economies, which result in falling costs as the length of time over which output has been processed increases. This effect is generally associated with the learning process that most firms are supposed to undergo in their initial stages.

Dynamic economies of scale have been in the core of the "infant-industry" argument for protection. They provide justifications for special arrangements inside CUs or FTAs that maintain under tariff shelter certain activities supposed to hold potential comparative advantages, until they reach maturity. Static economies of scale, on the other hand, have been regarded as one of the most powerful justifications for the formation of preferential trade areas. The most innovative literature in this respect was H. Grubel

(1967) and W. Corden (1972), which will be the main source for our study, along with more recent contributions, such as E. Al-Agraa and A. Jones (1981, pp. 67-72).

a) The existence of static economies of scale internal to the firm per se does not justify the use of tariff protection. In addition, it is necessary to assume that the firm's output is associated to an external economy or to a "public good", and that institutional constraints prevent the use of first-best policy based on domestic subsidies to production. The conditions under which a tariff may be justified in order to enable domestic producers to fully exploit scale economies, are represented in Figure 11.20. Curve PP' is the average cost curve of domestic producers of X as it is evaluated by themselves, while curve SS' represents the socially evaluated average costs per scale of output. Curve DD' is the income-compensated domestic demand curve and line WW' is the supply curve of the r.o.w. If there were no divergence between private and social costs, the optimal policy would be free trade, that enables domestic consumers to purchase OQ_3 units of X at price OW. This amount is totally imported, as domestic producers cannot supply any unit of X below OW without suffering losses. The consideration of the social costs of producing X (curve SS') justifies the imposition of a tariff on the imports of X at such a rate as to allocate the whole domestic market to domestic producers. Let this rate be $\frac{WT}{OW}$. That will increase the domestic price of X to OT, and decrease consumption to OQ_2 units, which will be entirely serviced by domestic supply. In relation to the free trade

Figure 11.20
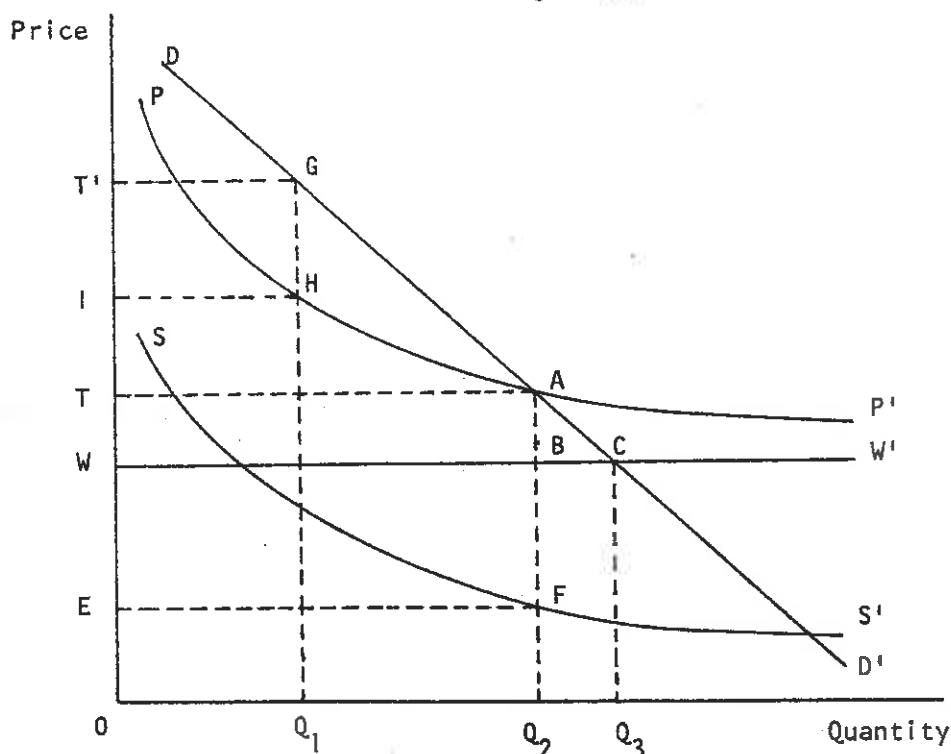
situation, tariff protection entails a net loss in consumer's surplus, equal to area ABC. In compensation, there is a (socially valued) production gain, which is defined as the volume of production multiplied by the amount by which socially valued average costs fall below the world price level. In the case presented in Figure 11.20 this gain is measured by area EWBF which clearly outweighs the consumption loss. Consequently, the tariff has produced a more favourable situation than free trade.

In fact, tariff rate $\frac{WT}{OW}$ is the optimum rate, i.e. the rate that maximizes welfare in the present circumstances. Any rate lower than that would fail to have any protective effect, since imports would continue to be more competitive than local substitutes, given the initial size of domestic demand. And any rate higher than $\frac{WT}{OW}$ would result in a greater consumption loss (because domestic price increases), and in a smaller social production gain (because output decreases). Suppose that there is just one producer, that acts as a monopolist. His profits will be maximized at the output level OQ_1, which satisfies the equality between marginal costs and marginal revenue (not represented graphically). If the monopolist has the control of tariff policy, he will establish a tariff rate of $\frac{WT'}{OW}$, which will enable him to service the entire domestic market at the profit-maximizing price of OT'. Community welfare is now lower, and the producer earns excess profits measured by area IT'GH.

The optimum tariff can only be $\frac{WT}{OW}$. This is also called the made-to-measure tariff,   that is defined as the tariff rate which just enables domestic production to supply the whole domestic market without the opportunity to raise excess profits. It is therefore the rate which is required to raise the foreign supply price to the level at which domestic average costs equal average revenue.

b) In the present Section our objective is to evaluate the welfare effects of preferential trade policies in the presence of scale economies and domestic distortions, in comparison with alternative trade policies and free trade. Therefore, it is convenient to assume that initially non-discriminatory tariffs are set at an optimum rate. We consider two economies — A, the home country and B, the partner — that produce good X domestically in conditions depicted in Figure 11.21. Curves $P_A P'_A$ and $P_B P'_B$ represent the privately valued average cost curves in countries A and B, respectively, while broken curves $S_A S'_A$ and $S_B S'_B$ represent the socially valued average cost curves in the production of X. Demand size is assumed identical in the two countries, and is given by curves DD_A and DD_B. Line WW' represents the supply curve of the r.o.w.

Initially, countries A and B produce good X at different domestic prices,

Figure 11.21

a) Home Country   b) Partner Country

which reflect different levels of efficiency. In country A, OQ_1 units of X are produced and consumed at the price OT_A, which implies a "made-to-measure" tariff equal to $\frac{WT_A}{OW}$. In country B, the production of OQ_1^* units of X requires a higher tariff, equal to $\frac{WT_B}{OW}$. Now, if a CU (or FTA) is formed between the two countries, country A will capture the entire union market, due to its superior efficiency. If we add horizontally the two demand curves, we obtain the union demand curve represented by curve DD_{A+B}. As A's producers are now serving a larger market, they exploit internal scale economies and reduce costs from OT_A to OT_u in the production of OQ_2 units of X. Suppose that the CU adopts also the "made-to-measure" principle in fixing the CET at the rate $\frac{WT_u}{OW}$: then, the domestic price in country A falls with the reduction in costs. For country A, the following welfare effects arise in comparison with the pre-union situation:

     i) The fall in the domestic price causes a gain in consumer's surplus. This is a classical trade creation effect, that is measured by the area of triangle 2.

     ii) The expansion in the domestic output of X will increase the socially valued production gain. It is now measured by the area of rectangle 4, excluding the area 3, which corresponds to the gain already obtained before

the formation of the CU.

iii) A cost reduction effect arises from the exploitation of scale economies, which is measured by the area of rectangle 1. It is defined as the volume of initial output multiplied by the difference in average costs between the initial and final output scales.

Consequently, the formation of the CU in the present conditions represents an unambiguous source of welfare gains for country A. What is the situation from country B's viewpoint? With the CU, domestic producers are replaced by partner's competitors, and the price falls to the level of the CET, OT_u. The following welfare effects arise:

iv) A trade creation effect measured by the area of triangle 2^*.

v) The elimination of the socially valued production gain given by rectangle 3^*.

vi) A cost reduction effect equal to area 1^*.

To assess the net welfare effect on country B, we have to weigh gains against losses. Even if effect v) is greater than effects iv) and vi), this net loss might be compensated by country A, so that the formation of the CU were mutually beneficial. Otherwise, we can think of both economies as being complementary in the sense that the distribution of industries holding intra-union comparative advantages and benefiting of scale economies is more or less balanced between the two. The formation of a CU in this case would also be mutually beneficial.

c) We have been assuming that the CU applies the "made-to-measure" principle in setting its CET. This assumption is too strict for two reasons. First, it does not contemplate the case of a FTA, where for obvious reasons a time lag exists between the change occurred in the conditions of supply and the tariff adjustment. Second, the level of the CET is usually set according to some a priori rule, as the averaging of individual members' tariffs, or the lowest tariff among members, and does not contemplate especial cases affected by scale economies. Consequently, it is necessary to study the effects of a preferential trade area, when that assumption is lifted.

For simplicity, let us assume that a CU is formed whose CET is set equal to the lowest tariff among members. In comparison with pre-union non-discriminatory protection, this means that the domestic price in A's market (OT_A) will not change, whereas the domestic price in the partner's market will fall from OT_B to OT_A. Consequently, home consumers will keep demanding OQ_1 units of X, whereas the fall in B's price and the replacement of B's domestic producers will increase total demand facing A's producers by the amount Q_1Q_2. The production of OQ_2 units of X in country A lowers the average cost

to OK, below the level at which the domestic price is set by the CET. The following welfare effects arise for country A (see Figure 11.22):

i) There is a cost reduction effect corresponding to the output OQ_1, that is measured by rectangle 1.

ii) Since average costs are lower than the domestic price, the difference represents excess profits, which are measured by the area of rectangles 1 and 2, and are earned by A's domestic producers.

iii) The socially valued production gain increases by an amount equal to the area of rectangle 4,/ minus the area 3 due to the expansion in domestic output.

In what concerns country B's welfare, the effects are the following:

iv) There is a cost reduction effect, measured by the area of rectangle 1^*, corresponding to the decrease in resources needed to produce the initial amount consumed in B — OQ_1^*.

v) There is a trade creation effect, measured by area 2^*.

vi) There is a socially valued production loss, measured by rectangle 3^*.

vii) Only a share of the increase in economic surplus will be passed on B's consumers in the form of increased consumer's surplus. It is that part (areas 1^* and 2^*) that is situated above the domestic price level T_A. The rest will be transferred to

Figure 11.22

a) Home country

b) Partner country
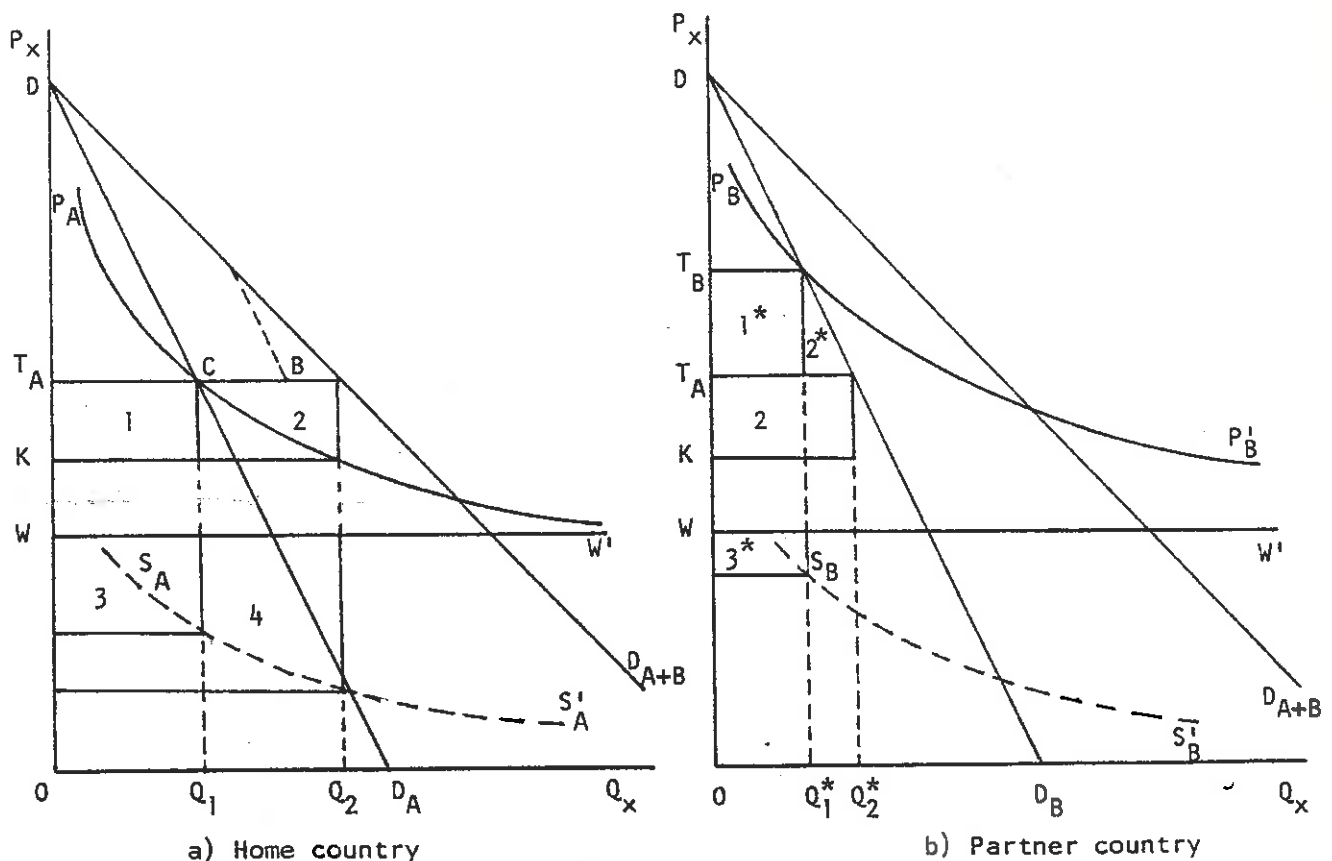
country A in the form of excess profits, and corresponds to area 2 in
panel a).

In comparison with the case of a "made-to-measure" CET, this case presents
three important differences. In the first place, the balance between gains
and losses has worsened, which is to expect, given that the union price has
not accompained the fall in production costs, and that output lagged behind
its potential expansion. If a tariff-averaging formula had been assumed for
the CET, gains would still be lower and losses higher than in the case under
study. In the second place, an inter-country transfer of income occurs, from
consumers in the relatively inefficient economy to the producers in the more
efficient one. Finally, consumers of X in the home country are unaffected by
the formation of the CU, the whole private gains being apropriated by pro-
ducers. Otherwise, the conclusion remains that the formation of the CU is
unquestionably beneficial for the economy that possesses intra-union compara-
tive advantages in the production of X, and that its partner may need extra-
compensation in order to enter the agreement.

If instead of a CU, a FTA had been formed, including rules of origin and
with both countries keeping in force their initial tariff rates, $\frac{WT_A}{OW}$ and
$\frac{WT_B}{OW}$, the total demand facing A's producers would be given by distance $T_A B$
(the distance CB is equal to OQ_1^* in panel b). Therefore the average cost
would fall less than in the case studied above. No consumption gains would
arise in economy B, the whole cost reduction effect being appropriated by
A's producers. Indirect trade deflection would not occur, as costs decrease
in A with the scale of output. Consequently, nothing seems to recommend the
option of a FTA instead of a CU, when there are reasons to believe that
most members'firms have internal economies of scale to exploit.

d) So far, it has been assumed that both countries were producing good X
before the preferential trade arrangement. If only country A were producing
this good, and B were importing it duty-free from the r.o.w., the formation
of a CU between countries A and B may have one of two possible outcomes.

Either country B continues to import good X and replaces partner's suppliers
for those in the r.o.w., or country B's producers seize the opportunity pro-
vided by market enlargement and initiate the production of X for the union
market at competitive prices relative to those of country A's producers.
In the first case, the formation of the CU would represent a pure loss to
country B, its only effect being trade diversion, as measured by area 4^* in
Figure II.21 b)[37/]. In the second case, a production reversal occurs. The
formation of a CU has enabled B's producers to reduce their average costs
into a larger extent than their competitors in A, and as a consequence they
can drive them off the union market. The market of country B, that was pre-

viously supplied from the r.o.w., is now captured by domestic producers, operating under CET protection. J. Viner (1950) called this a trade sup-pression effect. It differs from trade diversion in the sense that the latter represents a shift in supply between foreign sources, while the former means a shift from a foreign to a domestic source. In country B, the difference between the world price and the domestic private average cost represents a loss in welfare that must be weighed against the social-ly valued production gain resulting from the assumed divergence between social and private costs. Country A benefits from cost reduction and trade creation, while loosing in terms of socially valued surplus. The distri-bution of gains between producers and consumers and between countries is again dependent upon the assumption or not of "made-to-measure" tariffs.

e) One of the most difficult problems that arise in the presence of eco-nomies of scale is that comparative static analysis seems unable to indi-cate which of several possible equilibrium positions will be reached after the formation of a CU. The outcome will depend on considerations that may be termed "dynamic", as the nature of oligopolistic competition, the effects of risk reduction and of reduction in information costs, etc.[38]. This un-certainty was already illustrated in the case where one of the partners did not produce good X prior to the preferential arrangement. But it may equally be shown where both countries were producing good X.

So far, it has been assumed that different average costs between countries depended only on supply-side considerations. However, different sizes of domestic demand may also influence comparative advantages when scale eco-nomies are present and create additional uncertainty as to the outcome of a preferential trade arrangement.

Figure II.23 illustrates this problem, following the argument put forward by H. Grubel (1967). Countries A and B are now characterized by having dif-ferent demand schedules, represented respectively by curves $D_A D_A'$ and $D_B D_B'$. The private average cost schedules of these two countries are represented by curves $P_A P_A'$ and $P_B P_B'$, while the supply curve of the r.o.w. is given by the straight line WW'. The social cost curves have been ommitted from the diagram for simplicity. Because of a smaller market size, country A pro-duces good X at higher costs than its partner, despite its cost of produc-tion being lower for the same level of output. Due to this misguided opin-ion about the comparative costs in the two countries, A's consumers will replace imports from country B for domestic production as soon as the CU is formed between the two countries. This behaviour allows country B's output to expand further, so that its price can be lowered; in the mean-while, the opposite tendency will occur in country A, further increasing

Figure II.23
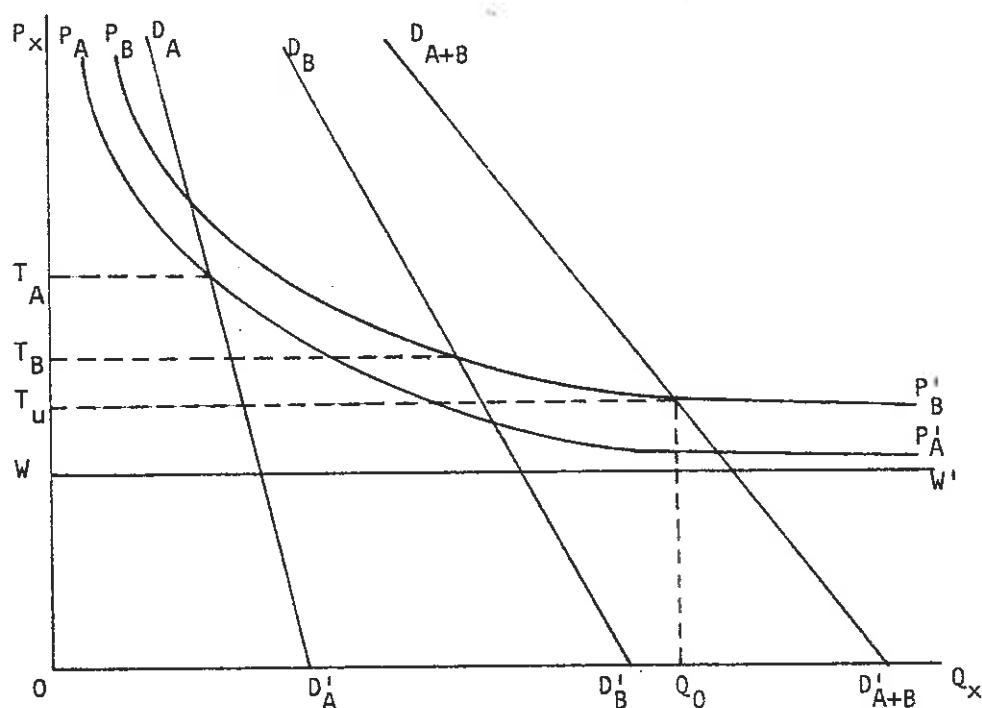
B's apparent advantage. Ultimately, an equilibrium is reached where country B supplies the whole union market, in the amount given by OQ_o although country A's potential costs were lower. Grubel discribed this final equilibrium situation as a "perverse pattern of specialization".

This outcome is only possible if the information about markets is imperfect, or if the transport costs are higher when X is exported from A to B, than in the opposite direction. An indirect way of correcting this given distortions is to admit a "décalage" in the tariff-dismantling process of partners A and B, so that the potentially competitive supplier would be afforded a temporary unilateral preference in the partner's market. The scale economies thereby exploited would then place it in a more or less equal footing with its competitors in B and eventually its real advantage would come out. Unless this were part of a general development policy in regard of a less developed member, the "décalage" procedures must be object of mutual bargaining based on a pattern of agreed specialization.

5.7. Summary and Conclusions of Part II

1. In the context of a perfectly competitive two-good economy, where a
social welfare function is assumed to exist, the imposition of a tariff
(or of an export subsidy) disrupts the pre-existing Pareto optimality
criteria and is therefore detrimental to community's welfare. However, to
an economy that is large enough to have monopoly/monopsony power in the
world market, the imposition of a tariff, with a rate equal to the inverse
of the elasticity of foreign demand for imports, is welfare-maximizing.

We may conclude therefore, that total tariff removal is the optimal policy
for small economies free of domestic distortions, other than those induced
by government action itself. On the other hand, unilateral tariff reduction
is welfare detrimental to large economies. In this case, joint tariff re-
ductions, namely in the context of GATT-sponsored multilateral negotiations,
are justified in terms of welfare.

2. In the same context, the adoption of a preferential trade policy by a
small economy compares unfavourably with free trade. The adoption of such
a policy can be split into two different but simultaneous stages:

- a non-discriminatory tariff reduction, that is the source of
  trade creation effects, and is therefore welfare raising;
- a discriminatory tariff increase, that is the source of trade
  diversion effects, with a negative impact in terms of welfare.

The net result of a preferential trade policy can be negative or positive,
by comparison to an initial situation of tariff protection, depending on
the particular values involved. It cannot improve welfare in relation to
a non-discriminatory tariff reduction of the same magnitude.

The effects of the formation of a preferential trade area can be measured
on the basis of the Hicksian concept of consumer's and producer's surplus.
However, the validity of this measure has to be qualified in respect of
the assumptions involved in the use of that concept - a zero income elast-
icity of import demand and a continuous adjustment of quantities to price
changes.

3. Whereas, in a Customs Union trade deflection is prevented by the adop-
tion of a Common External Tariff, in a Free Trade Area that role is assigned

to a system of rules of origin, as external tariffs remain different as between member states. Some important differences arise between these two forms of economic integration:

   i) A shortfall arises in the market of the most efficient economy inside a Free Trade Area when part of its production is diverted to meet rising demand from the partner country. Then, additional imports from the Rest of the World are needed. This is called the "shifting effect", in result of which a redistribution of customs revenue will take place from the high cost/high tariff economy to the low cost/low tariff economy.

   ii) If the supply of the most efficient economy is unable to satisfy the partner country's demand at its domestic price level, the latter will tend to rise, and as a result the Free Trade Area will present two different prices for the same commodity, in an equilibrium situation. In the low tariff economy, the price will remain at the level that existed previously to the Free Trade Area., whereas in the high tariff economy the price will be set somewhere between this level and the maximum allowed by its own tariff.

   iii) Whereas the Customs Union equalizes the import prices of raw materials and other intermediate goods, and consequently helps to reduce differences in effective protection as between member countries, the Free Trade Area maintains these differences. In this sense, therefore the Customs Union can be said to bring economies closer to a state of economic integration than the Free Trade Area.

4. According to the standard assumptions of international trade theory, preferential tariff reductions, either in the context of a Customs Union or of a Free Trade Area, are always inferior to an equivalent non-discriminatory tariff reduction. However, when such simplifying assumptions are abandoned and replaced by a more realistic approach to the way market economies generally operate, this conclusion no longer holds in general. Economic rationale for the adoption of preferential trade policies can be found in cases where the commodity markets are subject to distortions, either at the external or the domestic levels.

When a Customs Union is formed between economies with limited power to influence the world prices, and the Common External Tariff is established at a sufficiently high level, the resulting fall in the demand for imports from the Rest of the World will enhance their joint ability to

improve the terms of trade. Therefore, a net benefit will accrue to the
Customs Union as a whole, that may be used in order to compensate for
trade diversion losses suffered by individual member states.

The need for compensation or of a careful negotiation of the Common External
Tariff, so that each member state is actually benefited, is crucial
in the case where potential Customs Union members are competitors to each
other on the   market of the Rest of the World. In this case,
"splinters" from a common discipline would be rewarded when their com-
petitors raise their tariffs in a common manner vis-à-vis the Rest of
the World. The "splinters" are made to benefit of improved terms of
trade without having to share the costs of a decreasing trade volume.

5. The formation of a Customs Union influences not only the external
terms of trade, but also the internal ones. Provided that both goods are
non-inferior, the intra-area terms of trade will improve in favour of
the country that competes with the Rest of the World on the partner's
market, but its partner will suffer an identical loss. In relation to
a previous situation of non-discriminatory protection, both Customs
Union members may be made to gain by manipulation of the Common External
Tariff or direct income compensation, provided there is some net trade
creation as a result of its formation. Changes in intra-area terms of
trade affect the distribution of real income among the state members
and not their overall amount. Therefore, they do not provide an argument
in favour of this policy (by comparison to full tariff removal),
except when the purpose of tariff preferences is itself redistributive.
In this latter case, preferential trade policy becomes a tool of a more
general development policy.

6. When the marginal rate of transformation diverges from the domestic
price ratio, a domestic distortion is said to occur, the effect of which
is to bring the economy into a suboptimal welfare situation. Full Pareto
optimality is reestablished by use of a direct subsidy to the production
of the good generating externalities (or a tax on the production of the
good generating negative externatlities) at a rate high enough to
eliminate the initial divergence.

The use of a tax-cum-subsidy policy may not be possible, though, due to
political or institutional constraints. Then, tariff policy is the only

alternative to remedy for the existing distortion. However, this can be corrected only partially, because the tariff raises a consumption cost, and the optimal output level of the protected commodity is not generally reached with a welfare-maximizing tariff rate.

The effects of preferential and non-discriminatory tariff policy can be compared as instruments for correcting domestic market distortions. The advantages and costs of one and the other are differently perceived, according to whether the domestic distortion is related to the import-competing or the export-producing branches of the economy.

The following conclusions can be drawn from the analysis in terms of a single economy. If the externality is associated with the production of the import good, a preferential trade area will be superior to non-discriminatory protection only if the gains derived from better terms of trade are large enough to compensate for the losses associated with the shift away from import-substitutive production. However, this result cannot be guaranteed at all, and the final outcome may be inferior either to non-discriminatory

protection or even to free trade. If the economy purchases the import good both from its partner and the outside world, the outcome will be unequivocally inferior to non-discriminatory protection and possibly to free trade.

If the externality is associated with the production of the export good, a preferential trade area is surely superior to a free trade situation and may also be preferable to an export subsidy policy, depending on the difference between the domestic price in the partner's market and the world price. Gains for the home country relative to the free trade situation may be split into allocative and terms-of-trade gains.

Considering the economic and political costs of domestically financing an export subsidy, and also the international conventions that limit or prohibit the use of export subsidies, it seems that preferential tariff policies, even if trade-diverting, may offer a convenient replacement for unilateral policy if the export sector holds external economies or a monopoly structure, and the exporting country competes with the r.o.w. on its partner's market.

7. The analysis can be extended to the case in which domestic distortions operate in the production of the same commodity in both economies within a preferential trade area.

When domestic distortions operate in the import-substituting sector of the country that trades with the outside world, and in the export sector of the country that trades only with its partner, the formation of a CU or of a FTA is certain to be preferable to free trade conditions at least for one of the partners involved. If the gain obtained through better exploitation of externalities outweighs the terms-of-trade loss to the country that trades with the r.o.w., then both countries will be better off with a preferential agreement than under a free trade situation.

In the same case, if export subsidies are allowed, the formation of a preferential area cannot be proved superior to other trade policies, provided that optimal rates of intervention are selected. If export subsidies are dismissed on a priori grounds, however, the preferential trade arrangement acts as a replacement for this constraint, thus leaving in a better position the country which is considered to have externalities in its export sector. A compensation paid to its partner by the benefiting country may make the preferential arrangement mutually preferable, both in relation to the free trade situation and to non-discriminatory tariff policy. This outcome seems likely, since the winner enjoys terms-of-trade and production gains, while the loser only has to cope with terms-of-trade losses.

When the distortion operates in the export sector of the country that trades with the r.o.w. and in the import-substituting sector of the other country, the imposition of a CET (or the adoption of the latter country's tariff by its partner) will entail considerable welfare losses for the importing country inside the union, which can hardly be compensated. Consequently, this kind of preferential arrangement seems inferior relative to other trade policies.

This case favours the establishment of a CU where union exports to the r.o.w. are subsidized at a rate just equal to the CET. For both countries, the resulting welfare situation looks preferable relative to free trade conditions. If, before the formation of the CU, the small partner imposed a non-discriminatory tariff on imports, its terms-of-trade loss is likely to be compensated by its partner. The interest of the latter in forming a CU is justified only by the assumed constraints on the use of export subsidies by individual countries.

8. Another departure from the standard assumptions of international trade theory consists in assuming that community's welfare is generated, not only by private consumption, but also by the collective consumption of a particular good, i.e. a certain desired level of national industrial production. This assumption supports the use of tariff policy in general and particularly the establishment of trade arrangements involving tariff preferences in export markets. The following conclusions emerge as to the effects of preferential trade policy in the context of the "public good" argument:

(i) While standard economic analysis stresses the gains from trade creation, against which must be weighed the losses from trade diversion, the present analysis considers trade diversion as well as trade creation as sources of gains to the partners. In fact, trade diversion is preferable to trade creation for the preference-granting country, because it entails no sacrifice of domestic industrial production. These gains would not be possible with unilaterall tariff reduction, and therefore represent a solid rationale for preferential trade arrangements.

(ii) Preferential trade arrangements would be especially attractive to countries with a strong preference for industrial production that are at a comparative disadvantage in industrial production in relation to the world market. In addition, it would be convenient that the partners have unequal comparative advantages (disadvantages) in the various lines of industrial production, so that each can benefit from preferences given by the other. This latter requirement is especially strong in the case of CUs (and FTAs), where tariff reduction is complete and made on an across-the-board basis. Instead of being able to pick and choose among industries on which to give and demand preferences, a country has to choose whether or not to participate in the CU (or FTA), and it will only choose to participate if there is a reasonable probability of a net gain.

Both requirements indicate that CUs (or FTAs) are most likely to be negotiable among countries at a similar stage of economic development.

(iii) Whereas standard trade theory implies a liberal, non-interventionist approach to the problem of maximizing efficiency of production within the union, the preference for industrial production hypothesis implies that any CU should include provisions to insure that each member country (and each large region) obtains a "fair share" of industrial production, and par-

ticularly, that the growth of production in the union does not concentrate in one or a few countries (regions) at the expense of the rest. This conclusion seems to point out at the necessity of some degree of regional, industrial or social policy harmonization, in order to supplement the eventual distributive shortcomings of a CU.

9. The existence of static economies of scale internal to the firm justifies the use of tariff protection, only if the firm's output produces externalities or is a "public good", and institutional constraints prevent the use of first-best production subsidies. The optimum tariff is levied at a rate which just enables domestic production to supply the whole domestic market without raising excess profits. It is therefore a made-to-measure tariff, with prohibitive effects.

The presence of scale economies provides a strong argument for the formation of a Customs Union, from the point of view of the most efficient economy. Removal of tariffs in mutual trade will give it virtual monopoly power over the integrated area's market. As market size expands, production costs are reduced and the consumer's surplus rises as a result of the falling price. Moreover, the expansion of domestic output will increase social gains in production.

To the other Union members, the net result may not be so beneficial. If existing production has to be abandoned, this social loss has to be weighed against consumption gains and cost reduction. If the commodity in question was previously imported, a pure trade diversion loss follows. Therefore, a compensation has to be given to losers, or a careful choice of sectors to be integrated has to be made, if the Union is to be mutually beneficial.

The consideration of scale economies in the context of a Customs Union raises specific problems:

i) Comparative analysis of production costs in different economies prior to the formation of a Union may be misleading as a method to assess true comparative advantages. The formation of a larger integrated market may afford to a new producer possibility to initiate competitive production and replace an existing producer in a partner country. Or, it may happen that a small market size has put a domestic producer at a comparative disadvantage relative to another producer in a larger economy. If the information is not perfect, the formation of a Customs Union embracing both

economies may lead to a perverse pattern of specialization.

ii) If the rate of the Common External Tariff for a product subject to scale economies is not "made-to-measure", then the intra-Union price will lie above production costs and welfare benefits will be correspondingly lower. As a result of the monopoly rent created, income will be transferred from consumers to producers and from the relatively inefficient to the relatively efficient economy inside the Union.

NOTES OF PART II

[1] F. Machlup (1977, p.20).

[2] M. Chacholiades (1978, pp. 98-100).

[3] Ibid., pp. 85-139 and A. Koutsoyannis (1980, pp. 524-41).

[4] The marginal rate of technical substitution in sector X ($MRTS_{KL}^{X}$) is defined as the amount of K that has to be added to the production process to replace one unit of L, so that the output of X is unchanged.

[5] M. Michaely (1977) claims that the demand analysis in terms of revealed preference is superior to indifference analysis since it reaches the same conclusions on fewer assumptions, and is adaptable to the community without additional assumptions. However, the use of community indifference curves is still the most popular in textbook presentations of international trade theory. Some of the reasons for such popularity are described in A. El-Agraa (1983, p.24).

[6] A third criterion is attributed to Ian Little, which implies a value judgement: the resulting income distribution with Situation II should be no worse (i.e., not made more unequal) than the one existing in I.

[7] J. Henderson and R. Quandt (1971, p. 280).

[8] M. Chacholiades (1978, p. 137-9).

[9] Income redistribution may be understood as a succession of ex post transfers of real income between consumers, made by a diligent government. This is the only interpretation that is consistent with the price formation under market mechanisms. Alternatively, an optimal distribution of income may be pre-established and a set of relative prices is consequently imposed on the economy by central planners, in order to reach the desired distributional outcome.

[10] A. Koutsoyannis (1980, p. 501).

[11] For details about the construction of the PPF, in relation to Pareto optimality criteria, see A. El-Agraa (1983, p.36).

[12] C_o and C_1 are located on the same income-consumption line (not drawn for simplicity).

[13] For details on this subject, see A. El-Agraa (1983, p. 50).

[14] Alternatively, if A imposes a tax on exports at the rate of $\frac{DJ}{HD}$, it would be retaining DJ units of exports out of the total amount of HJ that country B would require in exchange for its supply of OH units of Y.

[15] M. Chacholiades (1978, p. 172).

[16] A. El-Agraa (1983, p. 112). The joint tariff reduction is a necessary but not sufficient condition for the welfare of both countries to increase. In the case of a too unbalanced deal, the liberalizing country may find itself in a worse welfare situation, if its partner reduces protection very little.

[17] Curves SS' and DD' are assumed to be linear for graphical simplicity.

[18] E. Leamer and R. Stern (1970, pp. 186-9).

[19] When both members produce locally the input, price differences may be reduced, but if just one member is a producer, then domestic prices will reflect the tariff rates to full extent.

[20] A. El-Agraa and A. Jones (1981, p. 38).

21/ Ibid., pp. 40-48.

22/ The marginal cost of importing is defined as the derivative of the foreign export supply function relative to the home market. The marginal value of importing is identified with the members' import demand function.

23/ If A's offer curve were made less price-elastic, it would cut exchange lines OC and OB to the left of A_1 and A_2. As a result the final trade vector A_1B_1 would be larger. Less X would be offered by A in exchange for Y, and consequently B would have to trade more with C. The effect could be strengthened by a larger income-elasticity of B's consumption of good X.

24/ Whether appropriation is total or partial will depend on the elasticity of the foreign demand curve. If this is not perfectly elastic, foreign consumers will absorb part of the tariff preference margin through a fall in the domestic price.

25/ A more complicated situation is examined by Paul and Ronald Wonnacott, whereby the tariff-constrained offer curves of A and B intersect each other outside the wedge formed by OC_1 and OC_2, but the free-trade offer curves intersect each other inside. Consequently, the initial trade with C is totally extinguished after the formation of the preferential area. In this case, only the country that trades initially with C gains with the preferential arrangement; the partner suffers a trade-diversion loss and may gain or not, depending on the elasticity of the partner's offer curve.

26/ The Wonnacotts' model is useful furthermore because it draws attention to the advantage of forming preferential areas between nearby countries, hence maximizing the saving of transport costs, relative to the alternative of trade with the r.o.w.

27/ The rationality of consumers in connecting means with ends (maximal satisfaction) is here assumed as perfect, and therefore, nationalistic aspirations or misconceived economic principles are not questioned as backgrounds for the "public" character of industrialization.

28/ See J. Bhagwati and V. Ramaswami (1963), H. Johnson (1965 b) and W. Corden (1974).

29/ See W.M. Corden (1974, p.37).

30/ C_1 is determined by the tangency between the Meade curve (not drawn) and the highest indifference curve (SIC_1), while P_1 is determined by the intersection of the PPF and a vector with slope equal to $t_o t_o'$, starting at C_1.

31/ A. Dutta (1969, p. 97).

32/ Article XVI of GATT specifically condemns the use of export subsidies, especially in what concerns trade in manufactured products. From a theoretical point of view, the economic effects of tariffs and export subsidies are symmetrical: import duties direct too many productive factors into domestically consumed goods by increasing their domestic prices, whereas export subsidies direct too many resources into foreign traded items, by reducing export prices below real costs. However, GATT treats export subsidies and import duties in an asymmetric way. While tariffs are to be reduced gradually through multilateral negotiations, the use of subsidies must be suspended promptly. R. Baldwin (1970, p. 46) argues that this difference in treatment derives from the accepted notion that a country has a greater right to interfere with its own domestic markets than with the markets of other countries. He also suggests that GATT rules tend to favour producers' interests over those of consumers, because the former are more concentrated and have greater acess to media and political influence.

33/ The post-union prices are used to measure the welfare levels in terms of commodity Y.

34/ Using conventional supply and demand curves, El-Agraa and Jones (1981, pp. 62/66) reached a similar conclusion. Their example shows the relatively smaller country in the union experiencing trade reversal. However, this is

not a necessary condition for the preferential arrangement to work as an export subsidy, as our model shows. If, in the left quadrant of Figure 11.18, point C_o were situated at the left of P_o, trade reversal would occur after the preferential arrangement had been established, but this does not alter any of the conclusions.

35/ A blatant case of union subsidy policy is the EC's Common Agricultural Policy. While one may accept the notion that a customs union has more bargaining power to enforce such a policy than an individual state, the issue of retaliation becomes very real, and it might be introduced in the present model, in order to make it closer to reality.

36/ The amount of trade represented by distance $E_1'C_1'$ is subsidized at a rate equal to the common external tariff rate.

37/ Here we maintain the assumption that rational choices had been made prior to the CU. Therefore, free trade is unequivocally superior to both non-discriminatory protection and to a preferential trade arrangement, in country B, and the transitivity in ranking the different policy alternatives remains valid.

38/ P. Robson (1980, p. 40).

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PART III

A SURVEY OF THE METHODOLOGY FOR
ESTIMATING TRADE EFFECTS OF INTEGRATION

Ah, all is symbols and analogies!
The wind on the move, the night that will freeze,
Are something other than night and a wind —
Shadows of life and of shifting of mind.

Everything we see is something besides.
The vast tide, all that unease of tides,
Is the echo of the other tide - the sea
Alluned - there, where the world that is is real.

Fernando Pessoa (1932)
From "notes for a Faust play"

THE RESIDUAL APPROACH

A very large amount of empirical work was performed during the 1960s and early 1970s with the objective of quantifying the effects that the formation of the EEC and EFTA had upon patterns of production and trade. However, this line of research has lost popularity in recent years. D. Mayes (1982, p.43) suggests that this is due both to the inherent difficulty of such studies and to its lack of topicality in the face of more pressing world economic problems. To put it in a different way: whereas in the 1960s the focus was on the welfare improvements associated to the reallocation of resources within each European bloc, and the welfare losses incurred by outsiders, more recently attention shifted to the adjustment problems caused by trade liberalization in general. Hence, the theoretical analysis in terms of trade creation and trade diversion ceased to have immediate and obvious welfare implications. However, in our opinion, empirical work on trade effects of economic integration in Europe is nowadays so justified as twenty years ago, even if the questions to which it should address are of the positive, rather than of the normative type. Among today's questions we may mention the following: what will be the trade impact of the Southern Enlargement of the EEC upon acceding countries, member countries and third countries? Into what extent did non-tariff barriers mitigate the effects of full tariff liberalization between the EEC and EFTA countries, following the bilateral agreements? What is the specific role of tariff liberalization in aggravating regional disequilibria and unemployment in Western European economies? How does the actual implementation of the Common Agricultural Policy, the European Monetary System and other harmonization policies affect trade flows among EEC members and with the rest of the world? These new problems in the integration area gain a more interesting dimension when the effects of alternative policies upon trade can be predicted or measured with a reasonable degree of accuracy. Although adjustments are required in accordance with the nature of each problem, the methodological

basis is still provided by the empirical work on the effects of EEC and EFTA.

In this and the next Chapters,we shall be reviewing extensively the most important empirical studies in this field $\underline{1/}$.Our purpose is to select the most relevant contributions in terms of our final goal,that is the estimation of trade effects of the free trade agreement between Portugal and the EEC.We shall also review the results obtained with traditional methodology in evaluating Portugal's experience in economic integration and in forecasting the effects of future membership of the EEC. This will be done in Chapter 8.

The most general distinction that can be made between alternative methodologies is in terms of ex ante and ex post estimates. The former ones represent an attempt to predict in advance the effects of a customs union (or a free trade area) on the basis of some a priori knowledge about the behaviour of the most relevant variables, without the impact being actually observed. Ex post estimates, on the other hand, are based upon the study of the observed integration experience.

The methodology can be further differentiated in terms of the type of research tools employed: direct survey or statistical analysis of published trade data.

Direct evaluation can be done, either by surveying the views of those who are directly in touch with the process of decision-making (experts in particular markets or industrialists), or by analysing and comparing data on costs and prices of a large sample of products in different countries. Either procedure requires an elaborate and costly collection of information and is therefore beyond the reach of most individual researchers. Furthermore, its usefulness is restriced to ex-ante studies. A representative image of the future pattern of production is obtained directly from the variables that set the modification of this pattern, without having to make inferences from trade flows. However, this does not mean that one can proceed without some simplifying assumptions, concerning the capacity of adjustment of entrepreneurs, the degree of government intervention, the phycological and political determinants of decision-making of the individual firms.

Statistical analysis of trade data, by far the most widely used instrument of research, can be performed by two different methodologies: residual imputation or analytical models. The former one is used only in ex post estimation and does not specify the way in which economic integration is supposed to influence trade patterns. On the basis of the knowledge about previous trends of some economic variable(s), an "anti-monde" situation is projected over a given post-integration period, and

the difference between the projected and the actual values of trade flows
is taken as a measure of the (residual) integration effect.

Analytical models incorporate tariff changes, together with other
economic factors, as explanatory variables for the behaviour of trade
flows following the formation of an integrated area. Structural parameters
of foreign trade (direct and cross elasticities of prices and tariffs)
can be computed directly from regression analysis and used in order to
estimate integration effects. On theoretical grounds this methodology
seems preferable, since it manages to separate explicity tariff effects
from other influences upon the evaluation of economic stucture, such as
income variation, cyclical demand pressure and shifts in competitive
ability. However, when the problem of simultaneous relationships is
considered, in a long term perspective, the requirements for a fully
satisfactory model of trade look unsurmountable, in practical terms.While
the trade pattern suffers fundamental changes,due to tariff liberalization,
a process of resource reallocation is taking place which will influence
the rate of income growth, the investment ratio, the factor wages, etc..
A variety of models, both of the static (Hecksher-Ohlin-Samuelson) and
of the dynamic variety (export-led growth, "open" variants of the Harrod-
-Domar model) illustrate the role of exogenous trade changes upon economic
structure and growth. These long-term effects of trade liberalization
will in turn affect the future pattern of trade (in a pro-trade, anti-
trade or neutral fashion).

Simple analytical models, that consider only the direct effect of
tariffs upon trade flows, ignore the complexity of relationships that are
developed beyond this first stage of economic integration.Consequently,
the most widely used types of analytical models tend to neglect a
substantial share of the changes in trade structure that are indirectly
attributable to economic integration. However, ex post estimates based
on residual imputation are not superior in this respect, since they tend
to lump together static and dynamic effects, thereby yielding upward
biased results.

The ideal model would consist of a series of simultaneous equations
describing several layers of relationships between economic variables,
with a considerable degree of lagging. However, such a comprehensive
model has never been built and it is doubtful whether it will ever be
possible in pratice. Most efforts in empirical work on economic
integration have concentrated on the determination of trade effects
directly attributable to tariff changes. The present survey will only

cover this field of research. Other effects of economic integration, such as changes in the production structure, external disequilibrium, productivity growth, etc., have been object of separate studies [2] using methodologies that are not so developed and discussed as the ones concerning trade impact.

6.1 Main principles of the methodology

The principles behind the residual methodology can be easily understood by referring to Figure III.1, in wich we plotted the growth of variables X and Y against time, in panels a) and b), respectively. X may be considered to represent imports of economy H from its customs union partners, or any monotonic function of such imports (shares in total trade, in consumption, etc.). Y stands for imports of H from non-partners (or a function thereof).

<div align="center">Figure III.1</div>
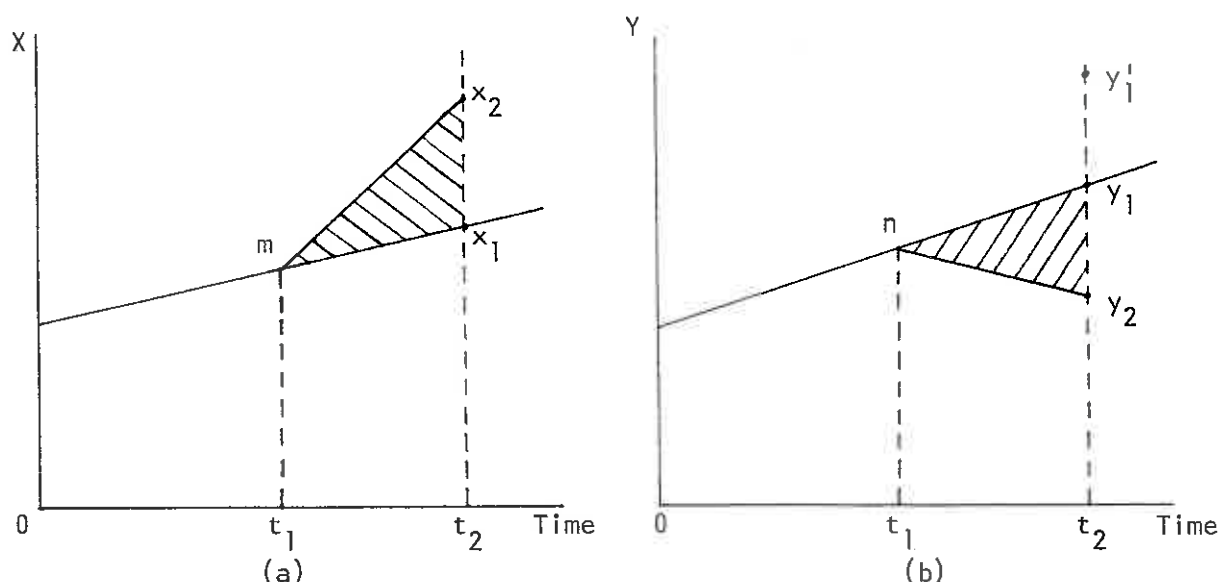
Suppose that accession of H to the customs union materializes instantly in time period t_1, and we want to evaluate the accession effects in period t_2. About this latter period, we only know the actual, observable value of variables X and Y, respectively x_2 and y_2. An hypothesis has to be made about the values of X and Y, had integration not taken place. If more than one observation exists for trade between periods 0 and t_1, we may assume that trade with partners would have continued along the projected path $\overline{mx_1}$, and that trade with non-partners would have followed the projected path $\overline{ny_1}$, if tariffs had remained unchanged. We can therefore

impute the residual difference between what was expected to occur - the "anti-monde" - and what actually occurred - the actual world - to the formation of the customs union. More specifically, we may measure gross trade creation in t_2 by the (positive) difference between x_2 and x_1, and trade diversion by the (negative) difference between y_2 and y_1 [3/]. The algebraic some of these two residuals is a final measure for net trade creation in period t_2. The assumed linearity of the growth paths of X and Y further allows us to calculate the cumulative static integration effects, as given by areas $\Delta m\, x_1\, x_2$ and $\Delta n\, y_1\, y_2$. As observed earlier, these estimates will include some indirect, long-term effects on trade, and are therefore an overestimation of the static impact.

The most visible shortcoming in the residual approach is to attribute to tariff changes the full responsibility for the difference between the "anti-monde" and the actual world. This heroic assumption can be abandoned, by "normalizing" for the likely effects of other influences, such as income growth and competitiveness changes. For instance, if additional information about the competitive power of non-partners relative to H leads us to believe that imports from that source would have increased proportionally more than previously, in the absence of tariff discrimination, our guess for the "anti-monde" would be situated at point y_1' in Figure III.1 (b). Our estimate of trade diversion would therefore be larger than under a simple, "non-normalized" hypothesis.

It is the "normalization" technique that differentiates among the several alternatives based on the residual approach. How sophisticated this technique may be, the essential principle remains that the validity of residual estimates is dependent upon a maximal degree of similarity in the economic structures before and after the integration moment. Whenever sharp shifts occur in the conditions and rules governing international trade (of which it is not difficult to find examples in the period after 1973/74), the practical validity of this approach becomes severely reduced.

We shall now review the principal studies falling under the residual approach. In order to simplify their presentation, we shall maintain the same symbology, as far as possible:

X_{ij} is a trade flow from country i to country j

$\sum_{i=1}^{n} X_{ij} = M_j$ is total imports into country j

$\sum_{j=1}^{m} X_{ij} = B_i$ is total exports from country i

$X^{(t)}$ indicates a trade flow in time period t

$_k X$ indicates a trade flow in the particular commodity group k

$$\frac{X_{ij}}{M_j} = \mu_{ij} \text{ is the share of country } \underline{i} \text{ in country } \underline{j}\text{'s total imports}$$

$$\frac{X_{ij}}{B_i} = \beta_{ij} \text{ is the share of country } \underline{j} \text{ in country } \underline{i}\text{'s total exports}$$

$$\frac{X_{ij}}{\sum\limits_{i=1}^{n} \sum\limits_{j=1}^{m} X_{ij}} = \gamma_{ij} \text{ is the share of trade between } \underline{i} \text{ and } \underline{j} \text{ in total world trade}$$

$$\frac{M_j^{(t)}}{M_j^{(0)}} = m_j \text{ is the (average) rate of change of country } \underline{j}\text{'s imports between years 0 and t}$$

$$\frac{B_i^{(t)}}{B_i^{(0)}} = b_i \text{ is the (average) rate of change of country } \underline{i}\text{'s imports between years 0 and t}$$

$$\frac{X_{ij}^{(t)}}{X_{ij}^{(0)}} = x_{ij} \text{ is the (average) rate of change of exports from } \underline{i} \text{ to } \underline{j} \text{ between years 0 ant t}$$

C_j is apparent consumption   of country $\underline{j}$

O_j is gross output of country $\underline{j}$

$$\frac{X_{ij}}{C_j} = \sigma_i \text{ is the share of } \underline{i} \text{ in } \underline{j}\text{'s apparent consumption}$$

P_j is an index of import prices of country $\underline{j}$

This list does not exhaust the symbols to be used; those that are specific to particular methods will be explained within the correspondent text.

6.2   Manipulation of trade matrices and vectors

a)   A direct application of the method suggested by Figure III.1 was made by I. Walker (1967, p.78). In a study concerning the effects of the formation of the EEC on intra-bloc trade, he assumed that the degree of regionalization of trade in EEC countries was a function of time. Quantification of EEC effects over the first five years of its existence was made

on the basis of a linear extrapolation of the (rising) trend in regional trade over the five-year period immediately preceding 1958. The relationship used for this purpose was:

$$
(1) \qquad \frac{X_{ij}^{(t+5)}}{B_i^{(t+5)}} = \frac{X_{ij}^{(t)}}{B_i^{(t)}} \; (1 + \alpha)^5
$$

where i = EEC bloc

   t = 1953 and 1958

   α = average annual rate of export regionalization

The α coefficient was first calculated for the period 1953-58 and then for 1958-63, and compared. A similar procedure was adopted to estimate the change in the rate of import regionalization. The results obtained suggest that the formation of the EEC had a visible effect on intra-bloc trade. Export regionalization increased between the two periods by a fairly large margin of 5.37, in absolute percentage points. Import regionalization grew more slowly, the increase being 3.45 only. These results do not however illustrate the integration effects in any meaningful way, either in theoretical or quantitative terms. Firstly they obviously fail to reflect the basic concepts of customs union theory. Trade regionalization is welfare-improving if resulting from trade creation, but welfare-deteriorating if resulting from trade diversion. This crucial distinction not being even suggested, no value judgement is possible about the results. Secondly, they are dependent upon the base and terminal years chosen, and also upon the assumed "normality" of the five-year period prior to integration. It is a fact that 1958 was marked by a depression in the western economies in general thereby lowering the estimate of α for the pre-integration period. Furthermore, the conditions governing international trade in 1953-58 can hardly he described as normal, and in no way could hold after 1958 even without the Treaty of Rome. The dollar shortage forced the European countries to restrict imports from the dollar area and to favour exports to this area in order to bring dollar-valued trade into balance. This explains why the rate of import regionalization was found to be higher than the corresponding rate for exports in 1953-58 (and consequently why the increase in α for imports in 1963 was smaller than for exports). Thirdly, the method neglects the influence of growth differentials between countries to the extent to which they attract imports. A growing proportion of exports was being directed to EEC markets,

but this could be a reflection of their faster per capita income growth relative to other countries, and not the effect of tariff changes.

The same author attempted to neutralize the income effect, and so did Balassa along similar lines. However, as we shall see below, this improvement does not decrease the amount of uncertainty associated with the choice of the benchmark years.

b)   I. Walter considered separately the evolution of import and export shares. P.J. Verdoorn and Meyer zu Schlochtern(1964, p.101) devised   a method that considered both shares simultaneously. According to these authors, by dealing exclusively with import shares (export shares) as a measure of tariff reduction effects, one would be assuming implicitly that the elasticities of export-supply (import-demand) in foreign countries would be infinite. But evidence points to very different reactions to tariff changes across countries, which does not seem to support in general the above assumptions.

The method used by Verdoorn and Meyer zu Schlochtern is based upon the weighted harmonic mean of the indices of both the import and the export shares.

The general formula for a weighted harmonic mean of two ratios Y_1 and Y_2, whatever they are, is given by:

(2)
$$H = \frac{W_1 + W_2}{W_1\left(\frac{1}{Y_1}\right) + W_2\left(\frac{1}{Y_2}\right)}$$

The weights in this expression, W_1 and W_2, are made equal   to $\left[1 - \mu_{ij}^{(0)}\right]$ and $\left[1 - \beta_{ij}^{(0)}\right]$, respectively, while the ratios Y_1 and Y_2 are specified by the index of variation of μ_{ij} and of β_{ij}, respectively, between base and final years. Therefore:

(3)
$$H_{ij} = \frac{\left[1 - \mu_{ij}^{(0)}\right] + \left[1 - \beta_{ij}^{(0)}\right]}{\left[1 - \mu_{ij}^{(0)}\right]\frac{\mu_{ij}^{(0)}}{\mu_{ij}^{(t)}} + \left[1 - \beta_{ij}^{(0)}\right]\frac{\beta_{ij}^{(0)}}{\beta_{ij}^{(t)}}} =$$

$$= \frac{2 - \mu_{ij}^{(0)} - \beta_{ij}^{(0)}}{\frac{X_{ij}^{(0)}}{X_{ij}^{(t)}}\left[(1 - \mu_{ij}^{(0)})\frac{M_j^{(t)}}{M_j^{(0)}} + (1 - \beta_{ij}^{(0)})\frac{B_i^{(t)}}{B_i^{(0)}}\right]}$$

By using the initial convention about symbols, dropping the super-scripts and rearranging, the following expression for the average, the so-called "weighted-share index", is obtained:

$$(4) \qquad H_{ij} = \frac{x_{ij} (2 - \mu_{ij} - \beta_{ij})}{(1 - \mu_{ij}) \, m_j + (1 - \beta_{ij}) \, b_i}$$

This particular weighting system seeks to incorporate Tinbergen's "law of diminishing elasticities" into the methodology. The possibility for country i to profit from a rapid demand expansion in country j will be larger, the smaller its initial export share $\beta_{ij}^{(0)}$. Identical reasoning is applicable to the import side.

Basically, what this method achieves is the manipulation of an in-itial trade matrix, so that each particular trade flow changes in proportion to the total exports of the exporting country and the total imports of the importing country. If external trade takes place under equilibrium conditions and prices remain unchanged throughout the period, H_{ij} will always equal unity, and a hypothetical value for $X_{ij}^{(t)}$ can be estimated from known values of m_j and b_i. Integration affects the evolution of X_{ij} through the operation of two different factors:

i) A direct factor: the changes in the duties levied by country j on i's products.

ii) An indirect factor: a shift in the preference of j's consumers to country i's products and/or a shift in the willingness of i's exporters to direct an increasing part of their supplies to j's market. These effects are expected to come about as the result of a better acquaintance with the partners' products, made possible by the removal of trade barriers , and an increased promotional effort in the partners' markets following the reduction in risks.

Under ceteris paribus conditions, deviations of the weighted-share index from unity will measure direct and indirect effects of integration. If it is above unity, trade creation will have occurred according to Verdoorn and Meyer zu Schlochtern and its extent will be given by its value minus one [4/]. If it is below unity, trade diversion takes place and is approximated by one minus the value of the index.

Serious shortcomings limit the validity of this method, however. Firstly, there is a problem of interpretation of the results in terms of deviations of H_{ij} from unity. The concentration of trade in intra-bloc

flows, as indicated by $H_{ij} > 1$, may be the result not only of replacement of domestic production by imports from partners (trade creation), but also of replacement of imports from third countries (trade diversion). On the other hand, these may fail to keep up with total trade, even if no trade diversion occurs. In the case of pure trade creation, intra-bloc trade will bulk larger in total trade, thereby reducing the share of third countries, as reflected by a value of H_{ij} below one. Secondly, this method fails to take into account the effects of differential GNP growth, of changes in competitiveness and of disparities in timing and amplitude of cyclical fluctuations in different countries. Ad hoc adjustments for these influences have to be made when interpreting the results obtained from manipulation of the trade matrix, thereby nullifying the main advantage of this method - its simplicity. Finally, there is an arithmetic incoherence in the "anti-monde" estimates, which was acknowledged in a later study by Verdoorn and Schwartz (1972). Let E_{ij} be the integration effect, in value terms, associated to the flow X_{ij}. On the assumption that $H_{ij} = 1$, the anti-monde of X_{ij} can be calculated and, by definition, equals:

$$(5) \qquad \tilde{X}_{ij} = X_{ij} - E_{ij}$$

However, only accidentally would the sum of all $\tilde{X}_{ij}$ $(i=1, \ldots, n \; ; \; j = 1, \ldots, m)$, either by rows or by columns, equal the known values of total imports or total exports, respectively. In order to make the estimates compatible, it is necessary to subject the values of $\tilde{X}_{ij}$ to the following restraint:

$$(6) \qquad \sum_{i=1}^{n} \sum_{j=1}^{m} \tilde{\gamma}_{ij} = 1$$

where $\tilde{\gamma}_{ij} = \tilde{X}_{ij} / \sum_{i} \sum_{j} \tilde{X}_{ij}$, similarly to the definition of the actual share in world trade $\gamma_{ij} = X_{ij} / \sum_{i} \sum_{j} X_{ij}$.

The "relative flow effect" is defined as that part of the "anti-monde" trade flow that is accounted for by the integration effects. It can be expressed as:

$$(7) \qquad d_{ij} = \frac{E_{ij}}{\tilde{X}_{ij}} = \frac{\gamma_{ij} - \tilde{\gamma}_{ij}}{\tilde{\gamma}_{ij}}$$

This extension of the original method gives results in terms of the relative difference between actual and hypothetical shares in total world trade. While eliminating the discrepancy in the sum of shares, this extension makes the world sum of integration effects $\sum_i \sum_j E_{ij}$ necessarily equal to zero. It is as if integration would leave total world welfare unaffected which of course represents a very stringent assumption.

c) The same objective of projecting trade matrices into the future, without having resort to any data other than foreign trade, was pursued by J. Waelbroeck (1964). He used a method originally devised by Stone and Brown (1963) to project changes in the coefficients of input-output matrices - the so-called RAS method.

Let $A^{(o)}$ be the matrix of trade flows $X_{ij}^{(o)}$, in base year, and $A^{(t)}$ the respective matrix after deformation. The basic assumption behind this RAS technique is that the unequal change of total exports and imports throughout the period will be the only cause of deformation of the initial matrix. Therefore, it is supposed that the total values will be known, or estimated by some method, before the values of the individual flows can be projected.

Each element of $A^{(t)}$ can be described by the formula :

$$(8) \qquad \tilde{X}_{ij}^{(t)} = r_i^{(t)} \, X_{ij}^{(o)} \, s_j^{(t)}$$

where the r_i coefficient, whose value depends on the growth of country i's total exports, multiplies all the elements contained in the ith row of $A^{(o)}$; and the s_j coefficient, which is a function of the growth of j's import trade, multiplies all the elements in the jth column. As both r_i and s_j are not assumed identical to the indices of change in exports and imports, but simply a function of such indices, a method must be used to find the precise form of this function.

If U is the unity vector, and $B^{(o)}$ and $M^{(o)}$ are the initial vectors of total exports and imports for each country, respectively, the two following restrictions apply:

$$(9) \qquad \begin{cases} A^{(o)} \, U = B^{(o)} \\ U' \, A^{(o)} = M^{(o)}, \end{cases}$$

and consequently, the deformed matrix will have to satisfy:

(10)
$$\begin{cases} A^{(t)} \ U \ = B^{(t)} \\ U' \ A^{(t)} \ = M^{(t)}, \end{cases}$$

These restrictions imply that the total hypothetical exports (im-
ports) of each country must be equal to the actual ones. The problem then
is calculating the composition of the diagonal matrices $\hat{r}$ and $\hat{s}$, such as
to make:

(11)
$$A^{(t)} = \hat{r} \ A^{(o)} \ \hat{s}$$

where $A^{(t)}$ satisfies the above conditions.

$\hat{r}$ and $\hat{s}$ are calculated by means of an iterative process, which is
described in Waelbroeck (1964, p.145).

The RAS technique was then applied to the matrix of trade between
the nine countries and country blocs in 1951/52, in order to obtain a de-
formed "anti-monde" matrix for 1959/60. The residual difference was taken
to measure the EEC effects in the first two years of its existence. As
the above restrictions "prohibit" any divergence in each country's total
trade, trade creation . effects are excluded by assumption. The only use
of this method would therefore be to detect trade diverting effects.The
restrictions used here have more serious consequences than the ones deve-
loped in Verdoorn and Schwartz (1972), where only total world trade had
to match the values estimated for the anti-monde.

The order of magnitude found. for the estimates from the RAS method
was quite low $\underline{5/}$. However this is not surprising, given the deficiencies
already indicated, and the short time period chosen for the assessment.
of the EEC effects.

A version of the RAS technique was applied by Mayes, D. (1974) under
the denomination RASAT, in order to obtain disaggregated estimates of
trade effects by commodity groups. The initial trade in any commodity
group was assumed to expand according to the following multiproportional
relationship:

(12)
$$_k\tilde{X}_{ij}^{(t)} = {_k}X_{ij}^{(o)} \ \cdot \ r_i \cdot s_j \cdot t_k \cdot \ U_{ij} \cdot \ _kV_i \cdot \ _kW_j$$

where $\underline{k}$ refers to the commodity dimension, t_k indicates the change in to-
tal trade in k, U_{ij} the change in total trade between $\underline{i}$ and $\underline{j}$, $_kV_i$ the
change in i's exports of $\underline{k}$ and $_kW_j$ the change in j's imports of $\underline{k}$.

The estimation of the model is done in two iterative sequences. In the first, the vectors r, s and t are calculated, and in the second, the vectors U, V and W.

Again, with this method, the researcher is limited to studying trade diversion effects only. They will be measured by the elements $_kE_{ij} = {}_k\tilde{X}_{ij} - {}_kX_{ij}$, that is, the "errors" of the RASAT estimates.

In addition, the straight application of the whole model specification would bring about the inconvenient result of a zero sum effect for the world as a whole, as in Verdoorn and Schwartz (1972). In order to relax this constraint, some modifications of the model are required. It can be assumed that much of the integration effect is contained in the factor U_{ij}. Therefore, the constraint related to total trade between $\underline{i}$ and $\underline{j}$ can be dropped, and a new estimate obtained from:

$$(13) \qquad {}_kE_{ij} = {}_kX_{ij} - {}_kX_{ij}^{(t)(o)} \cdot r_i \cdot s_j \cdot t_k \cdot {}_kV_i \cdot {}_kW_j$$

Other variants of the same basic model can be obtained through the process of successively dropping constraints [6/]. A trade-off decision must be made however, at some point, where the advantages of enlarging the scope for integration effects, by further relaxation of constraints, are offset by the increasing loss of information and a poorer overall fit.

Mayes extrapolated a three-dimensional array of trade flows for 1965, from 1959 data, and used the results:

i) to test the accuracy of the RASAT model for forecasting purposes;

ii) to compare the EFTA effects as shown by this method to other results, obtained from different studies.

While there is evidence of the RASAT model performing well as a method for determining commodity trade flows under conditions of limited information, the residual errors can hardly be considered as indicators of the trade policy effects (D. Mayes, op.cit., p. 219). Of particular interest is the result obtained by regressing the RASAT residuals on trade diversion estimates from ex-ante predictions. This provided evidence that the a priori price-elasticities were grossly underestimated. This bias confirmed the idea put forward by Verdoorn and Meyer zu Schlöchtern about the indirect effects of integration related to promotional efforts and better product information (which are not allowed for in the use of price-elasticities to determine tariff effects). But it also reflects the basic deficiency of all residual models in lumping together dynamic and static

effects. This explains why   in most cases the effects obtained from re-
sidual imputation are larger than those obtained with analytical models.

Common to all approaches so far reviewed is their inability to neu-
tralize the changes in the competitive position of suppliers, in order
not to distort   the estimates of the effects solely attributable to tar-
iff policy. This issue seems important because there are several   rea-
sons to believe that the UK, among other Western countries, lost substan-
tial export shares to the benefit of Japan and other non-European suppliers,
throughout the sixties.This could explain why most empirical studies point
out to evidence of strong trade diversion against EFTA suppliers, and ex-
ternal trade creation favouring non-European competitors , caused by   the
formation of the EEC.

d)   A study by Williamson and Bottrill   (1971) brought fresh evi-
dence on this issue, by attempting to eliminate the effects of differential
competitive strengths.

In this study, the world was considered to be divided into three
mutually exclusive and exhaustive blocs- the EEC, EFTA and the Rest of
the World (ROW) - the actual trade flows between them in year t forming
the world trade matrix $A^{(t)}$ (3 x 3). A matrix of identical dimensions, $\tilde{A}^{(t)}$
represented the situation that would have materialized in year t, had the
EEC and EFTA not been established. A measure of gross trade creation is given
by   the array $E^{(t)} = \tilde{A}^{(t)} - A^{(t)}$.

An essential feature of this approach is the use of ROW as a con-
trol area for the export performance of the other two blocs, a suggestion
put forward by A. Lamfalussy (1963) in his earlier study on the effects of
the EEC. According to this author, "the share performance of the j th sup-
plier in markets where he neither gains nor looses preferential advanta-
ges gives a good indication of his hypothetical performance in markets
which were in fact being affected by integration".

The extrapolation of $A^{(o)}$ in order to get $\tilde{A}^{(t)}$ followed two alterna
tive ways:

i) By using the formula:

$$(14) \qquad \tilde{\mu}_{ij}^{(t)} = \mu_{ij}^{(o)} + \frac{\mu_{ij}^{(o)}\left[1 - \mu_{ij}^{(o)}\right]}{\mu_{i3}^{(o)}\left[1 - \mu_{i3}^{(o)}\right]} \left[\mu_{i3}^{(t)} - \mu_{i3}^{(o)}\right]$$

(i, j = EEC, EFTA, ROW ;   3 = ROW)

Accordingly, the predicted gains of i in j's market will be small if the previous market share was either very small (suggesting a low level of potential trade between the two blocs),or very large (suggesting that there is little scope for gaining shares at the expense of other blocs).

ii) By regressing the μ_{ij} on μ_{i3} over the years 1954-59 and then using the results to predict the $\tilde{\mu}_{ij}$ after 1960.

As the sum of the shares as predicted by either of the two methods only accidentally would equal one, they were normalized by multiplying $\tilde{\mu}_{ij}$ by $1/\sum_j \tilde{\mu}_{ij}$.

The usefulness of this approach is however severely reduced by the impossibility of deriving independent estimates for net trade creation, trade diversion and external trade creation. The estimates refer only to the total variation of trade between the three blocs considered. These gross estimates had to be separated into their components, according to a set of fixed proportions drawn from earlier empirical studies. For this purpose, the authors assumed that external trade creation would have been roughly equal to trade diversion for the EEC, whereas it tended to be nil for EFTA. In Truman (1969), they found evidence for their further assumption that trade diversion represented approximately 25% of trade creation in the EEC, but Balassa's estimate of 50% was also taken into consideration. Finally, the 1969 study made by the EFTA Secretariat showed trade creation to have been about 1.25 times the amount of trade diversion in EFTA. According to Williamson and Bottrill's preferred estimate, total intra-EEC trade was 53% greater in 1969 than it would have been in the absence of integration. This increase was attributed to trade creation and trade diversion respectively, according either to a 4 to 1 or a 2 to 1 proportion.

The major deficiency of this method seems mitigated in the face of the apparent lack of sensitivity of total effects on intra-EEC and EFTA trade relative to the proportions arbitrarily chosen for trade diversion and trade creation. However, it was shown by Williamson and Bottrill that the EEC overall estimate was fairly sensitive to dropping the assumption of equivalence between trade diversion and external trade creation. Besides, the EFTA results depended significantly upon the method of prediction that was chosen.

On the other hand, the claimed advantage for this method that it "normalizes" for competitiveness changes cannot be accepted without further

scrutiny. The performance of former colonial powers in third countries'
markets during the sixties would have suffered the effects of the removal
of colonial links, and the consequent loss, or at least erosion, of pre-
ferences. In addition, in the previous decade, the export performance of
European countries in ROW would have been influenced by the policies
adopted to answer the "dollar shortage". For these reasons, it would
appear that the competitive performance of the EEC and EFTA in ROW's mar-
kets after 1960 was weaker than the real situation suggests, thereby gen-
erating an upward bias in the estimates for gross trade creation.

All approaches reviewed here are restricted to a more or less soph-
isticated manipulation of trade matrices and vectors. This mechanical
treatment totally ignores the interpretation of the results in terms of
welfare changes, as no autonomous separation of the overall trade effect
into trade creation and trade diversion is possible. This is the price to
pay for the flexible choice of aggregation and the easy availability of
data. Given the scarcity of relevant disaggregated data on prices, output
or consumption, the use of these methods seems particularly advisable
when a detailed breakdown of trade effects into commodity groups is sought.

6.3. Analysis of shares in apparent consumption

If one wants to know how much of the increase in intra-bloc trade
is due to the replacement of domestic production by imports from partner
countries (trade creation) it is necessary to introduce at some point a
variable associated with the changes undergone in domestic production as a
result of integration. This is the basic idea behind the very similar ap-
proaches developed in the studies of the EFTA Secretariat (1969, 1972)
and Edwin Truman (1969, 1975).

a)   The second EFTA study provides a quantification of the effects of
the formation of EFTA and the EEC, disaggregated into a large number of
commodity groups, upon the trade   of   each member and of the trading
blocs considered as a whole - EEC, EFTA, USA and ROW. The basic assumption
is   that, in the absence of integration, the shares of the imports from
any given country (or bloc) in the apparant consumption of each reporting
country would have developed over the post-integration period according
to the linear trend shown by the same ratio over the pre-integration
period.

Apparent consumption was defined as the residual of Gross Output plus Imports minus Exports. An overall integration effect, measuring gross trade creation, can be determined, in the usual residual manner , as the difference between actual imports from partner countries in any year t (post-integration) and hypothetical imports. These, in turn, are estimated by projecting the pre-integration trend of the share of partners' imports in apparent consumption. In symbols:

$$(15) \qquad E_{pj} = X_{pj}^{(t_2)} - \tilde{\sigma}_{pj}^{(t_2)} \cdot C_j^{(t_2)}$$

$$\text{with} \qquad \tilde{\sigma}_{pj}^{(t_2)} = \sigma_{pj}^{(t_1)} + \frac{t_2 - t_1}{t_1} \left[\sigma_{pj}^{(t_1)} - \sigma_{pj}^{(o)} \right]$$

where $\underline{p}$ indicates a partner country of $\underline{j}$, and o, t_1 and t_2 indicate respectively the base year for the linear trend , the integration year and the reference year, as counted from o.

The analysis proceeds by separating E into trade creation proper and trade diversion. Under the assumption that tariffs totally cover the difference between production costs under protection and under free trade the geographic pattern of supply in the pre-integration period (when the same tariff applies to all foreign supplies) should approximately reflect the relative costs of production in different countries. If ,following tariff changes due to integration, the share of total imports in domestic consumption rises , this is assumed to indicate the extent to which (marginally inefficient) domestic producers were replaced by foreign competitors , i.e., is a measure of trade creation. On the other hand, if the share in domestic consumption of imports from non-partner countries falls, while that of partners rises , there is evidence of trade diversion, which can be measured by the difference between the changes in shares. In symbols,

$$(16) \qquad TD_{nj} = X_{nj}^{(t_2)} - \tilde{\sigma}_{nj}^{(t_2)} \cdot C_j^{(t_2)}$$

$$\text{with} \qquad \tilde{\sigma}_{nj}^{(t_2)} = \sigma_{nj}^{(t_1)} + \frac{t_2 - t_1}{t_1} \left[\sigma_{nj}^{(t_1)} - \sigma_{nj}^{(o)} \right]$$

where $\underline{n}$ indicates a non-partner country relative to $\underline{j}$.

(17)
$$TC_j = M_j^{(t_2)} - \tilde{\sigma}_j^{(t_2)} \ C_j^{(t_2)}$$

with
$$\tilde{\sigma}_j^{(t_2)} = \sigma_j^{(t_1)} + \frac{t_2 - t_1}{t_1} \left[\sigma_j^{(t_1)} - \sigma_j^{(o)} \right]$$

The total effects for country j will be obtained by summing over the effects corresponding to each trade flow:

$$E_j = \sum_p E_{pj} \quad \text{and} \quad TD_j = \sum_n TD_{nj}$$

Since
$$\sum_p X_{pj} = M_j - \sum_n X_{nj}, \text{ it follows that}$$

$$E_j = TC_j - TD_j$$

These equations were calculated by the EFTA Secretariat for each trade flow between every pair of countries (or blocs) and for each commodity considered in a total breakdown of 36. The period chosen for trend analysis was 1954-59.

In order to assess the validity of the assumption that unbiased results could be obtained by linear extrapolation of past trends, another method was used, which assumed the share of imports in j's consumption to have remained constant at the level of the base-year for integration. For instance, the estimate of gross trade creation by means of this assumption would follow from the expression:

(18)
$$E_{pj}^* = X_{pj}^{(t_2)} - \sigma_{pj}^{(t_1)} \cdot C_j^{(t_2)}$$

So much for the import effects. The export effects (F) for each reporting country i were calculated as the sum of the integration effects on imports from i of partner countries p. In symbols,

(19)
$$F_i = \sum_p E_{ip}$$

On the export side, therefore, trade creation and trade diversion cannot be distinguished by country of supply. It is therefore not possible to know how much of the export expansion is due to a cost advantage

relative to producers in the importing country, producers of third coun-
tries or producers of other member countries.

The EFTA method came under some criticism   , some of which was
acknowledged by the authors themselves. It is apparent that the simple
extrapolation of past trends does not allow for changes in the competiti-
veness of suppliers. Neither is any consideration given to the influence
of cyclical factors. While the benchmark years for the trend period
- 1954 and 1959 - were selected on the basis of similar situations in the
business cycle, the projections for later years did not make allowance
for this factor. But perhaps the most serious criticism is related   to
the trend period chosen, which was characterized by a substantial liberal-
ization in trade relations among the industrialized countries. It is un-
likely that the same rising tendency in import shares would have conti -
nued after 1960, even without integration. The result is that the integra-
tion effects as calculated by the EFTA Secretariat on the basis of the
past trends seem downward biased. A more detailed overview of the results
of this study will be left tho Chapter 8, given their importance for the
assessment   of the Portuguese experience with integration.

Despite this bias, the EFTA study represents an important step for-
wards in methodology. The use of import shares neutralizes the income
effect, and the introduction of domestic production allows the researcher
to separate trade creation from trade diversion. In addition, the extensive
work   done on the effects of EEC and EFTA, with detailed results by com-
modity groups and by member countries, makes these studies a forceful
reference work for further research in this field.

b)   The empirical study by Truman, E. (1969) presents several common
features relative to those of EFTA. Shares in apparent consumption are also
used   in order to give a residual measure of integration effects. Three
shares are defined:

i) The share of apparent consumption that is satisfied out of domes-
   tic demand (domestic share)

(20) $$DS_j = \frac{O_j - B_j}{C_j}$$

ii) The share of apparent consumption that is satisfied out of im-
    ports from non-members (partners' share)

(21)
$$PS_j = \frac{\sum_p X_{pj}}{C_j}$$

iii) The share of apparent consumption that is satisfied out of imports from non-members (non-members' share):

(22)
$$WS_j = \frac{\sum_n X_{nj}}{C_j}$$

The sum of these shares will always be equal to unity, by definition, and the sum of their respective changes will be nil. These shares are equivalent to those used by the EFTA Secretariat. As $PS_j + WS_j = 1 - DS_j$, the share of total imports in apparent consumption is complementary to Truman's domestic share. However, some differences remain.

One is of a formal nature and relates to Truman's quite exhaustive identification of the six possible patterns of share changes and their interpretation in terms of customs union theory concepts. Such a pattern is described in the following table:

	ΔDS	ΔPS	ΔWS
1) Double trade creation	-	+	+
2) Internal TC + External TD	-	+	-
3) External TC + Internal TD	-	-	+
4) Double trade erosion	+	-	-
5) Internal TE + Internal TD	+	-	+
6) External TE + External TD	+	+	-

The direction of the changes in the domestic share constitutes the crucial element to determine whether trade has been created or not. If it has, domestic production will have been replaced by imports, either from partners (internal TC), from non-members (external TC), or from both (double TC). If it has not, we have a case of trade erosion, since the proportion of imports in total consumption has decreased. Either this effect has been at the expense of partners' exports (internal TE) or at the expense of those of non-members (external TE), or of both (double TE).

As to the trade diverting effect, the crucial element lies in the comparison between the changes in the partners' and the non-members' share. The fact that these move in the opposite directions indicates trade diversion, which can be of two different types: the most likely case is that trade is diverted from non-members to partners, i.e., from outside

to inside the customs union - this is external TD. In the opposite case, partner's supplies would be replaced by those from non-members' on the domestic market, and so trade is diverted from inside the customs union to outside - that is internal TD.

If only the effects of removing the internal tariffs are considered, the only acceptable outcome would be case 2), in accordance with the static model of partial equilibrium. But if the effects of adjusting to a common external tariff are also considered, a more diversified set of results is possible. In the case where the common external tariff is formed as an average of previous national tariffs, highly protected countries have to lower their duties against outside suppliers and therefore both cases 1) and 2) are likely to occur. Low tariff countries have to increase their external duties, and a possibility arises of case 2) joining others, especially case 6). Consequently, if only tariff changes were taken into account, the increase in partners' shares would be the necessary outcome of the formation of a customs union, therefore resulting in cases 1) , 2) or 6). However, price elasticities of export supply must also be taken into account, instead of their assumed infinite value. If a positive shift in export demand for partners' products causes excessive pressure upon their productive capacity, export prices will very likely rise, thereby shifting competitive advantages to non-members (cases 3 or 5) or to domestic producers (case 4).

Another difference between Truman's approach and that of EFTA is that instead of projecting future values from past tends, the former assumes the values of the shares in a chosen base year to be constant. Two alternative base-years were considered - 1958 and 1960. In the end, the results based on the latter turned out to be those preferred [7/]. The aggregate results were obtained for year 1964 and showed the occurrence of double trade creation for the EEC as a whole. Imports would have increased by US $ 3.1 billion, of which $2.9 billion would have been taken by partner countries and $0.2 billion by non-members. These results were further disaggregated into countries and commodity groups.

The domestic share decreased in all EEC countries, but external trade creation was shown only by the previous high-tariff partners - France and Italy. In Germany, the non-members' share remained unchanged, while for the low-tariff Benelux countries, there was evidence of external trade diversion.

So, the results revealed a close correspondence between the patterns of share changes and the nature of the tariff adjustment. However,

the evidence of external trade creation, high enough to offset the trade diverting effects in the aggregate, may seem exaggerated. Truman interpreted these results as a consequence of lower price elasticities of supply in the partners' economies than in those of third countries. Despite the fact that the tariff changes in imports from partners were much more important, the existence of unused resources in larger amounts enabled third countries to take advantage of the tariff liberalization where it took place. Other authors, however, (e.g. W. Corden, 1975) emphasized the biases implicit in Truman's method. First, the assumption of unitary income-elasticity for import demand has been disputed in many empirical studies on trade between Western economies in the nineteen fifties and sixties. If this parameter were allowed to exceed one, by adjustment, the domestic share would fall even without the formation of the EEC. Therefore, Truman's results for trade creation seem overvalued, particularly in comparison to the EFTA Secretariat's . These were obtained by means of trend projection, which in a way accounts for an elastic response of imports to income growth. In addition, other tariff policy changes, such as the multilateral reduction under the Dillon Round, and the dismantling of the last quantitative restrictions after 1958, may also explain the overall increase in the non-members' share [8]. Furthermore, relative prices and competitiveness in general may have also changed in a way to favour non-EEC suppliers [9].

The other shortcoming of this method is its neglect of bussiness cycle fluctuations, when one compares between any two years, despite the fact that they might be situated in two different wave-sections. Both this and the income elasticity criticisms were dealt with by Truman himself in a later study (E. Truman, 1975, pp.3-40). To adjust the three basic shares to eliminate the impact of cyclical conditions in domestic markets, Truman used the following regression model:

(23) $$i S = a_i + b_i \, QD + c_i \, t + u_i$$

for $i = D, P$ and W

where $i S$ represents the ith basic share, QD the level of domestic demand pressure, t the number of years and u_i is the error term. It was expected that the sign of $\underline{b_i}$ would be negative for DS, and positive for PS and WS. However, it happened that the regression results did show a quite diverse pattern. Only a minor proportion of the regression equations simultaneously provided the "right" sign and a statistically significant size

for the b-coefficients. These estimates were then used to construct cycli-
cally adjusted shares from the expression

$$(24) \qquad iS^* = iS + \hat{b}_i \left| QD^* - QD \right|$$

where QD^* represents the "full-employment" level of domestic demand
pressure.

Due to evidence of a rising trend in the import shares during the
pre - 1960 period, Truman recognizes the possibility that, in the absence
of integration, these shares might have continued to rise [10] and so,
his previous estimates for trade creation were oversized, and vice-versa
for trade diversion. The relationship (23) was estimated for the pre-integra-
tion period and the results were used to predict the three basic shares for
the period 1961-68. This method of extrapolation seems preferable to the
one used by the EFTA Secretariat, in that it also takes account of domes-
tic demand pressure, in addition to the time trend. A variant of the same
approach consisted in regressing the said relationship for the two pe-
riods, pre - and post - integration, and comparing the coefficients on the
time variable. This multitude of methods, while all sharing the same re-
sidual approach, allowed the author to derive a whole range of results
and to select a preferred set, on the basis of some criteria.

The preferred set of results was the one obtained by comparing the
1968 actual shares with the 1960 cyclically adjusted shares. In fact, in
spite of the adjustment, these results do not add much to the previous
conclusions reached by the same author. The traditional outcome of inter-
nal trade creation plus external trade diversion was observed in a minor
proportion of cases. On the other hand, over half the cases produced
examples of double trade creation. For the EEC as a whole, net trade
created would have reached $ 8.3 billion. Approximately 25% of gross trade
creation was external, which was in part attributed by Truman to the
influence of the Dillon and Kennedy Rounds.

c) If they had projected from a too steep pre-integration trend, the
EFTA Secretariat would have obtained lower limits for trade creation,
while Truman's assumption that the entire change in the import consumption
ratios was due to integration, without making allowance for any trend,
would have provided it with an upper limit.

M. Kreinin (1972) tried to close the gap, by isolating the integration
effect from other factors, such as income, price and preference effects,
with the help of two normalization procedures, taken in succession:

i) Using the changes in similar import-consumption ratios for the USA over the post-integration period as a "mirror-image" of what would have happened to EEC countries, had integration not taken place. This implies that the factors affecting imports would have moved during the 1960s in an identical fashion in the two areas, and that the reactions of both economies to these changes were the same.

ii) Adjusting the results emerging from the comparison between the actual and the hypothesized (through i) EEC ratios, by taking into account the measurable biases contained in them, namely the differences in income and price movements between the USA and the EEC.

Due to the larger degree of self-sufficiency of the USA, some modifications had to be introduced in the otherwise simple normalization procedure described under i). Trade diversion by the EEC was estimated by the difference between the absolute increase of the US import-consumption ratio and the increase of the EEC external import-consumption ratio. An estimate of trade creation is produced by comparing the actual to the hypothetical change in the EEC total import-consumption ratio, where the latter was obtained by adjusting the change in the US import-consumption ratio upwards, through multiplication by the ratio of EEC total to external imports.

The observations for 1959/60 were taken to represent the immediate pre-integration years $\underline{11/}$, while estimates were calculated for the years 1967/68 and 1969/70. The gross estimates obtained through procedure i) were further improved by allowing for different income and price paths. Growth in the US was 4.5% short of that of the EEC in the eight-year span, and 17% below in the ten-year span. Using appropriate estimates for the income - elasticities of demand and import demand, it was possible to calculate how much the US import - consumption ratio would change if the growth rate were the same as in the EEC. This adjustment led to an increase of trade diversion and a decrease of trade creation, compared to the unadjusted estimates (since the hypothetical ratios were overbiased). Regarding price movements, the changes of the US and EEC shares in third markets were taken as a measure of relative competitiveness and the discrepancies used to adjust the results in some sectors. The final estimates for the EEC as a whole put trade creation at $4.4 billion and $7.3 billion, in 1967/68 and 1969/70, respectively, and trade diversion at $1.6 billion and $2.4 billion.

As D. Mayes (1978) observes, this process of "normalization" is

highly dependent upon the choice of normalizers and also upon the type of
ad hoc adjustments. For 1969/70, published estimates of trade creation
range from the figure indicated above (US normalized, plus adjustments)to
$21 billion, which was reached by using Japan as a normalizer. Trade di-
version ranges from the above mentioned figure (which is a maximum) to
minus $4 billion, that is, net external trade creation, also using Ja-
pan as a control country.

Despite broad agreement with the results obtained with similar
share methods, the validity of Kreinin's estimates is questionable on the
grounds of the subjectivity that is associated to the definition of "nor-
mality". It is not realistic to assume that the evolution of the US econo-
my was unaffected by the formation of the EEC, given the strong interde-
pendence between such large trading blocs. And even if it were, the abili-
ty of US trade to provide a mirror-image of what the evolution of EEC trade
would   have been in the hypothesis of non-integration, is severely hand-
icapped   not only by different trade policies, but also because the US is
much more self-sufficient than the EEC.It seems unjustifiable in that case,
that   the   US income-elasticity of import demand had been used in or-
der to adjust the EEC figures for the import-consumption ratio (B. Bala-
ssa, 1975).

d)   Because these methodological approaches provide a distinction be -
tween trade diverted and trade created, they may seem suited to empirical
verifications of the propositions derived from the theory of customs un -
ions.However, as A. Tovias (1982) demonstrates, this conclusion is unwar-
ranted. The   share   methodology, as well as other methodologies to be
reviewed below, produce a quantification of the trade flows that   are
created or diverted as a result of the formation of a preferential trading
area. Only on the basis of very strong assumptions about the level and shape
of   the   supply functions, is it possible to infer welfare judgements
from measured trade effects. And under no circumstance is it allowed   to
assume a one-to-one relationship between such effects and the welfare mea-
sures of trade creation and trade diversion, as it is often implied in the
conclusion that a certain integration scheme is beneficial when the amount
of trade created exceeds that of trade diverted (or vice-versa).

If the country whose welfare changes are to be studied is small
enough relative to the outside world and the other members of the prefe-
rential trading area are taken together, the assumption of perfectly elas-
tic supply curves for these two blocs seems realistic. If competitive con-

ditions are further assumed to be roughly the same between the two blocs, trade diversion will be zero, and the only effect of integration will be in terms of trade creation . The welfare measurements of this effect (that we shall study in Chapter 5 with the help of the "triangles" method) is obtained by multiplying the estimated volumes of trade created by the "ad valorem" m.f.n. rate of duty, and dividing by two. In the opposite case, production costs in the partner countries are assumed to be so high as to be inferior by an infinitesimal amount to the equilibrium domestic market price before integration. In this case, integration will lead to total re-placement of the outside world by customs union members in the supply to the home economy, without any change in the domestic price (provided that the common external tariff is no lower than the previous m.f.n. rate).There-fore , trade creation will be zero and the welfare effect of integration will be entirely negative. The application of the share method to this case would obtain the following result: an increase in imports from part-ner countries equal to the decrease in imports from the rest of the world. To obtain the welfare measure of trade diversion (that corresponds to the customs revenue forgone by the state) one has to multiply the total value of trade diverted by the m.f.n. rate.

In any of these limiting cases, the welfare changes are easily obtained from the empirical estimates of trade effects. However, the most likely situation to occur is intermediate: production costs in partner countries are somewhere between the world price and the domestic price-cum - tariff level,and both trade creation and diversion are expected. But without further knowledge about the relative costs of production, it is not possible to evaluate these effects in terms of welfare. A. Tovias considered the values determined   on the basis of the procedures described above as upper limits for trade creation and diversion, respecti-vely. This affords a rough order of magnitude for the changes involved, but does not allow one to judge whether the final impact was negative or positive in terms of melfare. Is there any solution?

In Figure III.2,S_h and D_h represent supply and demand curves for a particular sector in the domestic economy. S_w and S_p represent the (in-finitely elastic) supply curves of the rest of the world and the union members, respectively. S_w^t indicates the level of the domestic tariff-cum -price in the pre-integration equilibrium. The area of the vertically striped triangles measures trade creation gains, whereas the area of the horizontally - striped rectangle measures trade diversion losses. Share - method - based studies take "gross" trade created as the increase in im-

Figure III.2

ports originating in partner countries, which in our case would equal area
ABCD. Trade diverted is taken as the decrease in imports from non-partner
countries, equivalent to EFGH. Therefore, the amount of net trade created,
as obtained in such studies, would correspond to the whole difference bet-
ween the two areas, as given in Figure III.2 by the two dotted rectangles
plus the horizontally striped rectangle. This has no connection whatso-
ever with the theoretical concepts involved.

Once the level of S_p is determined, the relevant areas in welfare
terms could easily be obtained from the results of share-method-based stud-
ies. The problem rests on how to determine that level. A possible method
consists in inquiring directly into the cost differences between the main
producing areas both inside and outside the integrated area, for the pro-
ducts involved. This method requires considerable homogeneity of such pro-
ducts. A second method assumes the tariff rate to indicate the percentage
difference between domestic costs and the world price level. Therefore,
the common external tariff, or in the case of a free trade area, the ave-
rage tariff rate of the main suppliers, would give an indication about
the cost differential of S_p and S_w. While the fact that the tariffs are
given in percentages helps in dealing with heterogeneous sectors, the prac-
tical and theoretical problems associated to tariff weighting are of course
present. The emergence of non-tariff barriers and the existence of seve-
ral market distortions make the tariff level a poor indicator of general
competitiveness, especially in newly industrializing countries. Finally,
there is the alternative of improving and extending the methodology of es-

timation of integration effects, to cover not only the changes in amount and direction of trade flows, but also the changes in the terms of trade. If trade diversion occurs, the (small) domestic economy will suffer a deterioration in its terms of trade equal to the difference $S_p - S_w$. If the economy is important enough to influence the world price, this shift may be outweighed by an improvement in its terms of trade relative to the outside world (under this assumption the foreign supply curves would have finite elasticity). Unfortunately there has not been much work done on terms of trade changes as an integration effect in small economies. Following a pioneering model by Mundell (1964), Petith (1977) estimated the terms of trade gains obtained with the formation of the EEC.

We may conclude, then, that if the results of the application of the share method are not carefully interpreted, they may be misleading, as they offer an overfavourable image of the benefits of integration. Trade created will almost always look too large in comparison to the welfare gains, while trade diverted may exceed or not the welfare measure of losses.

If warranted assumptions about the cost differential between partners and non-partners cannot be made, it is not possible to relate the results of empirical studies to welfare changes, except in limited cases. The policy interest of such studies is therefore considerably reduced. Nevertheless, ex post or ex ante estimates of the trade impact of economic integration are still useful in order to infer the implications for the external equilibrium, the size and speed of internal adjustment and to allow for dynamic effects of integration.

6.4. Estimation of parameters of import demand

Variations of import demand over time have been traditionally associated with income growth and changes in competitiveness. This relationship is expressed in terms of structural parameters that are assumed constant over a reasonably long time period for a specified country or group of countries. It is possible therefore to present an "anti-monde" hypothesis on the basis of estimated parameters (generally on income) for the period immediately preceding membership of a preferential trading area. While this approach draws us closer to the analytical methodology, it is

convenient to point out that tariffs and their direct effects are still absent from the framework of analysis.

a)   An early attempt to introduce income directly into the picture was done by I. Walter (op. cit., p.83). As seen abouve, his estimates of the EEC effects rest on the assumption that trade with EEC partners as a share of total trade would follow the same path after 1958 as before. Part of the residual could however be attributed to the faster economic growth experienced by   the EEC countries during that period. The trend for an "average regional propensity to import", defined as real imports from the EEC divided by real GNP, was found for the pre-integration years 1953 to 1958, and then extrapolated to 1963. This procedure allowed Walter to discount the "growth effect" and come up with a more plausible version of the EEC effect. Even so, the residual that was attributed to this effect was still quite large, representing between 29.7 and 42.8% of the total intra-EEC trade in 1963, according to the extrapolation method . The use of   linear trends of average propensities to import presents, therefore, two main sources of inconvenience: it is rather mechanical, involving more or less arbitrary choices as to the extrapolation method   adopted, and it ignores any trend in the marginal propensities to import.

The belief that there is a rising trend in the marginal propensity to import, and that this must account for most of what otherwise would have been labelled as an "integration effect" led Clavaux (1964) to estimate the value of this parameter for the pre-integration period. He did so,by regressing intra-EEC trade in manufactures on the total domestic expenditure of all EEC countries, weighted with the corresponding imports in order to adjust for different marginal import quotas by country. The aggregate measure of the marginal propensity to import from the EEC was used to estimate hypothetical imports for the years 1959 to 1962, and a residual was then calculated, that measured the EEC effect on intra-trade,a rough measure for gross trade creation [12/].

The difficulty in obtaining reliable statistical estimates for the marginal propensity through OLS regression, over a short period of time, was the main reason behind Balassa's preference for the concept of "ex post income elasticity of import demand".

It was defined (B.Balassa, 1967) as the ratio of the average annual rate of change in imports to that of GNP, over a certain number of years. It was applied not only to total imports, but also to imports from part-

ner countries (intra-area trade) and from non-member countries (extra - area trade).

Balassa's approach is based on the assumption that, in the absence of integration, income elasticities of import demand would have remained unchanged. Comparing the actual values taken by the elasticities in a specified post-integration period to their values in the chosen base-year period, yields the following alternative outcomes:

- A rise in the income-elasticity for intra-area imports, irrespective of whether this has been due to substitution for domestic or foreign sources of supply, indicates gross trade creation.

- An increase in the income-elasticity of demand for imports from all sources indicates "trade creation proper".

- A fall in the income elasticity for extra-area imports indicates trade diversion.

Using the 1953-59 period to measure the pre-integration elasticities,Balassa made two sets of estimates, one for 1959-65 and the other for 1959-70 (published in a more recent study: B.Balassa, 1975, p. 84). "Trade creation proper" was found to be the main effect of the formation of the EEC. It was expressed not in money units , but as an absolute difference of elasticities. Between 1953-59 and 1959-70, the ex-post income elasticity of demand for imports increased from 1.8 to 2.0, on aggregate. No net trade diversion was found for aggregate imports,presumably because external trade creation must have offset some negative effects.Balassa's method presents the additional advantage of offering the possibility of disaggregated results by commodity groups $\frac{13/}{}$.

b)   Balassa also estimated the impact of EEC formation upon the export trade of major groups of non-member countries, by using a very simple variant of the trade share method. The procedure consists of calculating the residual difference between the actual EEC imports originating in a given area in a specified post-integration year, and the hypothetical imports from the same area and in the same year, had the EEC not been formed.This total effect is then separated into three different effects, due respectively to the formation of the Common Market, competitiveness changes and price changes.

The "anti-monde" imports from a specified area are estimated on the assumption that they would grow in real terms at the same rate as to-

tal extra-EEC imports before integration. Therefore, the total effect (TE) for a given area i is given by:

$$(25) \qquad TE_i = X_i^{(t)} - X_i^{(o)} (1 + h)^t$$

where $\underline{h}$ stands for the annual rate of growth of **extra-area** EEC imports (in real terms) over a pre-integration period. If $\underline{g}$ stands for the equivalent rate of growth corresponding to the post-integration period, then

$$X_i^{(o)} (1 + g)^t$$

measures the EEC imports from area i that would occur in year t had they grown at the same rate as total imports from non-members. And, if $P_{t/o}$ is the price index in year t with base 0,

$$\frac{X_i^{(t)}}{P_{t/o}}$$

indicates imports in year t expressed in constant prices.

By adding and subtracting these expressions twice , it is possible to express the total effect as:

$$(26) \qquad TE_i = \left[X_i^{(o)} (1 + g)^t - X_i^{(o)} (1 + h)^t \right] +$$

$$+ \left[\frac{X_i^{(t)}}{P_{t/o}} - X_i^{(o)} (1 + g)^t \right] +$$

$$+ (X_i^{(t)} - \frac{X_i^{(t)}}{P_{t/o}})$$

The first expression between square brackets indicates the Common Market effect, in constant prices and exchange rates. It evaluates the expansion or contraction of area i's exports to the EEC, assuming the same competitive power and the same commodity mix as the average non-member supplier.

The second expression represents the Competitiveness effect, which indicates whether or not area i managed to export to the EEC more or less than was expected, taking into account the export performance of all other non-members.

The third expression in (26) gives a measure of the Price effect, which allows for the difference between area i's exports in current and constant prices.

According to the results obtained by Balassa (1975, p.88), all non-member areas, except the US and the UK, suffered a negative export impact in 1970 from the formation of the EEC 12 years before, but some of them managed to offset this loss with gains in competitiveness [14/].

It was the method based on the calculation of ex post income elasticities that deserved most attention from critics. The validity of the results is dependent on the following set of assumptions:

i) Imports are essentially determined by income not only in respect to volume, but also to geographical pattern, as different flows by origin are associated to different commodity compositions. Changes in competitive power, in exchange rates, in tariffs (other than those induced by the formation of the EEC) and business cycle fluctuations are therefore neglected.

ii) Income variation is not affected by the reallocation of resources, increased competition or greater scope for scale economies, brought forward by economic integration. Thus, the dynamic consequences of integration are excluded.

iii) The value reached by the income elasticity of import demand in the period prior to integration (in Balassa's case, 1953-59) is considered to be "normal", and therefore, it can describe the relationship between imports and income in the periods 1959-65 or 1959-70.

The validity of Balassa's results was questioned by several authors, who stressed the serious bias resulting from assumptions i) to iii). P.J. Verdoorn and C.A. van Bochove (1972, p. 343) disputed the assumption that imports by source were not sensitive to changes occurring on the supply side. The long-term decline in competitiveness in the UK had to lead to replacement of UK exports by EEC members', which cannot be interpreted as trade diversion. On the contrary, the shifts of comparative advantages to Japan and the NICS in a number of manufacturing sectors, while leading to increased imports from these sources, is not external trade creation. The same authors stressed that Balassa's income elasticities are gross elasticities, in the sense that they attribute to GNP changes total responsibility for changes in imports, whereas other empirical sour-

ces recognize the important role played by cyclical variables, not always correlated with GNP, as pressure of demand and inventory formation. This kind of criticisms open the door to more sophisticated models, including variables other than income, of the kind put forward by M. Kreinin (1969), and to the analytical kind of approach. But, of course, in this way the implicit simplicity and flexibility of Balassa's method is entirely lost.

J. Clavaux (1969) objected to the "normality" of the estimated elasticities for the pre-integration period and suggested instead a long term measure of the income elasticity of import demand. This could be obtained in an approximate way from the observation of historical trends in income, production and consumption in the industrial countries. In fact, it is difficult not to recognize that the period 1953-59 was far from normal. Trade and exchange liberalization during this period tends to bias Balassa's elasticities upwards and therefore to produce shrinked estimates of trade creation. On the other hand, to advance single estimates for the long term income elasticity is of little use when the purpose is to disaggregate by commodity groups and to distinguish between extra- and intra-area imports. Furthermore, there are differences in the experiences of the countries belonging to the EEC and of other industrial countries when it comes to the relationship between income and imports. And even if these might coincide in the long run, there is no assurance as to whether it would be the case for the "anti-monde" period.

c) While rejecting this solution, W. Sellekaerts (1973) criticizes Balassa's method on similar grounds. By selecting alternative lengths for the pre- and post-integration periods, he demonstrated that the pattern of results is to a large extent sensitive to this choice. This is so because the growth rates of income and imports fluctuate widely in connection with the business cycle. Despite showing the same average GNP growth rate, the two periods chosen by Balassa - 1953-59 and 1959-65 lump together different phases of the cycle. Sellekaerts computed Balassa's measure of income-elasticity of import demand for two peak periods of growth in the EEC countries - 1951/55 and 1959/63 -, and for two trough periods - 1955/59 and 1963/67. The comparison between elasticities before and after integration shed a different light on the trade impact upon third countries. Immediately after the Treaty of Rome, external trade was created, especially in fuels, machinery, transport equipment and miscellaneous manufactures, whereas, after 1963, trade diverting effects seem to have prevailed. However, these were not strong enough to have outweighed the former effects,

on the aggregate.

In order to free the results from arbitrariness in the selection of periods, Sellekaerts favoured the linear regression technique to compute the income-elasticity of import demand. This technique is presented as superior to Balassa's short-cut formula for three reasons: the statistical significance of the parameter can be tested; the percentage variation in imports that can be explained by the variation in income is made explicit; and the statistical significance of the change in the parameters between the post- and pre-integration periods can be verified by means of an appropriate test.

Sellekaerts applied this method to the evaluation of the impact of the EEC on imports from third countries [15/]. The demand for extra-area imports in the EEC was expressed as a linear function of GNP, and the parameters were assumed to be valid for the pre- and post-integration periods:

$$(27) \qquad\qquad X = \alpha_1 + \alpha_2 \; GNP + w$$

This regression model was to be compared to a second model where the impact of the EEC on its extra-area suppliers is also explained by an integration "dummy":

$$(28) \qquad\qquad X = \beta_1 + \beta_2 \; D + \beta_3 \; GNP + \beta_4 \; D \; GNP + v$$

where D takes values 0 or 1, depending on whether it refers to a pre- or a post-integration year. The particular shape of the model allows for the separate evaluation of the integration shift into a slope and an intercept component (indicating respectively an "once-for-all" and a gradually increasing effect). If the F - test shows that the change from the first to the second model is significant at the 10% level [16/], the hypothetical imports in the post-integration period will be computed from equation (28) (regressed for the pre-integration period with D=0) and actual GNP values. If the algebraic difference between actual and hypothetical imports is positive, external trade creation will have occurred; if negative, it indicates trade diversion. Taking 1953/59 as the pre-integration period, Sellekaerts provided evidence of external trade creation in the total amount of US $ 26.4 bn. up to 1967. This effect would have occurred more strongly in machinery, fuels and raw materials. Slight (statistically non-significant) trade - diverting effects would have occurred in food, chemicals and miscellaneous manufactures. However, Sellekaerts recognizes that the tariff changes associated to the EEC formation will have had only a

partial influence. The strong increase in EEC imports of machinery is also attributable to the dynamic effects of the formation of the Common Market, in particular the upsurge in capital movements from the U.S.A. in order to circumvent the C.E.T.. Increased imports of fuel took place in the early sixties as a result of the introduction of coal-replacing technologies.

d)   Another direction to follow, in order to improve the quantification of trade effects, is to add to the income parameters a second explanatory variable allowing for the changes in competitiveness. M. Kreinin (1969) specified the following predictive model, where the latter variable is represented by a price ratio:

$$\log M = \alpha_1 + \alpha_2 \log GNP + \alpha_3 \log \frac{P_M}{P_D} + u$$

where all variables are expressed as indices, P_M indicates the import price and P_D the domestic wholesale price. This regression was run for total, intra-area and extra-area imports of each EEC member country, on data based on annual observations for the periods 1953/61 and 1954/62. On the basis of the estimated coefficients, projections were made for the years 1962/65 and 1963/65, respectively. The difference between actual and hypothetical imports was attributed to economic integration.

However, this attempt proved quite disappointing. The estimated price coefficients were almost invariably insignificant, and in 14 cases out of 30 carried an unexpected positive sign. Those results were attributed by Kreinin himself to the weakness of his data base on prices, as other studies have undoubtedly established an empirical negative relationship between imports and relative import prices for the same period, and the same countries. The inclusion of nonmanufactured goods makes imports and domestic price indices less comparable. The fact that annual rather than quaterly observations were used increased the possibility of interaction between domestic and foreign prices (due to exchange rate policy, demand-management policies, competitive efforts, etc.) being reflected in the data.

Apart from these circumstantial deficiences, it does not seem that this method represents a significant progress relative to the work by Balassa and Sellekaerts. The inclusion of the years 1960/62 in the regression period, if necessary for the purpose of increasing the number of observations, has an important drawback. It puts up $\tilde{\alpha}_2$ for two reasons; that

those years were a peak period in the business cycle, and that they already carried some influence from the tariff changes associated with the forma- tion of the EEC. Moreover, the loss of flexibility incurred by the inclu- sion of a price variable when it comes to the possibility of disaggregation into commodities is not compensated by any gains as to the understanding of the direct influence of tariffs on imports. Tariff changes are still out of the picture and they will only be associated to price changes in analy - tical models.

6.5   Applications of the gravity model

In the field of international trade, as in many others, grav- ity models have become highly popular for several purposes. In the broad- est sense, they attempt to find a quantitative explanation for a given flow of trade between two countries in a combination of mutually attractive factors (the economic "masses" that can be represented by income, popu- lation , etc.) and of mutually repulsive factors (geographical, social, economic and pychological distances). Three main purposes have been served by the construction of this type of model:

- evaluation of the factors that determine international trade;

- prediction of future trade networks;

- quantification of trade effects from preferential arrange- ments.

In Chapter 9, we shall study this models in more depth, with re- ferences to some of its analytical and predictive applications. Here, we review the works by J. Waelbroeck, N. Aitken, and W. Prewo who pre- sented three different versions of the gravity approach to quantify the effects of economic integration in Western Europe.

a)   J. Waelbroeck (1964) adopted a gravity model that had previous- ly been estimated by a Finnish economist, Pulliainen, in a cross-section analysis involving 60 countries, in 1958:

$$(29) \qquad X_{ij} = C \; C_i \; C_j \; \frac{Y_i^{\alpha_1} \; Y_j^{\alpha_2}}{D_{ij}^{\alpha_3}} \; U_{ij}$$

where C, C_i and C_j are parameters for scale, "export push" and "import pull", respectively, Y_i and Y_j are the GNP level of the exporting and importing countries, and D_{ij} is the distance between them. Once $\hat{\alpha}_1$ and $\hat{\alpha}_2$ were estimated for 1958, it was possible to project a trade matrix for 1962 through the expression:

$$(30) \qquad \tilde{X}_{ij}^{62} = X_{ij}^{58} \; Y_i^{\hat{\alpha}_1} \; Y_j^{\hat{\alpha}_2}$$

where y_i and y_j are actual GNP indices at constant prices, 1958/62. The central assumptions here are that income-elasticities, transport costs, degree of "openness" and competitiveness have not gone through important changes between the base and the projection years. If both i and j were EEC members, $X_{ij}^{62} > \tilde{X}_{ij}^{62}$ would indicate trade creation; if j were an EEC member, but i were not, $X_{ij}^{62} > \tilde{X}_{ij}^{62}$ would indicate external trade creation, and $X_{ij}^{62} < \tilde{X}_{ij}^{62}$ trade diversion.

Waelbroeck concluded from his results that important changes in the geographical orientation of trade had occurred between 1958 and 1962 which were quite independent of the formation of the EEC. By projecting the 1958 matrix backwards to 1954, Waelbroeck found out that the EEC internal trade lagged clearly behind the projected values by an average margin of 12%, whereas there was a very reasonable fit for EFTA and the U.S.A.. Therefore, a trend for trade regionalization was already under way in the EEC before 1958. How much of this trend ought to be attributed to the exchange controls in force, due to the "dollar shortage", cannot be quantified with precision. It is likely, though, that the regionalizing trend would have continued until 1962, even without the formation of the EEC. Had this been the case perhaps the trend would have been weaker. The average bias between actual and projected values for EEC intra-area trade increased to 16% in 1962. However, Waelbroeck did not consider this difference to be a sufficient manifestation of an unambiguous "Common Market" effect [17/].

Parameters α_1 and α_2 measure "cross-section" income-elasticities of export supply and import demand, respectively. As such, Waelbroeck's model adds a general equilibrium feature to the methods described in the previous section, which were centred around the income-elasticity of import demand only. However, there are reasons to believe, as Balassa (1967) did, that this parameter is more correctly estimated in a time-series context (either by means of "ex post" or linear regression technique)

separately for each EEC country, than in a cross-section type of analy-sis, particulary as $\hat{a}_2$ is an <u>average</u> income-elasticity of import demand considering all countries included in the trade matrix, and not only the EEC countries. Since the share of foreign trade in GNP is higher in the indus-trialized countries than in those less developed, those average values re-present an underestimation of the "true" elasticities for the EEC countries. Therefore, the higher than expected values found for trade creation are not only a result of a pre-existing regionalization trend, but also of a downwards biased projection.

b)   The method suggested by N. Aitken (1973) presents three innovating features in comparison to Waelbroeck's pioneering work. It is developed along a more elaborate type of gravity model   which had been tested some years before by Linnemann (1966); the estimation of trade effects is done by use of the preference parameters included in the model instead of the usual comparison between projected and actual values; and the cross-section model is regressed for a sucession of years, instead of "accept-ing" the parameters as estimated for a given reference year.

The observations relate to a set of 132 trade flows between EFTA and EEC members, generally described by the model:

$$(31) \qquad X_{ij} = \beta_o \; D_{ij}^{\beta_1} \; Y_i^{\beta_2} \; Y_j^{\beta_3} \; N_i^{\beta_4} \; N_j^{\beta_5} \; A_{ij}^{\beta_6} \; (P_{ij}^{EEC})^{\beta_7} \; (P_{ij}^{EFTA})^{\beta_8} \; U_{ij}$$

where N_i and N_j are the populations of countries i and j, A_{ij} is a dummy variable for adjacent or neighbouring countries and the other sym-bols have the same meaning as above. P_{ij}^{EEC} and P_{ij}^{EFTA} are dummy var-iables that take value 2 or 1, according to whether i <u>and</u> j belong or not to the same trading bloc.

The value of $\hat{\beta}_7$ measures the extent to which trade between i and j is increased because of their joint membership of the EEC. We may recogn-ize the residual difference between each actual trade flow and its "anti-monde" in the expression:

$$(32) \qquad\qquad\qquad X_{ij} \; (1 - \frac{1}{2^{\hat{\beta}_7}})$$

which, if added over the i's and j's, gives the aggregate trade creating effect of the EEC. Therefore, this method is still of the "residual" type, but it does not require so many assumptions as those that we have been re-viewing. This is the case because the non-preferential factors that also affect trade can be held constant, so that the preferential   effect

is more or less rigorously isolated. Such factors include not only supply and demand, but also to some extent the effects of general changes in trade liberalization and transport costs, which are picked up by $\hat{\beta}_1$ and $\hat{\beta}_6$. Also, any regionalizing trend or cyclical factors will show up in the values taken by the constant $\hat{\beta}_o$. Competitiveness is entirely out of the picture, as X_{ij} is assumed to be the equilibrium value of trade once given exogenous values for supply and demand (as represented by the Y and N variables). But, of course, temporary disequilibria induced by sudden lowes or gains of competitive power, as well as other "invisible" influences on trade are picked up by the error term, U_{ij}.

The above described model was regressed for each year over the period 1951/67. Two important advantages are obtained therefrom Firstly, it is possible to check whether any regional trend pre-existed to the trade arrangements, and simultaneously determine the first year in which integration effects occurred [18/]. Secondly, multi-annual regression allows one to estimate trade preference coefficients for each year in the post - integration period, and hence the expected cumulative growth of integration effects can be tested.

The most important drawback of the method, as Aitken presented it, is that the trade effects as depicted by $\hat{\beta}^7$ and $\hat{\beta}^8$ do not distinguish between trade creation proper and trade diversion. Once the coverage is reduced to EFTA and EEC countries, a dummy variable might be added to indicate trade diversion in the flows between the countries belonging to different blocs. But this case is one of perfect collinearity between the three preference variables. In other words, in Aitken's model, trade among members of the same bloc is tested for preferential effects against trade between members of different blocs, which has to be assumed as "normal" European trade (and therefore exempt of trade diverting effects). If this assumption proved wrong and trade diversion against exports of non-members had really occurred, then trade creation estimates would be overvalued by the extent of trade diversion.

Aitken tested for the existence of trade diversion between EEC and EFTA, by adopting Waelbroeck's procedure [19/]. The base-year relationship was projected to sucessive post-integration years and the projected trade flows compared to their actual values. However, contrary to Waelbroeck, Aitken adjusted his projections by taking into account the observed constancy of the error term over time. This has been taken to indicate the continuous effect of variables not included in the regression.

Both the "dummy" variable and the projection methods showed con-

sistent growth of trade creation throughout the post-integration period,
in EFTA and in the EEC. However, the former method yielded larger estima-
tes than the latter. In 1967, (gross) trade creation in the EEC was eva-
luated at $ 11.1 billion by the coefficient method, and at $ 9.2 billion
by the projection (which represents 82.6% of that value). For EFTA, the
proportional difference is still wider : $ 2.4 billion against $ 1.3
billion (54.2%). The margin shrinks for earlier years. In 1963, the pro-
jection estimates of gross trade creation represented 90.9% and 71.4% of
those of the coefficient, for the EEC and EFTA, respectively. This evolu-
tion, and the evidence of trade diverting effects being prevalent especial-
ly after 1965, make the coefficient estimates for the latest years look
overvalued for the reasons already stated. Therefore, at least for these
years, the projection estimates seem preferable, in spite of their
being dependent on the chosen base-year relationship. The multi-annual re-
gressions show marked differences from year to year in the non-preferential
coefficients, which are a result of the business cycle and the process
of multilateral trade liberalization.

c) The gravity model was further developed with the present purpose
by W. Prewo (1974), who drew on previous work by Leontief and Strout. His
approach adds to the characteristics of models where trade is jointly de-
termined by supply and demand, the features of general equilibrium, link-
ing together all sectors in all countries.

Prewo's version of the gravity model is divided into two parts:
the _international_ equations describe trade between the EEC countries, while
the _intranational_ equations describe the input-output structures for
each member country.

The first part reflects the gravity principle - intra-EEC trade
is directly proportional to demand in the importing country and to supply
in the exporting country, and inversely proportional to trade impediments.
One assumes that if country j uses 10% of the EEC's output of commodity k,
each of its m-1 partners would export 10% of its output of k to country
j, if the intensity of trade barriers were the same for all flows. There-
fore, the influence of all trade impediments can be measured by the extent
to which the proportionality expectation was not fulfilled, as in:

$$(33) \qquad \frac{_k X_{ij}}{\sum_j {_k X_{ij}}} = \frac{\sum_i {_k X_{ij}}}{\sum_i \sum_j {_k X_{ij}}} \cdot {_k R_{ij}} \qquad \begin{array}{l} (i, j = 1, 2, ..., m) \\ (k = 1, 2, ..., n) \end{array}$$

where R_{ij} is a parameter reflecting the total cost of transferring good k from country i to j. In the above expression, $i \neq j$ is assumed for the single flows, but not for the summations. Therefore, these include the domestic output directed to the domestic market.

In the intranational equations, the trade between each member country and the rest of the world must also be taken in consideration. Both imports and exports to and from the rest of the world are assumed to hold a constant share of the market. For each of the m member countries a national input-output structure can be described by:

$$(34) \qquad \sum_i {_k}X_{ij} \left[1 + \frac{{_k}X_{ri}}{\sum_i {_k}X_{ij}} \right] = \sum_\ell {_{k\ell}}a_j \left[\sum_i {_\ell}X_{ji} + {_\ell}X_{jr} \right] + {_k}Y_j$$

where subscript $\underline{r}$ relates to the rest of the world, ${_{k\ell}}a_j$ is the value of input $\underline{k}$ used in the production of each unit of final good $\underline{l}$, and ${_k}Y_j$ is the final demand for k (exogenously determined).

The left-hand side of this equation describes the total supply of $\underline{k}$ to country $\underline{j}$, shared between EEC members (including $\underline{j}$ itself) and non-members. The right-hand side describes the total demand of $\underline{k}$, shared between final and intermediate demand.

After slight modifications, these two equations form the basis of a multinational model, which is shown to have a single algebraic solution. Once a set of final demand vectors for the m countries is established, the output and input levels of all goods can be calculated together with trade flows, for each country. The construction of the "anti-monde" is done under the assumption that the trade rules have not changed, i.e., the ${_k}R_{ij}$ are fixed at their pre-integration level, and the integration effects are calculated according to the usual residual procedure.

The main innovation of this method lies in its general equilibrium framework, which shows the influence upon trade not only of growth in final demand, but also in intermediate demand. Two assumptions underline the results and should be made explicit. The input-output coefficients are assumed constant throughout the post-integration period, which is equivalent to assuming constancy of technologies and scale economies (in addition to import shares). Furthermore, R_{ij} represents the influence on trade flows not only of tariff barriers, but also of relative price differences, transportation costs and other trade barriers. All these non-tariff impediments are supposed to have remained constant at their pre-integration levels of incidence.

THE ANALYTICAL APPROACH

Analytical models attempt to isolate the influence that is speci
fic of tariff changes from other influences on trade behaviour, such as in
come growth, cyclical variations of demand pressure, or the evolution of
international competitiveness. They can be distinguished from each other
on several grounds.

In first place, a distinction arises as to the way of dealing
with the relationship between tariffs and prices. By including the tariff
rate itself (or a ratio of tariffs) into a multivariate model of import
demand, one obtains a direct measure of the tariff-elasticity of import
demand. Instead, one may obtain an approximate measure of the effect of
tariffs on imports by using an estimated value of the price-elasticity of
import demand, and treating tariff changes as if they were price changes.
This second approach requires two basic assumptions:

    (i) That the tariff change will be immediately and totally passed
        on a correspondent change in the import price.

    (ii) That demand for imports reacts to tariff changes in the same
        way as it does to equivalent price changes.

An alternative possibility consists in including the tariff rate
in the calculation of the import price. While this may avoid some of the
problems currently met in the estimation of multivariate models with the
inclusion of tariffs, the simplifications introduced by hypothesis (i) and
(ii) remain.

Analytical models can also be distinguished on the grounds of
using or not a priori values for the elasticities.

The simplest way is to rely on previous estimates of price-elasticity and to predict tariff effects therefrom. Alternatively, one might relate tariff changes (or a measure of relative prices inclusive of tariffs) to the observed shifts in trade, and calculate the corresponding elasticities, which could be used in ex ante or ex post estimates. Two types of model can be used with this method: time-series and cross-section. In this Chapter, we shall review the main contributions to the improvement of these analytical methods. The simbology that was used in Chapter 6 will remain, with some additions where necessary.

7.1. The use of a priori price-elasticities of import demand

Since the estimates of price-elasticities are obtained from previous empirical studies, the main problem here is how to translate them into measures of integration effects.

First, let us define price-elasticity of import demand of country j as the percentage change in imports of country j associated to a one percent change in its import price (inclusive of tariffs):

$$(1) \qquad \eta_j = - \frac{d M_j}{M_j} \cdot \frac{P_j}{d P_j}$$

The "share"-elasticity of import demand for country i's goods in j's market is defined as the percentage change in country i's share in j's import market associated to a one percent change in the import price of country i's goods (inclusive of tariffs) relative to its competitors:

$$(2) \qquad \varepsilon_j = - \frac{d \mu_{ij}}{\mu_{ij}} \cdot \frac{\pi_{ij}}{d \pi_{ij}}$$

where $\pi_{ij} = P_{ij}/P_{hj}$ and h stands for the competitors of country i in country j's market.

a) The most widely used method in ex ante estimations is the so-called "triangles method" that is derived from the standard partial equilibrium model of customs union, studied in Chapter 4. Despite its many simplifications, it has the desirable property of allowing for direct interpretation in terms of economic theory of welfare.

Referring again to Figure II.8, we identify triangles FBI and JAE, respectively, with production gains (W_p) and consumption gains (W_c), which jointly constitute the trade creation effect of a customs union. Graphically, this effect can be measured by the following area:

$$W_p + W_c = \frac{1}{2} \ \overline{Q_2 \ Q_1} \cdot \overline{P_b \ P_t} + \frac{1}{2} \ \overline{C_1 \ C_2} \cdot \overline{P_b \ P_t} =$$

$$= \frac{1}{2} \ \overline{P_b \ P_t} \ (\overline{Q_2 \ Q_1} + \overline{C_1 \ C_2})$$

Since $\overline{P_b \ P_t}$ represents the price difference in the home market between the pre- and the post-union situation (dP) and the expression between brackets represents the volume/increase in imports (dM), we may write, according to (1):

$$W_p + W_c = \frac{1}{2} \cdot dP \cdot \eta \cdot M \cdot \left(\frac{dP}{P} \right) =$$

(3)

$$= \frac{1}{2} \cdot \eta \cdot \left(\frac{dP}{P} \right)^2 \cdot M^*$$

where M^* is the initial import value expressed at the initial domestic price. The problem with this last expression is that price levels are difficult to deal with when a large number of heterogeneous goods are involved. Therefore, it will be assumed that tariffs cover exactly the difference between the domestic and the import prices. If the world price is given by one, then the domestic price in the home economy before the union will be $(1 + t)$ (equal to $\overline{OP_t}$ in Figure II.8) and, after the union, will equal $1 + T$ ($\overline{OP_b}$ in the same Figure). Expression (3) thus becomes:

(4) $\quad W_p + W_c = \frac{1}{2} \cdot \eta \cdot \left(\frac{t - T}{1 + t} \right)^2 \cdot M^*$

The rectangle HIJG in Figure II.8 corresponds to the trade diversion loss W_T which can be measured graphically as:

$$W_T = \overline{Q_1 \ C_1} \cdot \overline{P_c \ P_b}$$

Distance $\overline{Q_1 \ C_1}$ corresponds to the value of initial imports deflated by the pre-union domestic price $(1 + t)$. Consequently, we may write for trade diversion:

(5) $$W_T = M^* \left(\frac{T}{1+t}\right)$$

In expressions (4) and (5), the factors determining the size of integration effects are clearly presented. Welfare gains will increase with the price elasticity of import demand, and decrease with the height at which the CET will be established, while trade diversion will increase with the latter. The effect of the size of initial imports, in terms of value, is irrelevant since it figures in both expressions. The height of the initial tariff imposed by the home economy before the union, when is not considered as an element of the deflating factor, increases the welfare gains, in relative terms.

This method requires perfectly elastic supply curves and is only useful to assess import effects. H. Johnson (1964) suggested a method that can have wider applications than the "triangles method", while maintaining the property of being related to traditional customs union concepts.

Let us define the percent change in imports of j originating in i as $x'_{ij} = \dfrac{d\,X_{ij}}{X_{ij}}$. According to our symbology, we may write: $X_{ij} = \mu_{ij} \cdot M_j$, and therefore,

$$x'_{ij} = \frac{d\,\mu_{ij}}{\mu_{ij}} + \frac{d\,M_j}{M_j}$$

Allowing for definitions (1) and (2), we have then:

(6) $$x'_{ij} = -\epsilon_{ij}\,\frac{d\,\pi_{ij}}{\pi_{ij}} - \eta_j\,\frac{d\,P_j}{P_j}$$

There are two possible cases: in one, country i does not join a customs union, formed by countries j and h ; in the other, country i forms a customs union with j, and therefore h represents the group of non-members. H. Johnson presented his results in terms of the first case, and we shall start by it.

Before the customs union, country j imposes a non-discriminatory tariff at a rate of t_j. The establishment of a CET means that country j's imports from i will be charged a duty at the rate of T, while imports from h will enter duty-free. Assuming that the export prices of both countries i and h are equal to one, and do not change as a result of the creation of the customs union or of any other exogenous factor, we may write:

$$(7) \qquad \frac{d \, P_j}{P_j} = \frac{\mu'_{ij}(1 + T) + (1 - \mu'_{ij}) - (1 + t_j)}{1 + t_j} = \frac{\mu'_{ij} \, T - t_j}{1 + t_j}$$

$$(8) \qquad \frac{d \, \pi_{ij}}{\pi_{ij}} = d \, \pi_{ij} = \frac{P_{ij} + d \, P_{ij}}{P_{hj} + d \, P_{hj}} - \frac{P_{ij}}{P_{hj}} = \frac{(1 + t_j) + (T - t_j)}{(1 + t_j) - t_j} - 1 = T$$

where μ'_{ij} is the share of country i in j's imports after the tariff changes.

Replacing the price changes in (6) by the right-hand side expressions found in (7) and (8) and rearranging, we have finally:

$$(9) \qquad x'_{ij} = \eta_j \, \frac{t_j - T}{1 + t_j} + \eta_j \, \frac{(1 - \mu'_{ij}) \, T}{1 + t_j} - \varepsilon_{ij} \, T$$

Expression (9) enables us to split up the impact of integration upon non-members' exports into three separate effects.

The first term on the R.H.S. of equation (9) indicates the effect of the setting up of a common external tariff. If $t_j > T$, exports from non-members are likely to expand and the first term has positive sign, thus indicating external trade creation. If $t_j < T$, exports from non-members will decrease for this specific reason, which is known as external trade erosion.

The second term indicates that effect on trade resulting specifically from the removal of tariffs internal to the customs union. Because this removal reduces the average price of imports, it expands total imports, independently of their origin. This trade creating effect increases proportionally with the union members' share in country j's market and is expected to take always a positive sign.

The third term indicates external trade diversion, that results from the tariff discrimination against country i's exports in the union market.

In the second case, where country i is supposed to form a customs union with country j, the expressions for the import price and the relative price changes are obtained in a similar way:

$$\frac{d \, P_j}{P_j} = \frac{T(1 - \mu'_{ij}) - t_j}{1 + t_j} \qquad \text{and} \qquad \frac{d \, \pi_{ij}}{\pi_{ij}} = \frac{-T}{1 + T}$$

which leads to:

$$(10) \quad x'_{ij} = \eta_j \frac{t_j}{1 + t_j} - \eta_j \frac{T(1 - \mu'_{ij})}{1 + t_j} + \varepsilon_{ij} \frac{T}{1 + T}$$

In expression (10) the algebraic sum of the first and second terms on the RHS indicates the net trade creating effect of the union upon members' exports, while the third term indicates the share of the export expansion that corresponds to trade diversion in favour of members [20]. These effects are not expressed in terms of welfare changes, but may be easily transformed. The percent increase that is associated to trade creation has to be multiplied by the value of initial imports from i deflated by the initial domestic price in j. Referring to Figure II.8, we shall obtain a value that corresponds to the base of triangles JAE and FBI, which must be multiplied by the tariff difference and divided by two. We have then a trade creation effect given by:

$$(11) \quad -\frac{1}{2} \eta_j \left(\frac{t_j - T}{1 + t_j} \right)^2 (1 - \mu'_{ij}) \quad X_{ij}$$

Identically, the trade diversion effect given by the third term in expression (10) must be multiplied by the deflated value of initial imports from the partner and by the CET rate, T. We obtain as the welfare loss due to trade diversion the following expression:

$$(12) \quad W_T = \left(\frac{T}{1 + t_j} \right) X_{ij} \varepsilon_{ij} \left(\frac{T}{1 + T} \right)$$

b)   The application of this method requires detailed and rigorous estimates of import elasticities. When these are not available by direct calculation, it is still possible to infer at least the value for the price elasticity from estimates of domestic demand and supply elasticities, as in Balassa (1967).

Demand for imports is considered to be residual, i.e. $M \equiv D - S$, where D and S stand for domestic demand and supply (exclusive of exports) respectively. Assuming that both demand and supply are functions of the domestic price only, we may write:

(13) $d M = \dfrac{d D}{d P} \ d P \ - \ \dfrac{d S}{d P} \ d P$

or,

(14) $\dfrac{d M}{M} \cdot \dfrac{P}{d P} = \dfrac{d D}{d P} \cdot \dfrac{P}{M} - \dfrac{d S}{d P} \cdot \dfrac{P}{M}$

Denoting by ϕ and χ, respectively, the price-elasticities of demand and supply, with their conventional definition, we may write, after rearranging:

(15) $\eta = \phi \ \dfrac{D}{M} - \chi \ \dfrac{S}{M}$

$(\eta < 0 \ , \ \phi < 0 \ , \ \chi > 0)$

Therefore, the price-elasticity of import demand will be larger, the smaller the import share in domestic consumption and the ratio of imports to domestic supply [21].

When not even domestic parameters are avaiable, there is no other solution than resorting to the so-called "Dutch convention". L. Krause (1968), among others, assumed fixed values of 0.5 and 2 for the price - elasticity and the share-elasticity of import demand, in all markets , and estimated the effect of EEC and EFTA upon US exports to Western Europe from equation (9).

c)   Besides choosing adequate estimates for the relevant parameters, care must be taken also in evaluating how much assumptions i) and ii) (mentioned in the opening of the present Chapter) fit to the economic reality of the countries concerned.

For a tariff reduction to be reflected on an equivalent reduction in the price of imports, it is necessary that the export supply schedule of the partner country in the union is infinitely elastic, and that its exports occupy a sufficiently large share of the union market [22]. Otherwise , the import surge caused by the tariff reduction will increase the export price, which will therefore absorb some of this reduction. In general, the price-elasticity of export supply depends on the share of exports in domestic protection and on the conditions prevailing in the markets for factors and material inputs. If supplementary factors needed to expand export production are underemployed in activities directed towards the domestic market or simply unemployed, their use

by the export sector will not raise wages. Similarly, if supply of inter-
mediate products is highly elastic, increase in their demand will not af-
fect costs in the production of final goods for exports. When the supply
schedules   of primary factors and important inputs are characterized,
in the relevant regions, by positive slopes, the possibility that export
prices increase in response to tariff concessions in partner countries has to
be accounted for.

Let the increase in country i's export price be given exogenous-
ly and in such an extent as to absorb a percentage $\underline{r}$ of the tariff reduc-
tion. Assuming that export prices in the non-union countries will not be
affected, we have:

$$(16) \quad \frac{d\,P_j}{P_j} = \frac{\mu'_{ij}(1+rt_j) + (1-\mu'_{ij})\,(1+T) - (1+t_j)}{1+t_j} =$$

$$= \frac{T(1-\mu'_{ij}) + t_j\,(r\mu'_{ij} - 1)}{1+t_j}$$

$$(17) \quad \frac{d\,\pi_{ij}}{\pi_{ij}} = \frac{1+rt_j}{1+T} - 1 = \frac{rt_j - T}{1+T}$$

Instead of expression (10), we have now:

$$(18) \quad x'_{ij} = \eta_j\,\frac{t_j(1-\mu'_{ij}r)}{1+t_j} - \eta_j\,\frac{T(1-\mu'_{ij})}{1+t_j} + \varepsilon_{ij}\,\frac{T-rt_j}{1+T}$$

Relative to expression (10), the changes in the first and third
terms of the R.H.S. indicate a reduction in the export expansion effect
due to the increase in export prices. If the members' share in j's mar-
ket is very small, the impact of the price increase will be meaningless
in terms of reduction in trade creation.

A possible method for the evaluation of $\underline{r}$ was developed by   M.
Kreinin (1961) and will be examined in Section 7.2.

d)   The assumption of identical price and tariff-elasticities   has
been disputed both on empirical and theoretical grounds. M. Kreinin
(1967) quoted   an extensive list of empirical studies suggesting that
the response of demand to tariff changes is larger than to equivalent
price changes[23]. Kreinin also attributed the differences to the fact that
nominal instead of effective protection rates are related to imports in
the estimation procedure. He showed (op. cit., p.893) that, if the change

in the nominal tariff on the final good exceeds the change on imported inputs, effective protection will be more affected than nominal. Since it is the former that determines the final allocative effect of the tariff, it follows that the tariff-elasticity (as estimated on the basis of the nominal rate) will be upwards biased in periods when tariff liberalization has been stronger in finished manufactures than in raw ma - terials and semi-manufactures. Balassa (1967 b, p. 186) points out that the estimated price-elasticities may be biased downwards, because the measured changes in import prices reflect also changes in quality of the products. As the duties are known without error, the es- timation of tariff-elasticities is free of this bias, especially if done on a cross-section basis, and if other possible sources of bias (weight- ing of rates over a very wide category of products, for instance) are avoided. On the other hand, it is possible that, independently of the pro- cedures used in their estimation, different elasticities reflect in fact different impacts of price and tariff changes upon imports. One possible reason is the existence of prohibitive tariffs. In such cases, a reduc- tion of the rate of duty encourages import expansion in a very high pro- portion, if it brings the import price (inclusive of tariff) below the domestic marginal cost at the level of domestic demand. Another reason was suggested by Balassa (1967 b, p. 187) - importers tend to regard tariff changes as permanent, while they often consider the changes in world price levels as transitory. Therefore, they will invest much more in foreign purchases, and especially so, if the tariff reduction is associ - ated to regional integration. In this case, encouragement is generally given to the setting up of subsidiaries and business connections abroad, thereby stimulating imports.

When an estimate of the price-elasticity is used in order to measure the impact of tariff changes upon imports, it might therefore be convenient to give it an upper value. This increases the doubt about the final results, already suffering from the obvious consequences of assum- ing constancy of trade parameters over a more or less long period of time, and a more or less wide group of commodities.

e) These consequences are lessened somehow, when the coefficients are estimated for the same markets (commodity- and country-wise) whe- re integration effects are to be studied. This method requires the speci- fic calculation of trade elasticities, and may therefore be very time consuming. Th. Hitiris (1972) estimated the ex ante effects of full EEC

membership and of associated status for Greece through this method. Direct price-elasticities were calculated for a number of commodity groups by means of a quaterly time-series regression model with the general form:

$$(19) \quad M^{(t)} = \beta_0 + \beta_1 \, p^{(t)} + \beta_2 \, y^{(t-3)} + \beta_3 \, Q_1 + \beta_4 \, Q_2 + \beta_5 \, Q_3 + u^{(t)}$$

where $\underline{t}$ refers to quarters covering the period 1954-64 [24/], $\underline{Q}_i$ is a dummy variable standing for the ith quarter, $\underline{p}^{(t)}$ is a deflated import price index, $\underline{M}^{(t)}$ is import volume and $\underline{y}^{(t)}$ an income proxy. Direct price elasticities were also estimated in respect of exports, by means of a similar model where $p^{(t-2)}$ stood for a deflated export price index and $y^{(t)}$ for a measure of importers' income.

The share-elasticity of import demand (that Hitiris called elasticity of substitution) was calculated with respect to both prices and tariffs, according to the following logarithmic model:

$$(20) \quad \log (M_1/M_2) = \log A + \alpha_1 \, \log (P_1/P_2) + \alpha_2 \, \log \left(\frac{1 + T_1}{1 + T_2}\right) + v$$

where $\underline{P}_i$ stands for the import price, $\underline{T}_i$ for the ad valorem tariff and $\underline{i} = 1,2$ are countries of origin of imports. Quarterly data for the period 1963/66 were used in the regressions, which were run for total imports, but considered different specifications [25/].

The elasticities that were obtained from the estimated coefficients were inserted into expressions similar to the first and third terms of equations (9) and (10), in order to predict the impact of full membership on exports and imports (from both members and non-members). In a further step, the actual values of trade after 1962 were compared to the predicted ones, in order to provide ex post estimates of the effects of the Association agreement.

Hitiris' approach deserves some comments. Firstly, price-elasticities were supposed to be the same for both EEC members and non-members. As the value of this parameter depends, among other things, on the commodity composition of trade, one is assuming here that this is the same between those two groups of countries. Secondly, the relatively small size of the Greek export sector justifies the possibility of export prices rising in response to a tariff-induced export demand expansion. This possibility, in turn, leads to two consequences. One is a shrinked increase of exports to members' markets relative to an hypothesis of

infinite price-elasticity of supply. Another is an effect of export trade
diversion,   i.e., reduction of the share in the non-members' import
markets, despite unchanged tariff levels in such markets.These consequences
are reckoned by Hitiris,but the results,as presented,do not include
any   adjustment for rising export prices. Finally, while the independent
effect of tariff changes on imports is recognized to be empirically more
important than the effect of prices, that is only included in the calcula-
tion of the elasticity of substitution. The direct price-elasticities
are obtained from the estimated coefficients in the import and export mo-
dels, without any allowance for the difference relative to tariff-elas-
ticities.

7.2. Estimation of tariff-elasticities in cross-section analysis

When the purpose is to calculate tariff-elasticities directly ,
instead of price-elasticities, it is natural that the observations   will
centre on the trade changes following the tariff reductions. During this
period, trade will be reallocated according to the new rates of duty and
may offer rich material for statistical studies. These will be therefore
dominantly of an ex post nature, and may use either a cross-section or a
time-series model. Two different methods of estimating cross-section tar-
iff - elasticities are surveyed here, which are associated to the names of
M. Kreinin and P. J. Verdoorn.

a)   Kreinin's approach was first developed with the purpose of asses-
sing the effect of the tariff reductions following the GATT negotiations
of 1955 and 1956 upon the prices and volumes of U.S. imports that were sub-
ject to such concessions (M. Kreinin, 1961). In particular he attempted
to measure how much of the tariff cut was reflected in a decrease of the
import price and how much was absorbed by higher export prices.
        Two groups of homogeneous products were compared as to price and
volume changes: the first included products whose rates of duty had been
lowered (reduced group); the second included non-liberalized products which
might be considered as substitutes for the ones included in the first
group and selected so as to achieve identical composition and average val-
ue of imports in the two years under comparison (non-reduced group).
        These two groups were expected to show parallel price and volume

movements in the absence of tariff changes. The effects of the GATT - negotiated tariff concessions can be measured as the difference between the quantity change experienced by the non-reduced and the reduced groups (quantity effect) and the difference between the change in export prices for the same groups (price effect).

There is evidence of a price effect under the form of ration of US terms of trade. Between 1954 and 1956, for instance, it appears that 2/3 of an average tariff reduction of 8.7% in the base import price was absorbed by the exporters (6% increase in the export price) , and only 1/3 was passed on to the US consumer in reduced prices. As the quantity effect was estimated in 42%, the "true" price-volume elasticity would have been close to -15,whereas if tariff-elasticity were calculated in the conventional way, i.e., without allowing for less than infinite export supply elasticities, it would obtain á value of -4.8.

Yet, Kreinin is aware of a serious shortcoming in his method which is responsible for an upward bias of the results. The imports of the non-reduced group are assumed to be unaffected by the tariff concessions,which is incompatible with the substitutability between the components of the two groups. In some cases, the reduced prices of the liberalized commodities will have "held back" rises in export prices of their non-reduced substitutes. In others, a part of the increase in imports of the reduced group will have been obtained at the expense of a reduction in imports of the non-reduced group. Therefore, the tariff-elasticity estimated on the base of this method measures not only the increase in imports of a given commodity due to the reduction of its import price, made possible by the tariff reduction (direct effect), but also the replacement for imports of substitute goods, whose tariffs were not changed (substitution effect). When interpreting the results obtained with this method, in terms of trade balance or welfare effects, the scope of this particular concept of tariff elasticity must be taken into consideration.

Another shortcoming of this method is that its applications is restricted to the cases of partial tariff negotiations,that include only some products in the tariff schedule,or of tariff increases affecting particular products. In the cases of multilateral tariff negotiations made "across-the-board", and of economic integration arrangements in Western Europe, it is not possible to form a control group with commodities that were exempt from tariff reductions. This limits seriously the practical importance of this method, at least in the form that Kreinin suggested.

b)   Verdoorn (1960) pioneered another method of cross-section estimation of tariff-elasticities to measure the trade effects of the formation of the Benelux Union. He selected a set of more or less homogeneous products and estimated the following cross-section regression equation for the Dutch exports to the BLEU (Belgium - Luxembourg Economic Union):

$$(21) \qquad \frac{d\,X_{ij}}{1/2\left[X_{ij}^{(o)} + X_{ij}^{(t)}\right]} = \alpha_1 \frac{d\,T_{ij}}{100 + 1/2\,T_{ij}} +$$

$$+\ \alpha_2 \frac{d\,B_i}{1/2\left[B_i^{(o)} + B_i^{(t)}\right]} + \alpha_3 \log \beta_{ij}^{(o)} + u$$

where the variables are defined in real terms, base year refers to 1938 and final year to 1955. The purpose of expressing rates of growth relative to the   average point between the base and the final years is to avoid giving infinite values to the variables in the case of initial zero exports. It was expected that the increase in exports to an union partner responded negatively to the initial share of the partner in i's exports $(\alpha_3 < 0)$, and positively both to the size of tariff reduction $(\alpha_1 < 0)$ and to the growth rate of total exports $(\alpha_2 > 0)$.

The expected signs and sizes for all three coefficients were confirmed. However, as Verdoorn recognizes, this is a reduced form equation, that   takes only the supply side into account. It is very likely that those products with faster growing demand are also those with faster growing supply. Hence, multicollinearity might be a problem in a regression model where both supply and demand variables coexisted. In such a situation, α_2 would   reflect both influences, i.e.,   absorb the demand effect. On the other hand, the random term will be large when a strong positive demand shift for a product is coupled to a weak supply push.

In Verdoorn's model no explicit account is taken of the substitution effect relative   to the competitors' exports to the BLEU. The supply shift in other exporting countries and the level of the common external tariff are not represented by any variable. Given this limitation, the estimated value of α_1 is of little value for the estimation of integration effects. Instead of presenting his results in terms of the conventional theory of customs unions, Verdoorn preferred to give an idea about how much of the growth in Dutch exports to the BLEU was due to the effect of tariff removal [26/].

This limitation was lifted in a similar work by P. Verdoorn and F.J.M. Meyer zu Schlochtern (1964). They evaluated the growth of total EEC imports, as a function of demand shifts and tariff changes, for a cross-section regression analysis covering a group of homogeneous products .Here, the explicit purpose was to estimate the trade creating effect of the EEC ,lumping together internal and external effects. The tariff variable is the weighted reduction in the duties levied on intra-and extra-area imports. The demand shift is represented by the rates of change in imports of four EFTA countries. No account is taken either of supply side shifts or of price effects.

c) In a more recent study,P.Verdoorn and A.Schwartz (1972) improved on these two earlier works by considering demand and supply factors simultaneously, in a model that inserts some of the gravity properties into a conventional demand equation. The rates of change 1956-69, in constant prices, of all bilateral trade flows between eight countries or groups of countries $\underline{27/}$ were assumed to be explained by the following model:

22) $$x_{ij} = f_{ij} (v_i, y_j, p_{1j}, p_{2j}, \ldots, p_{8j}, q_j, T_j^M, T_j^G, D_{EEC}, D_{EFTA})$$

There are separate blocs of explanatory variables, allowing for gravity, price and integration effects, respectively.

The gravity bloc is composed of variables v_i and y_j ,which represent the rate of change in manufacturing output of the exporting country and the GNP growth rate of the importing country, respectively. It bears close resemblance to the basic gravity model, the difference being that v_i was preferred to y_i as an indicator of supply potential (since the model applies to manufactured trade only) and the distance variable vanishes upon differentiation over time.

The price bloc includes the rates of change in the import prices from every foreign supplier in the sample (p_{ij}) together with the rate of change in the domestic price of the products that compete with imports in country j (q_j). The import price by country of origin was defined as the unit-value index for manufactured exports of that country, multiplied by the average tariff rate in the importing country that applies to the specified origin. The relationship between volume and price changes can be specified by the following equation:

(23) $x_{ij} = \ldots + e_{ij} \, p_i + \sum_{k \neq i,j} e_{kj} \, p_k + e_{jj} \, q_j + \ldots$

where e_{ij} is the direct elasticity of j's imports with respect to the price of imported goods from i, e_{kj} is the cross-elasticity with respect to the prices of goods imported from other sources, and e_{jj} is the cross-elasticity with respect to domestic prices. The main problem to solve here is how to express these partial elasticities in terms of structural parameters that might be estimated for the eight trading partners as a whole - the price-elasticity of demand (ϕ), the price-elasticity of import demand (η) and the elasticity of substitution (ε). The method that was to be selected follows the tradition of considering import markets separately. Their behaviour is described by specific parameters of import demand - η and ε - both assumed to be constant over time and identical for different markets. As we saw in expression (15), the effects of domestic elasticities for supply and demand are captured by any good estimate of η, and there is no need to take them explicitly into consideration.

Under very general conditions, it is possible to approximate the effect of relative price changes upon volume changes in a particular trade flow. This approximation will be closer, the more similar are the initial import prices from all sources and the smaller is the initial import share of the particular supplier.

Through differentiation, Verdoorn and Schwartz managed to specify the partial elasticities in terms of three variables only - import share, price-elasticity of import demand and elasticity of substitution - as in the following expression:

(24) $x_{ij} = \left[\eta + (1 - \mu_{ij})(\varepsilon - \eta) \right] p_{ij} - \sum_{k \neq i} \mu_{kj} (\varepsilon - \eta) p_{kj} - \eta \, q_j$

The direct price-elasticity includes two terms. The first one, η, measure the expansion effect of a decrease in the import price, while the second measures the substitution effect, i.e., the extent to which country i's exports are able to replace (or be replaced by) competing goods due to relative price changes. As to the cross-elasticity and the price-elasticity relative to domestic goods, they only indicate substitution and expansion effects, respectively.

An alternative specification of the price bloc was considered. It followed the suggestion put forward by P. Armington (1969)

of deriving trade parameters from formal demand models under a set of very general assumptions. The concept of a separate import market in each importing country is abandoned under this formulation. Therefore, domestic products are supposed to compete on equal footing with imports from all sources. There is no room for a separate elasticity of import demand, as ϕ regulates demand reactions for home products and for competing imports [28]. Fundamentally because the regression model so derived failed to produce credible elasticity estimates, this alternative was abandoned in favour of the traditional way of calculating the partial elasticities. Such failure was attributed to the complete neglect of the supply side in Armington's model. An infinite elasticity of supply would have to be assumed in order to have the elasticity estimates free of bias introduced by simultaneous shifts in supply and demand schedules (Orcutt, 1950).

The integration bloc is composed by tariff variables that measure the changes in the pre-integration tariff level in country j, with respect to partners' imports. As tariff changes were already included in the definition of p_{ij}, this variable is intended to measure the specific role of the removal of previously prohibitive duties. The price bloc cannot transform zero flows in non-zero flows, however large the price decrease or the absolute values of the partial elasticities. Therefore, the estimated trade creation effect would be less than the "true" value if based only on price-elasticities. Moreover, two dummy variables D_{EFTA} and D_{EEC}, were tested for the significance of a "promotional" effect of integration. The idea behind this formulation is that mutual tariff cuts will contribute to increase information flows between partner countries, encourage the establishment of repair facilities and selling outlets, and reduce the risk and uncertainty always associated with simple price changes, independent of tariff agreements.

Several regression equations were tested, with different arrangements of the three blocs. The preferred variant was:

$$\Delta \log x_{ij} = \varepsilon \left[(1 - \mu_{ij}) \Delta \log p_i - \sum_{k \neq i,j} \mu_{kj} \Delta \log p_k \right] +$$

$$(25) \qquad + \eta \left(\mu_{ij} \Delta \log p_i + \sum_{k \neq i,j} \mu_{kj} \Delta \log p_k - \Delta \log q_j \right) +$$

$$+ \alpha_1 \Delta \log 1/2 (v_i + y_j) + \alpha_2 \log T_{ij} + \alpha_3 D_{EFTA}$$

The estimated coefficients for ε and η, respectively -1.23 and

- 0.14, show the expected sign and relative size, as $|\epsilon| > |\eta|$. However, their absolute values are rather low, despite their being long-term elasticities. The introduction of additional integration variables made the estimated coefficients decline. The presence of multicollinearity between the price and integration variables makes it impossible to allocate integration effects unambiguously between the different factors. The main results show trade creation to be as high as US $ 10 billion for the EEC as a whole (29% of all imports), while trade diversion did not exceed US $ 1.1 billion. While this latter figure is corroborated by other studies, the estimate for trade creation ranks rather high among other estimates (Balassa, op. cit. p. 104).Verdoorn and Schwartz attribute their results to the influence of the "prohibitive tariff" effect,that is usually neglected in other empirical studies. However, Balassa (op. cit., p. 101) remarks that this model employs world trade as implicit normalizer, because the trade flows with the rest of the world, as well as those among EEC and EFTA countries, are included in the analysis. Due to the low shares of developing countries in rapidly growing exports it may well be that the integration variables have captured this structural effect, thereby biasing the estimated α_2 and α_3 upwards.

The practical advantage of separating tariff-cum-price effects from "promotional" and "prohibitive" aspects is small, since the presence of multicollinearity does not allow to infer separate quantified effects. However, the method brings forward the importance of such aspects and tests their relevance, which is important in order to understand the difference in size between price and tariff-elasticities. Another asset of the method is that it yields parameters for each country, which can be used for projection purposes. Disaggregation by product groups is unfortunately not possible due to the lack of appropriate price indices for more detailed categories than total manufactures. This may be an explanation for the relatively low values found for the price - elasticities, as excessive aggregation tends to give more weight to low elasticity goods,characterized by more unstable price behaviour (G. Orcutt, 1950, p. 128).

7.3. Estimation of tariff-elasticities in time-series analysis

According to traditional consumer's demand theory, trade flows are considered to be a function of the level of activity in the importing country and of a number of factors (some exogeneously determined, others

induced by the integration process itself) that influence the relative competitive power of the exporting country.

As far as quantification of integration effects in concerned, the basic difficulty embodied in this method is to conciliate two conflicting requirements:

- One is to specify the function in such a way as to obtain a good overall fit to observed data, which requires not only a relatively long time span, but also the introduction of a large number of explanatory variables. Also, the interaction of price and tariff measures for three areas, and the complexity of the integration process, lead to the multiplication of possible explanatory variables.

- Another is to obtain estimates for the integration-measuring coefficients that have the right sign and significant size. Because of multicollinearity with other variables (especially income) or of insufficient variation over time, it is all too easy to obtain reasonably fitted regression equations with poor values for the price and/or tariff coefficients, which contradict the suggestions from cross-section analysis.

The sucessive authors who have dealt with this question tried different specifications and regression methods, but so far the ideal solution has not been found.

a)   E. Truman (1969, p. 207) considered the following specification of import determinants:

(26) $i S = f (Y, P_i/P, T_I, T_E, C)$ $i = D, P, W$

where DS, PS and WS are respectively the shares of domestic production, of partners' imports and of non-members' imports on apparent consumption; Y is income, P_i/P is a vector of price ratios, T_I is the internal tariff, T_E is the external tariff, and C represents pressure on domestic productive capacity.   The use of shares instead of trade flows is justified on the grounds that it neutralizes the scale and growth effects accompanying the formation of the EEC. Under the residual approach used by Truman (and surveyed in 6.3.b) it was hypothesized that the elasticity of each share with respect to increases in income, business cycles and changes in competitiveness was equal to zero. By regressing $i S$ on all or some of the explanatory variables, the model takes an unconstrained form. Theoretically at least, it would be possible to check on the validity of the above assumpitons and obtain more accurate estimates of the tariff effects.

The following linear version was fitted for each share (iS) for each EEC member over the 11-year period (1954-64):

$$(27) \qquad iS = a_0 + a_1 Y + a_2 (PI) + a_3 (T_E) + a_4 (T_I) + u$$

The regression results were disappointing as far as the price and tariff coefficients were concerned [29]. The income variable dominated most equations, with the result that the overall fit was good, but the size and/or the sign of the other variables denied normal expectations. No price variable in any of the 15 equations (5 countries X 3 shares) revealed simultaneously "correct" sign and significant size. The results for the tariff variables provided only very few and far-between consistent estimates.

Truman (op. cit. p. 224) attributed these poor results to the small number of observations and to multicollinearity. It is quite obvious that income and the two tariff variables must have shown a quite common trend throughout the period under study. As the regression was run over such a short period of time, it is not surprising to have got wrong signs or too big standard deviations for the estimated coefficients of variables other than Y. Among the several possibilities that were open in order to correct the problem of multicollinearity in this case, the author preferred to pool data for the 5 countries in 3 regressions only, one for each share. All explanatory variables were maintained, but country dummy varia - bles (D_i) were added to (27). This procedure "killed" the significance of Y, but improved the performance of the tariff variables. This result is not suprising: for each country individually, income growth was expected to bring about smaller domestic shares; however, across countries, higher absolute incomes were expected to be associated to larger domestic shares, because of scale economies.

b)   J.E.McNulty (1975) replaced shares in domestic consumption by import volume indices, and altered the final specification for regression purposes, so as to provide constant elasticity parameters (over the period 1953/68), as in the model:

$$(28) \qquad \frac{X_{ij}}{P_{ij}} = \alpha_{io} \cdot Y_j^{\alpha_{i1}} \cdot \left(\frac{P_{ij}}{P_j}\right)^{\alpha_{i2}} \cdot \left(\frac{1 + T_I}{1 + T_E}\right)^{\alpha_{i3}} \cdot e^{u_{ij}}$$

where $\underline{i}$ = p, f (p for the group of partner countries, $\underline{f}$ for the group of

non-members) and $\underline{j}$ refers to each EEC importing country. The sign and size of α_{i3} is crucial for the estimation of integration effects. In the partners' equations, $\hat{\alpha}_{p3}$ indicates the extent of gross trade creation. In the non-members' equations, $\hat{\alpha}_{f3}$. If negative, indicates trade diversion , and if positive, external trade creation.

An interesting feature of this study is the fact that it provides disaggregated results, not only by member country, but also by commodity groups. As no data series are available on foreign trade prices at the desired level of disaggregation, the author had to use proxies (wholesale price index). As the series of individual countries are based on different methodologies and classifications, a substantial work of adjustment was needed here.

Despite high coefficients of determination, the estimates obtained were generally desappointing. The Y variable dominated the evolution of imports. whereas the influence of price and tariffs was not so clearly recognized as one would expect. Only in 23 cases out of 70, did the price variable present a value significantly different from zero, and with the "correct" sign. The number of cases where the tariff variable presented expected sign and size was even lower: 14. In a total of 35 possibilities, there were only 5 cases of internal trade creation, as recorded by $\hat{\alpha}_{p3}$. This conclusion was not consistent with the results obtained in other empirical studies. Also surprising was the conclusion that trade diversion was more frequent than external trade creation. More serious still was the conclusion that, in all cases where trade diversion was suggested by the non-members' equation, this failed to show up as gross trade creation in the partners' equation for the same country.

The author attributed the blame for both the high standard errors of $\hat{\alpha}_2$ and $\hat{\alpha}_3$ and the inconsistency between equations to the presence of multicollinearity. This was specially strong between income and tariff variables, as evidenced by high intercorrelation coefficients. Throughout the period 1959-68, steady income growth was accompanied by a regular decline of tariff rates inside the EEC. Therefore, any attempt to estimate the separate effects of income and tariffs on imports seemed doomed to failure $\underline{30/}$.

Although final results in terms of trade creation and trade diversion were not presented,J. McNulty concluded that the formation of the

EEC did not lead to any significant change in the pattern of trade, and that trade diversion would have been more widespread than is generally believed. However, these conclusions need serious qualification, in face of the problems affecting OLS regressions in McNulty's model. The author himself suggests that improvements in the regression methods might be done: by using quarterly data and pooling cross-section with time-series data, for instance. But, apart from multicollinearity, other problems exist.

Firsty, the construction of the price series reflects substantial differences in coverage, method and weighting of the price indices as between different countries. Therefore, the ratio of two wholesale price indices may yield misleading results as a measure of the evolution of relative competitiveness. This comes in addition to the well-known deficiences of wholesale prices as proxies for international prices $\underline{31/}$. The only clear advantage of the former over unit value indices lies in the more widespread availability of disaggregated series .

Secondly, the assumption of perfectly elastic export supply curves for EEC partners · is inadequate for the present case of a large import bloc as the EEC. Several studies have shown that the increase in EEC import demand raised export prices of partners and improved the competitive position of third countries in EEC markets. In a different direction, H. Petith (1977) showed that the gains to the EEC from terms of trade improvements were from two to six times as large as trade creations gains, according to the most credible estimates. Now, if the wholesale price index series fails to pick up this evolution in the terms of trade, the estimate for the tariff coefficient will be downward biased in the members' equations and upward biased in the non-members'. Another consequence of not having in reality a totally elastic foreign supply curve is the likelihood of what Orcutt (1950) called the simultaneous equation bias in the estimation of the price coefficient. If demand is specified only in very approximate terms, thus allowing for large errors, and supply varies sufficiently over the period of estimation, along an upward slope, the result obtained for the estimate of the price-elasticity of demand will be downward biased. As to the tariff-elasticity of demand, it will not be affected by this particular source of bias, as the tariff level is not simultaneously determined by supply and demand, but instead, is determined by policy decisions.

Thirdly, the specific form chosen for the regression equations raises some doubts as to its adequacy to economic theory, and in particular to consumer demand analysis. The price variable is constructed as a

ratio of import over domestic prices in both equations. Therefore, the price-substitution effect between alternative sources of external supply is neglected, which may constitute a cause of mispecification, especially if the possibility of increasing production costs in the relevant range of partners' export supply is considered. The model is also mispecified as a result of treating the tariff variable as a ratio. One is assuming, therefore, that the home country's imports from partners will only increase insofar as the discrimination in their favour and against third countries is reinforced. The model is unable to pick up the effects on imports of multilateral liberalization, or of tariff cuts occurring simultaneously for partners and non-members, as indeed occurred for the EEC countries several times between 1953 and 1968. In summary, from the theoretical point of view, the model is unable to treat in an integrated way the competitiveness changes between domestic production and imports, on one hand, and between imports from different sources, on another. Whereas the price variable neglects the latter, the tariff ratio neglects the former. The general specifications of this relationship made by Verdoorn and Schwartz (1972) and by Armington (1969), seem more satisfactory.

c)   The study of E. Truman and S. Resnick (1975) attemps to solve the problem of multicollinearity and of misspecification, without abandoning the time-series type of analysis. Their purpose was to develop and test an econometric model of bilateral trade flows for ten West European economies [32/], from 1953 to 1968. While the estimation of the effects following the formation of EEC and EFTA is an obvious application of the model, this one allows for several policy simulations in tariffs, including multilateral tariff reductions and the EEC enlargement.

The core of Truman and Resnick's model is a three stage-specification system, with a standard import demand function in the first stage, and a set of interdependent import share functions in the other two stages.

In stage I, total imports were assumed to be a log-linear function of relative prices, real income and pressure of demand. In all stages, prices were defined as the unit value index for manufactured exports, with inclusion of the tariff rate:

$$(29) \qquad \log M_i = \alpha_0 + \alpha_1 \log \frac{P_x(1+T)}{P_i} + \alpha_2 \log Y_i + \alpha_3 \log Q_i + u_i$$

Given the total import demand in country i, Stages IIA, IIB and

III distribute it between increasingly reduced groups of countries,according to a general share model. This model defines the import share of a specified sub-group (large world area, European bloc or single country) on total imports from the group to which it belongs (word,Europe or European bloc,respectively)as a function of the export prices of all subgroups comprising the larger group. Each stage corresponds to a set of interdependent share equations. Therefore, the coefficients in at least one equation in each set are constrained.Once fully estimated, the model provides a range of direct and cross-elasticities for each country and sub-group. This output can be employed to construct alternative patterns of European trade under different tariff policies, by manipulating the rates included in the price definitions. The effects of the formation of the EEC and EFTA were estimated with reference to 1968, and have the advantage of being netted out from the effects of the Dillon Round.

Despite the sophistication of the model, its results can hardly be accepted in the face of previous evidence. Gross trade creation for the EEC was estimated in US $ 1.85 billion and trade diversion in US $ 3.0, hence suggesting a net trade diverting effect of US $ 1.15 billion. B.Balassa (1975, p. 103) discussed these results in the light of the chosen method. A downward bias would have been introduced in the estimates of trade creation by two features of the method. First, the choice of the GNP deflator as the price index of domestic goods (whereas export price indices were used with foreign goods) entailed a smaller estimate for the price-elasticity of import demand 33/. Second, the use of price-cum-tariff-elasticities could not have captured the "promotional" effects or any other structural effects of integration.

It is possible to meet these criticisms by adopting a better index for the price of domestic goods, and a dummy variable for the promotional effects. Besides, the method offers good scope for improvement. The identity of tariff and price effects is not independently imposed, as the model allows for appropriate hypothesis testing. Different income-elasticities of import demand according to source can also be tested within the model. However, the validity of the estimates obtained for the tariff and/or price coefficients depends crucially on the quality of the sample of observations. Ideally, these should be on a quaterly basis and comprise a wide range of tariff variations.

CHAPTER 8

THE EFFECTS OF PORTUGAL'S PARTICIPATION INTO
PREFERENTIAL TRADE ARRANGEMENTS

Since the early sixties, a large number of studies have attempted
to quantify the impact of the creation of EFTA and the EEC upon the
economies of individual countries, whether members or not. Very few how-
ever included Portugal among those countries for which results were pub-
lished . This lack of interest is explained, in first place, by the lack
of comparable statistics. This deficiency was mostly noticed in what con-
cerns foreign trade price indices with a convenient breakdown by commodi-
ty groups, industrial production statistics and the difficult treatment
of tariff rates, given the specific nature of duties. In second place, the
motivations for choosing Portugal as a specific research object were scar-
ce until very recently when it became necessary to study the consequences
of the Second Enlargement of the EEC.

The available array of information regarding the effects of
Portugal's participation into preferential arrangements in the European
area is limited. For the period until 1967, the most detailed study was
done by the EFTA Secretariat (1972). Other studies have in a way or an-
other included Portugal, of which the most relevant was N. Aitken (1973)
34/ . More recently, two different approaches have been followed in what
concerns the evaluation of the impact of future EEC membership upon Portu-
guese economy. One relies on ex ante projections, using data that
stretch until he late 1970s, at the most. The other approach draws inferen-
ces from past experience, as reflected into the ex post assessment of the
Portuguese membership of EFTA and of the Free Trade Agreement established
with the EEC.

8.1. The ex post evaluation of EFTA membership

In the previous Chapter our objective was to review different methods of estimating integration effects, their results being considered for illustrative purposes only. Now, it seems convenient to summarize the main findings about the trade effects of EFTA, around years 1967/68, in Table III.1

TABLE III.1

Trade effects of EFTA - Manufactured products
(billion US dollars)

Author (date)	Method	Reference year	GTC	TD	NTC
EFTA Secret. (1972)	Consumption-share projection	1967	2.20	-0.92	1.29
E. Truman (1975)	Consumption-share projection adjusted for cycles	1968	3.88	-1.09	2.79
Resnick,Truman (1975)	Stage-wise time-series regression	1968	0.21	-0.62	-0.41
N. Aitken (1973)	Dummy variable coefficient from cross-section regression	1967	2.43	-	-
"	Projection from cross-section regression	1967	1.26	-0.20[a]	-
Williamson, Bottrill (1971)	Projection of import shares (normalized)	1967	2.00	-1.10	0.90
Verdoorn,Schwartz (1972)	Analytical model with tariff-elasticities	1969	2.31	-0.54	1.77

a) Trade diversion against EEC exports only

From Table III.1 some conclusions emerge about the size of the (instantaneous, not cumulative) trade effects of EFTA in the years 1967//68. First, trade diversion exhibits always a negative sign. This is expected, as the maintenance of previous tariffs on third countries' exports to EFTA excludes any external trade creating effect. Secondly, the size of the trade diverting effect seems to hover around the one billion mark.

Thirdly, the internal trade creating effect outweighs the trade diverting effect, by a margin of 2 to 3, except in the study by Resnick and Truman (1975). This study suggests very low estimates for trade creation, not only in EFTA, but also in the EEC, the reasons of which were already discussed in 7.3.c). Discarding this result, we may accept that, on aggregate, trade creation will have represented between 2 and 3 times the size of trade diversion for the EFTA countries as a whole.

However, a completly different pattern of results should be expected for Portugal. As we saw in Part I, Portuguese membership of EFTA was always considered to be a particular case. Being a semi-industrialized country, with a weak and not very diversified industrial basis, Portugal could not participate fully in the formation of EFTA without killing prematurely a number of infant industries that had just started their activi-

TABLE III.2

Estimated effects of EEC and EFTA on Portuguese trade

(million US dollars)

Study	Year	EFTA effects			EEC Trade Impedance
		Trade creation	Trade diversion	Export expansion	
EFTA Sect. (1969)	1965	0	37	37	x
EFTA Sect. (1972)	"	10	3	44	- 8
"	1966	13	14	61	- 12
"	1967	18	14	113	- 26
N. Aitken (1973)(*)	"	x	x	107	- 42

(*) This estimate relates to total imports, while the others relate to imports of manufactured goods (exclusive of tomato pulp and concentrates)

ties or were planned to take off in a short time.

Accordingly, a special status (Annex G) was given to Portugal, allowing her import-competing industries to remove tariff protection under a much slower timetable than the general one, while at the same time her export products were given duty-free entry in the EFTA markets.

For these reasons, trade creation proper was not expected to oc-

cur, but for a very reduced list of items,whereas the average preferential
margin of 40%, (of 100% in goods not covered by Annex G), in favour
of EFTA suppliers might entail a significant degree of trade diversion.
Export expansion effects were expected to outweigh total import effects
and hence contribute to an improvement of the manufactured trade
balance.

The picture shown in Table III.2 confirms broadly these predicted
developments. It seems certain that the net effect on the Portugal/
EFTA trade balance, measured as the difference between export expansion
and trade creation, was positive and increasing, from 34/37 million
dollars in 1965 to 95 million dollars in 1967. Having in mind the size of
the Portuguese deficit in merchandise trade, we can say that EFTA member-
ship helped to reduce it by 10-20% during the period 1965/67. The size of
the EFTA effect on Portuguese exports is very substantial and there is
reasonable agreement between the estimates obtained by Aitken and the EFTA
Secretariat. In each of the three years, Portugal ranked first among all
EFTA members in what concerns the size of export effects relative to to-
tal intra-area exports of products receiving EFTA tariff treatment. In
1967, this percentage was 54.6 for Portugal, whereas the area average was
28.5 (EFTA Secretariat, 1972, p. 28). It was also estimated that 37.8% of
the total change in Portuguese manufactured exports throughout the period
from 1959 to 1967 could be attributed to EFTA membership (20% in the EFTA
average).

The import effects are more difficult to evaluate, given the
inexistence of production statistics for many Portuguese industrial bran-
ches. The authors of the 1969 EFTA study worked on the assumption that trade
creation would be nil , given the extended protection afforded by the
Annex G, and made an attempt to assess trade diversion by estimating over-
all industrial production in Portugal and applying projections. Instead,
the authors of the 1972 study made no assumptions about the existence of trade
creating effects and calculated the trade effects only for those pro-
duct groups where production statistics were available (covering somewhat
less than half the annual value of Portuguese industrial output).

The authors of the 1972 study believed that the product groups
excluded from the analysis were likely to have shown mainly trade diverting
effects. Therefore, trade creation is probably much less underestimated
than trade diversion. Anyhow the relative size of the import effects
should not be very high within the EFTA group. The gross trade creating ef-
fect represented only 14.5% of total imports from EFTA in 1967, the lowest

figure of all 8 members (the EFTA average was 28.1%).

The EFTA study of 1972 calculated also the value of merchandise that would be exported by Portugal to the EEC countries had the Common Market not been formed. The authors of the study called this the "trade impedance effect"; in fact, it is the sum of trade diversion and external trade creation. According to their estimates, this effect amounted in 1967 to US $ 26 million, which represented 8.1% of the change in total manufactured exports between 1959 and 1967. The net effect of the European integration process upon the growth of manufactured exports can therefore be estimated in 30% . Aitken suggested a larger figure of US $ 42 million for the negative effect of the EEC formation upon Portuguese exports. The difference is explained by the inclusion in this estimate of agricultural trade, which represents an important proportion of total trade with the EEC.

Table III.3 presents the same effects,disaggregated in nine commodity groups,for 1966. The high concentration is evident. Textiles and clothing absorbed more than 3/4 of the total export expansion effect and virtually all trade creation. The dismantling of tariff barriers in the EFTA countries (usually higher than average in the textile and clothing sectors) opened up expanded market possibilities for the low-cost Portuguese industry, which were seized by domestic firms. New investment in capacity led to a fast increase of output, especially in the clothing sector. Here, the introduction of mechanization allowed large-scale production of certain types of clothing. Investment was mainly of domestic origin in the textile sub-sector, whereas in clothing a great deal of foreign (EFTA) capital was attracted by the low cost of labour. Of the total export effect, the textile sub-sector seized about 2/3, and the rest was taken by clothing. The import effects were concentrated entirely in the textile sub-sector (exclusive of artificial and synthetic fibres). There are elements that allow us to infer that a genuine reallocation of resources took place in this sector according to comparative advantage, probably through an intra-industry specialization process.

According to figures presented by P. Alvares and C.R. Fernandes (1972, Table VII), half of EFTA imports that were placed under accelerated tariff elimination under the 15 percent rule of Annex G (see above Chapter 2) were textile and clothing imports.

Trade diversion seems to be strongly concentrated in passenger cars, with imports from the UK showing substantial growth throughout the period. However, there are indications that such kind of effect should have oc-

TABLE III.3

The effects of EFTA and the EEC on Portugal's trade in manufactured products (1966) - million US dollars

Sectors	EFTA effects			EEC export impedance
	Trade creation	Trade diversion	Export effects	
Leather,footwear,rubber	-	0.5	2.0	+ 0.1
Wood and paper	0.3	1.0	1.8	- 10.8
Textiles and clothing	11.3	-	47.6	+ 0.1
Chemicals and petroleum	0.7	2.6	1.1	- 2.5
Non-metallic minerals	0.1	1.1	1.9	- 0.2
Metals,metal manufactures	-	-	1.1	-
Machinery	n.a.	n.a.	0.9	-
Land transport equipment	-	8.4	-	-
Miscellaneous manufactures	n.a.	n.a.	4.1	-
Total	12.5	13.6	61.3	-12.4

Source: EFTA Secretariat (1972, pp. 98-9)

curred also in imports of iron and steel and machinery, although the lack of data inhibits quantified estimates.

The export expansion effects were rather concentrated also in their distribution by countries. The United Kingdom ($ 21 million) and Sweden ($ 12 million) absorbed more than half the total value of such effects. A closer look at the full breakdown of export effects by EFTA members (EFTA Secretariat, 1972, Table 9 (6)) reveals, however, that the relative intensity of the impact varies inversely to the importance of each country's trade with Portugal.

For the United Kingdom, a country with whom historical trade relations exist, export expansion represented in 1966 approximately 50% of manufactured exports. For the other countries, which were minor partners until the formation of EFTA, that effect rounded 100% in relative terms.

Finally, the EEC impedance effect concerned mainly the exports (to Germany) of wood manufactures.

It may be concluded in general that the membership of EFTA, until 1967 at least, contributed to the development of export-oriented pro-

duction in the sectors of textile and clothing.The other sectors of man-
ufacturing industry did not seize the new market opportunities (apart
from tomato pulp and concentrates in the food industry).   In what con-
cerns the pattern of imports, EFTA membership did not produce any major
effect, although there are reasons to believe in far greater trade diver-
ting effects than those shown on the basis of available statistics.

8.2. The ex ante evaluation of EEC membership

The projected accession of Portugal to the EEC spurred on a num-
ber of research inquiries, some of them involving the use of large resource
pools and the work of several researchers.

A team at the Portuguese Ministry of Industry has carried out a
comprehensive research on the effects of membership on Portugal's indus-
trial structure and development [35]. They measured the average tariff
rates,in nominal and effective terms,   for a large number of industrial
branches (classified according to the input-output nomenclature).They also
estimated   short and long term price-elasticities of import demand from
time-series regression models for the same   branches.   On the basis
of these estimates, and of the relative difference between present
and future tariffs (nil for EEC and EFTA partners, the CET for third
countries),   disaggregated estimates of import effects by industrial
branches and partners were obtained. The formula used in all estimates
was:

$$\Delta\% \ M_i \ = \ \varepsilon_{pi} \ . \ \Delta\% \ r_i$$

where $(\Delta\% \ M)$ stands for percentage change in imports, $(\Delta\% \ r)$ for percent-
age change in the ratio of domestic price to import price (inclusive of tar-
iffs) and ε_p is the price-elasticity of import demand.Assuming that there
are no   variations in prices, but the ones directly caused by tariff ad-
justments, and indicating the old tariff rate by t_i and the new one by
t'_i, we may write:

$$\Delta\% \ r_i \ = \ \frac{t_i \ - \ t'_i}{1 \ + \ t'_i} \ . \ 100$$

Because the 1980 duties   vis-à-vis EEC and EFTA products
were   very low in   average, the impact of full liberalization upon

imports originating in these two areas would be almost insignificant for most sectors. Import increases above 5 percent were estimated for hard fibre textiles, plastic articles and petrol and coal derivatives (in the case of EFTA), footwear and paints and varnish (in the case of the EEC), and glass and other non-metallic minerals (in both cases). More relevant are the results in respect of third countries and Spain, following the adoption of the CET and zero duties respectively. The results are pres - ented in Table III.4, and confirm two previous suppositions:

i) That the effect of adopting the CET will entail external trade creation for the vast majority of product groups, because the Portuguese tariff rates are higher in average than the EEC ones.

ii) That the import surge will be more pronounced relative to Spain than to third countries, because the tariff reduction will be deeper in the former case.

Besides these quite general conclusions, the results do not al- low for much further predictions. This is due to a number of shortcomings

TABLE III.4

Ex ante estimates of import increases - 1980 (%)

Sectors	Third coun-tries	Spain	Sectors	Third coun-tries	Spain
Woollen textiles	34.4	29.7	Resins	0	0
Cotton textiles	0	0	Non-edible oils	0.8	0
Hard fibre textiles	5.7	31.6	Paints & varnish	0	51.6
Clothing	5.9	12.0	Miscell.chemicals	6.1	25.2
Footwear	459.8	374.7	Oil & coal derivates	2.2	5.7
Leather	8.4	14.6	Glass & glassware	7.3	27.9
Wood	0	0	Other non-met-min.	13.3	20.2
Cork	-11.0	0.9	Iron & steel	4.0	13.8
Furniture	0	0	Non-ferr. metals	8.9	38.0
Paper paste	0	0	Metallic products	4.8	9.1
Paper and articles	5.2	25.0	Non-elect.machin.	1.3	3.6
Printing & publishing	1.7	11.1	Electrical machin.	18.4	19.4
Rubber articles	0	0	Shipbuilding	12.1	10.1
Plastic articles	6.0	11.2	Transport Eqpt.	-6.0	7.9
Base chemicals	-6.8	15.4	Miscel.manuftg.	5.0	18.0

Source: J.O. Rendeiro et al. (op. cit., pp. 49-50)

revealed by the methodology. In first place, no account was taken of the role of non-tariff barriers wich, as we saw before in Part I, have been continuously raised since 1975 by Portuguese authorities. Nowadays, it looks certain that their lifting is intimately linked to acession itself, thereby causing a much larger impact on imports than is predicted on the basis of tariff reductions only. This is especially true for imports orig-inating in EFTA and in the EEC. Secondly, the method measures only direct trade creation effects (internal and external),ignoring trade di-version and indirect trade creation (caused by the decline in the aver-age import price,independently of source). - See formulae (9) and (10) of the previous Chapter $\frac{36/}{}$. Had these effects been estimated, the overall impact would have been larger especially in what concerns imports from Spain, EEC and EFTA. Imports from third countries would be higher or low-er than those suggested in Table III.4, depending on whether positive in-direct trade creation would compensate or not for negative trade diversion Thirdly, zero estimates of import increases are misleading, because such branches are heavily protected (except paper paste and resins) and therefore penetration of foreign goods is expected as a result of accession. However elasticity estimates were not statistically different from zero and hence it was assumed for these sectors, $\varepsilon_p = 0$. Now,it is exact-ly because imports are so restricted in sectors like cotton, wood, fur-niture, rubber, paints, etc. (see Part I),that it was impossible to find statistically significant relationships between imports and prices for the period 1971-78. Finally, no inquiry was done as to whether tariff and price-elasticities might be considered as equivalent. Given the different determinants of these two parameters (see Chapter 7), it is likely that in the Portuguese case, a given tariff reduction will have much wider trade impact than an equivalent import price reduction.This is so because of the assumed existence of prohibitive duties in many consumer goods, and of the promotional efforts that will follow a greater inflow of for-eign investment in production and retailing.

In conclusion, Rendeiro's results suggest a smaller impact on Portuguese imports than one is led to believe from available evidence and theory.The distribution of the overall impact by geographical origins and by industrial branches, as suggested by Rendeiro is not warranted,either.

At the "Instituto Nacional de Administração" (INA), a similar research was conducted by H. Berends (1983).However,no single methodology was defined and no aggregate estimates of trade effects were provided. Instead, broad directions for adjustment in production patterns were sug-

gested for each and every manufacturing branch, at a very fine level of disaggregation, on the basis of international comparisons of wages and productivity, tariff rates, and recent trends in trade and production.

At the University of Kiel, J. Donges et al. (1983) evaluated the trade effects for Portugal of full EEC membership by 1979, on the assumption that, despite tariff dismantling had begun in 1973,there was still scope for trade liberalization vis-à-vis the EEC. The method was of the ex ante variety, on the basis of previously computed price-elastici-ties of import demand. For trade creation, the formula was identical to the first term on the RHS of equation (10) in Chapter 7. Trade diversion is assumed to equal trade creation weighted by the ratio of imports from third countries to domestic production, according to a suggestion put forward by R. Baldwin and T.Murray (1977,p.33). This is equivalent to assuming iden-tical substitutability between third and partner countries' products,on one hand, and between domestic and partner countries' products, on the other. However, this assumption is of difficult reconciliation with Portuguese reality. Whereas the major non-EEC suppliers to Portugal are also indus-trialized economies, whose exports are considered to be broad substitutes for EEC products, substitutability between domestic products and imports originating in the EEC is reduced in most sectors.

The price-elasticities were estimated by lagged double-log OLS regressions, using annual data for the period 1960/77.Nominal tariff rates were those in force in 1974, weighted by the industry's share in to-tal manufacturing output.

The results obtained must be interpreted as the change that would occur in Portuguese imports, if full membership were instantaneous-ly introduced in 1979, under the usual assumptions. in this type of me-thod (constancy of parameters, unadjusted exchange rates, identical reac-tions to price and tariff changes, etc.). The results suggest that the expected import effect would be generally low. Aggregate manufactured im-ports from the EEC would increase 6.4% only in response to the total abo-lition of tariffs. The import effect would be concentrated mainly in in-termediate products, where trade diversion in particular would be strong. In the whole industry, however, trade creation would exceed trade diver-sion. This analysis was conducted identically at a more disaggregated level,whose full results are not presented in the mentioned study. It is shown there that the three most important branches in the increase of imports are petroleum products, non-electrical machinery and professional goods, which take up 21.6%, 19.3% and 11.5%, respectively, of the overall import

effects.

TABLE III.5

Estimated import effects in Portugal, resulting from tariff
elimination on EEC imports (US $ million) - 1979

	Trade creation		Trade diversion		Gross Trade creation	
	$	%	$	%	$	%
Consumer goods	11.2	3.4	0.6	0.2	11.8	3.6
Intermediate products	28.3	3.8	33.8	4.6	62.1	8.4
Capital goods	47.6	3.8	26.9	2.2	74.5	6.0
All manufactures	87.1	3.8	61.3	2.7	148.4	6.4

Percentages are calculated in relation to imports from EC-9

Source: J. Donges et al. (1982, Table 29)

As to the export effects, Donges recognizes that Portugal already
enjoys virtually free entry in the EEC market, and that therefore full
membership would not add much in the form of export expansion to the 1979
situation. Assuming that the remaining barriers to Portuguese exports
could be equalled to a 1.5% rate of duty, and that the price-elasticity of
supply of Portuguese manufactured exports was 0.5, on average, the integra-
tion effect would increase Portuguese exports to the EEC by US $ 4 million.
Despite the low import effect, Donges points out the likelihood of
adjustment problems due to the discrepancy in size between export and im-
port effects, and to the effects of tariff liberalization between Portugal
and Spain (also assumed to be unfavourable to the former in terms of pay-
ments deficit).

The usefulness of such predictions is however seriously dimin-
ished by a fundamental misconception that is included in the assumptions.
In 1979, in fact, the average level of duties towards EEC products was
much lower than the 1974 level considered by Donges. J.O. Rendeiro (1981)
evaluated the average nominal rate in respect of EEC imports in 3%, where-
as Donges considered a 10% rate. If only tariff protection were considered,
the actual imports from the EEC in 1979 would already be close to
their "free trade area" level and the estimates of import effects, however
low, would be upward biased. However, as Donges himself remarks, the prevalent

form of protection that was practiced in Portugal (particularly vis-à-vis EFTA and EEC products) is made by means of non-tariff barriers - import surcharge, state subsidies, licensing, quotas, etc.. There are reasons to believe that the protective effects of such barriers have been much stronger than those afforded by conventional tariffs. But, in order to assess the consequences of EEC membership in such a situation, ex post approaches seem to be preferable.

8.3. The ex post assessment of trade liberalization towards the EEC and EFTA

In a situation where new types of import barriers are raised whereas duties are being removed, it is crucial to quantify the extent of the trade adjustment already achieved. If it is negligible, then the free trade agreement would have had practically no effect, and the prospects for full membership will have to be thoroughly reevaluated . If it is substantial, then non-tariff distortions had a marginal impact, and one might say that the major effects of membership will come from CET adoption, the adjustment of domestic production to EEC competition being already achieved for most sectors of industry.

The work of J. Silva Lopes (1982) is the only ex post study of trade effects of the EEC Trade Agreement . Therefore, it would be the main reference against which our own results should be confronted.

In evaluating the effects of the reduction of obstacles on Portuguese imports from the EEC and EFTA, Silva Lopes used essentially the Balassa's methodology, based on the computation of ex post income elasticities of import demand.

In Table III.6 we present the results of Silva Lopes' computations regarding Portuguese imports of manufactured goods. The annual rates of import growth are given in volume terms, the same unit value index of imports having been used as a deflator for the current value of imports from the three areas considered - World, EEC and EFTA.

The results show that in 1959/72, there was apparently no net trade creation as a result of the participation of Portugal in EFTA, as the income-elasticity of import demand for the world as a whole remained unchanged relative to 1954/59. This is not at all surprising, having in sight the conclusions already published by the EFTA Secretariat. In fact, this was the result that the negotiators of the Portuguese participation

TABLE III.6

Growth of Portuguese imports of manufactured goods (*)

	Annual growth rates			Income-elasticities		
	1954/59	1959/72	1972/78	1954/59	1959/72	1972/78
World	7.4	12.2	-2.9	1.9	1.9	-0.8
EEC (Six)	9.7	9.6	0.1	2.5	1.5	0.0
EFTA (with UK and Denmark)	5.2	12.9	-5.1	1.3	2.0	-1.4

(*) Without diamonds.

Source: J. Silva Lopes (1982, p. 73)

into EFTA would have wished in first place, as the existence of Annex G to the Stockholm Convention testifies. It is not altogether clear, as Silva Lopes (op. cit., p. 74) seems to believe, that this apparent "contradiction" might be explained by the methodology itself. It is true that Balassa's method has been criticized mainly on the grounds of the unsuitability of the period 1954/59 as a term for comparison, due to the generalised reduction of quantitative restrictions and exchange controls that took place therein. As we saw in Part I, Portugal, while experiency the same liberalization process during the 1950s, maintained her high tariff barriers as an effective instrument of import control, and suffered no major adjustment problems for that reason. Therefore, the estimated income-elasticity for 1954/59 is not unduly overbiased in the Portuguese case. The annual growth of imports accelerated in fact in the following period from 7.4 to 12.2%, but GDP growth accelerated even faster in relative terms, from 3.9 to 6.4%, which seems to confirm the overall import-substitution orientation during the period.

The 0.7 increase in the elasticity of imports from EFTA must be entirely attributed to trade diversion. The difference between actual imports of manufactures from EFTA in 1972 and hypothetical imports, had the elasticity remained the same in 1959/72 as in 1954/59, amounted to US $ 180 million at 1972 prices, or 2 percent of GDP. This figure ranks much above the EFTA Secretariat's correspondent estimates for 1967 - only US $ 14 million (.35 of GDP). This substantial difference is partly explained by the two further tariff cuts in favour of EFTA products, that were implemented in 1967 and 1970. But differences in methodology must be taken

equally into account. The EFTA study used apparent consumption instead of GDP growth as a normalizer for import growth, and was therefore compelled to leave aside a number of industrial branches for absolute lack of available data.

The comparison of elasticities for imports from the EEC between 1954/59 and 1959/72 show that these were affected most negatively by trade diversion in favour of EFTA. However, as S. Lopes points out, the difference is overbiased, due to the fact that the earlier period witnessed the rapid recovery of competitiveness of Germany, who had been the main supplier of manufactured goods to Portugal $\underline{37/}$.

The most interesting conclusions emerge however, with the comparison of elasticities between 1959/72 and 1972/78. In this latter period there was trade erosion, instead of trade creation, both as regards EFTA and the EEC, in spite of the progressive reduction of the tariff duties levied on imports from both blocs, and especially from the EEC. Silva Lopes attributes this result to two different influences. First, the changes in the structure of Portuguese demand, particularly the reduction in the share of imported capital goods and in other expenditures with a high import content, due to the general fall in the investment ratio. Second, the effects of the import control measures introduced in 1975 and of the sharp depreciation of the Escudo in real terms, during the years 1976/78.

Import diversion effects in favour of the original members of the EEC are also very noticeable in 1972/78, as should be expected. Measured as the difference between gross trade erosion (- 1.5) and net trade erosion (- 2.7), trade diversion was estimated at 1.2, in terms of elasticity differences. Silva Lopes estimated at US $ 175 million the dollar amount of trade diversion in favour of imports from the EEC.

It remains to be asked whether a different method would yield the same conclusions. It is doubtful that methods such as Balassa's, based on projections of past trade trends, might provide good estimates in periods characterized by important changes in economic structure. However, the estimates done by Silva Lopes already suggest that extraneous influences affected the expected outcome of the trade agreement with the EEC in 1972/ /78, which cannot be ignored when discussing the implications of future membership.

The method used by Silva Lopes to estimate the effects of EFTA membership and of the EEC trade agreement on Portuguese exports is a simplified version of the import share method with "third country" normalizer

as applied by J. Williamson and A. Bottrill (1971). Integration effects
were measured by looking at the changes of the shares of imports from
Portugal in the total imports into EFTA, EEC and a "control" group formed
by the United States, Canada, Japan and Spain. The relevant data are
presented in Table III.7.

TABLE III.7

Shares of imports from Portugal in imports from the whole world
(Manufactured products)

	1954	1959	1972	1978
EEC (Six)	0.20	0.20	0.20	0.31
EFTA (with UK, Denmark)	0.31	0.32	0.92	0.57
Control group	0.14	0.14	0.19	0.12

Source: J. Silva Lopes (op. cit., p.79)

The basic assumption behind this measurement method is that, in
the absence of integration, the trend in market shares in the post-inte-
gration period in each of the integrated areas would be the same as the
trend in market shares actually recorded for the "control" group. It is
therefore assumed an "anti-monde" where the market shares of Portugal
in the manufactured imports of EFTA and the EEC would have increased by
about one third in 1959/72, and declined by one third during 1972/78.

In this way, an export expansion effect due to EFTA membership
was calculated at US $180 million for 1972 (manufactured products only),
and an export "impedance" effect due to the formation of the EEC was cal-
culated at US $ 48 million for the same year. Both figures compare favour-
ably with the results reached by the EFTA Secretariat and N. Aitken
(See Table III.2).

The export expansion effect of the free trade agreement with
the EEC was estimated at US $ 350 million in 1978 in current prices. This
increase, which represents almost 2 percent of Portuguese GDP, is however
the joint effect of a variety of economic tendencies, with very different
welfare implications. It might be the result of replacement of EEC coun-
tries' domestic producers by Portuguese exporters (trade creation) or of
replacement of third countries' suppliers to the EEC market (trade diver-
sion). A share of these effects must be attributed to the recovery

of the   competitive positions held by Portuguese exporters before the
creation of the EEC, towards EEC countries' domestic producers and also
towards those benefiting from EEC external tariff preferences (especially
in the Mediterranean area). This is a phenomenon of trade reversion. Per-
haps more importantly some share of the overall export gain in the EEC
market might have been compensated by a correspondent decline in exports
to EFTA or other markets. This phenomenon is called export trade diversion
and is   explained by the possibility of imposing higher export prices
in preference-granting markets in conditions of reduced export supply elas-
ticity.

    The validity of the assumptions behind the use of a "control
group" can be questioned, particularly during the period 1972/78. Given
an elastic export supply, the actual share of Portuguese exports on the
markets of the "control group" is not independent of the tariff prefer-
ences obtained on the EEC market. Hence, part of the (negative) variation
in that share can be attributed to export trade diversion. As to Spain,
this country concluded a preferential trade agreement with the EEC in 1970
that must have reduced somewhat the Portuguese share in its imports. For
these reasons, the decline of the Portuguese share in the control group's
market by one third overstates the hypothetical loss that Portuguese ex-
ports would have suffered in the EEC, had preferences not been granted.

8.4. Summary and Conclusions of Part III

1.   The empirical work stimulated by the interest in assess-
ing the impact of the formation of the EEC and EFTA provides us a vast
range of methodological alternatives in order to select the best way to
measure the trade and welfare effects of Portuguese experience in european
integration. These methodologies can be distinguished between ex ante and
ex post, as to the time period for which the estimation is done, and
between direct survey and statistical analysis, as to the kind of research
tool that is used. When the estimation of the integration impact is based
on the statistical analysis of data on trade and other variables, as often
is the case, one may resort either to residual imputation or to the cons-
truction of an analytical model. The former method does not allow us to
specify the way in which economic integration is supposed to have influ-
enced trade flows, through explicit relationships among variables. Instead,
an "anti-monde" situation is built for a chosen post-integration period,

on the basis of some projection technique, and the difference between
the hypothetical and the actual values of trade is considered to be a
measure of the (residual) integration effect. Analytical models, on the
other hand, incorporate tariff changes, together with other economic varia-
bles, as determinants of cross-section or times-series behaviour of trade.
Structural parameters, such as direct and cross elasticities of prices and
tariffs, may be obtained from regression analysis and directly used in
order to assess integration effects, either ex ant or ex post.

2.   The residual approach provides estimates that can be seriously
questioned on two grounds. In the first place, the "anti-monde" is a pro-
jection of pre-integration trends, which are assumed to hold even in the
absence of integration. When serious disruptions in international relations
or in economic structures occur simultaneously, but independently of the
integration process, the projections are   misleading. In the second place,
the total difference between the "anti-monde" and the actual situation is
attributed to the static effect of tariff changes only. By an appropriate
procedure of "normalization" it is possible to isolate this residual from
the direct effects on trade of such independent variables, as changes in
competitiveness and income growth. However, in the integration process,
these variables cannot be considered totally independent, as they are
supposed to be affected by that process itself through the so-called
dynamic effects (productivity growth, increased investment, etc.). There-
fore, the residual approach is unable to consider these effects separa-
tely, and its estimates of integration effects will be either too short
or too large.
        It is the specific kind of normalization that basically distin-
guishes among the several variants of the residual approach:
        i) Manipulation of trade matrices and vectors;
        ii) analysis of shares in apparent consumption;
        iii) estimation of parameters of import demand, and
        iv) applications of the gravity model.

3.   When the purpose is to obtain a detailed breakdown of trade
effects by commodity groups, and the correspondent data on prices, output
or consumption are not available, there are good reasons to resort to
the simplest approach. It consists in distorting a given matrix or vector
of trade data in accordance with some forecasting technique, in order to
build an "anti-monde". The residual between this and the actual situation

is then attributed to the effects of integration taking place between the
two moments.

  This method is unable to derive independent estimates for trade
creation and trade diversion, is highly dependent on the choice of bench-
mark years and the "normality" of the base period, and generally fails to
isolate integration effects from other influences, not directly attributable
to integration. Most improvements on the basic methodology have remained
restricted to technical aspects of forecasting: from straight linear extra-
polation of import and export shares to non-linear extrapolation of trade
flows, considering exports and imports simultaneously, as in the RAS method
or the "weighted-share-index" method. One of the most popular methods in
this vein was put forward by Williamson and Bottrill, who extrapolated
the trade matrix having into account the export performance in a third
market, that acts as a "control" area, with the purpose to correct for
changes in competitiveness.

4. If customs union theory is to be applied in quantitative studies,
then one has to assess how much of the increase in intra-bloc trade is
due to the replacement of domestic production by imports from partner coun-
tries (trade creation) and how much is due to trade diversion. It is
necessary, therefore, to introduce at some point a variable associated with
the changes undergone in domestic production as a result of integration.
Behind the share method there is the assumption that, in the absence of
integration, the import shares in apparent consumption would have developed
over the post-integration period according to a predictable trend. A rise
in the share of total imports in domestic consumption indicates trade crea-
tion, while a rise in the share of imports from non-partner countries indi-
cates trade diversion.

  While correcting for the influence of income growth on imports,
this method fails to overcome a certain arbitrariness in the choice of
benchmark years and distorting effects of business cycles and exogenous
price changes. Further improvements by Kreinin and Truman were specific-
ally directed towards the identification of the bias associated with
these factors.

  Despite its pretention to verify empirically the propositions
derived from customs union theory, the estimates obtained with the share
method do not correspond to the welfare changes defined theoretically,
except in extreme cases. When the production cost in the partner economy
inside a customs union is comprised between the world price and the

domestic price-cum-tariff levels, it is not possible to evaluate welfare effects of integration without further knowledge about the cost differentials. Results provided by the share method refer to gross values of trade created or diverted, instead of the changes in the consumer's or producer's surplus as defined in theory of welfare.

5.   The method "of elasticities" consists in measuring the effect of economic integration by the deviation between projected and actual income elasticities of import demand. Balassa defined his workable concept of "ex post income elasticity" as the ratio of the average annual rate of change in imports to that of GNP over a given time interval. "Gross" trade creation corresponds to the deviation between income elasticities of   import from the partner economy, whereas "net" trade creation is measured by the deviation between income elasticities of total import demand, and trade diversion is the difference between the two.

        The assumptions on which this method rests are broadly similar to those adopted in the share method, and therefore the validity of its results can be questioned in a similar manner. Balassa's technique was subject to several improvements, suggested by Sellekaerts and by Kreinin, that consist in estimating the hypothetical value of imports under the assumption of non-integration from time-series regression models, incorporating either a dummy variable or a price ratio, in order to measure directly the integration effect.

6.   OLS regression models have been increasingly advised in order to build an "anti-monde" free of the usual distortions, instead of simple projections. The same concern has been present in the suggested use of gravity models to describe the determinants of the geographical allocation of trade. The estimation of trade effects of integration has followed two different procedures under this approach. Waelbroeck and Aitken assumed that the equation describing trade allocation by partners in the base year remains valid throughout the post-integration period, which allows estimates of "gross" trade creation to be derived in the usual residual manner. Aitken has suggested an alternative procedure, that consists in measuring this effect directly from the estimated parameter of a dummy variable describing preferential arrangements between trade partners. This last variant presents the remarkable advantage that the validity of the results is not dependent on the assumption of stability of the structural

gravity parameters over time. In addition, Aitken's method provides us
with useful information beyond the simple estimates of trade effects, such
as the initial year of impact and the cumulative influence of economic
integration.

However, due to deficient nature of the dummy variable, the
estimates obtained under this method are not entirely bias-free. Other
shortcomings of gravity applications are their inability to separate bet-
ween trade diversion and trade creation, the arbitrary influence of the
selection of the geographical area, and the imperfect treatment of the
effects of exogenous price movements.

7.   Analytical models derive trade estimates from known values of
price and/or tariff elasticities of import demand. The simplest procedure
consists in accepting available estimates of price elasticities and cal-
culating the effects of tariff changes as if they were changes in import
prices.

The "triangles method" allows for direct calculation of trade
diversion and trade creation, under rigid assumptions of totally elastic
foreign supply and of tariffs covering exactly the difference between
domestic and foreign prices. Partially elastic foreign supply can be in-
troduced into a slightly modified version, suggested by H. Johnson. The
validity of results depends crucially on the availability of appropriate
estimates for the parameters with the desired time and product coverage.
When this is not the case, separate estimation of price elasticities
become necessary. And then, why not calculate tariff elasticities directly
instead of making extra assumptions on the identity between price and
tariff effects?

8.   Calculation of tariff elasticities may be conducted in a cross-
section analysis of products differentiated according to their tariff
treatment. This method finds its most useful application in the case of
partial or sectoral tariff negotiations.

Cross-section analysis of trading partners finds a much larger
number of applications, including total economic integration. According to
the model put forward by Verdoorn and Schwartz, the rates of change of bi-
lateral trade flows are explained by three blocs of variables: grav-
ity type, price changes and tariff policies. The model is based on two
assumptions. That domestic products compete on an equal footing with imports
from all sources, without specifically national product differentiation.

And that the effects of integration can be separated into three shares. One is attributable to tariff changes per se and can be entirely assimilated to the trade effect of price changes; the second share is the outcome of the removal of "prohibitive" tariffs; and the third consists of promotional effects of integration.

In relation to gravity models, this one presents the advantage of introducing some degree of dynamics, as variables are defined in terms of growth rates. It also achieves a satisfactory specification of partial elasticities of import demand, which enables both ex post and ex ante estimation of integration effects. However, its use is restricted to macroeconomic simulation involving a large number of countries. Moreover, its alleged separation of integration effects is in practice defeated by the presence of multicollinearity.

9.   Time-series specifications of import demand functions, where tariff variables are explicitly included, usually face difficulties raised by the "trended" behaviour of prices, tariffs and activity variables. As a result conclusions have been mostly disappointing, and forced researchers to resort to alternative methods (McNulty, Kreinin, Truman).

An interesting attempt to solve the problems of misspecification and of multicollinearity was suggested by Truman and Resnick, in the form of a set of equations that determine total import demand and allocate it among competing foreign sources, according to prices and tariffs. Despite their results being far from conventional, the model presents scope for improvement, in terms of variable construction and specification of the import share equations. Furthermore, it is directly amenable to use in the context of a single country, and even in a disaggregated level, provided price series are available with the required disaggregation.

10.   A few studies have sought to quantify the trade effects of the past experience of Portugal in european integration and of its future membership of the EEC.

The EFTA Secretariat provided sound evidence on the outstanding export gains that accrued from EFTA membership, and also on the excessive concentration in terms of industrial sectors. As to the effects on imports, there is considerable convergence between the results obtained by the EFTA Secretariat and by S. Lopes - net trade creation in the 1960s would have been very reduced. On the other hand, there is wide discrepancy between

these two studies as to the size of trade diversion until 1972. This may be attributed to the poor statistical basis used by the EFTA Secretariat.

The conclusions that have been published so far in respect of the most recent period, i.e. that covering the effects of the Free Trade Agreement with the EEC, and the forecast of future EEC membership, are quite unsatisfactory, for a number of reasons.

First, only one study (by S. Lopes) has provided estimates of the export expansion effects raised by the 1972 Agreement. The residual nature of the method used (basically, an extrapolation of trade vectors, incorporating a normalization for the exports to a control area) may well be responsible for an overestimation of the export impact.

Second, on the import side, the presence of exogenous influences that affected the expected outcome of the Agreement was detected by Lopes' study. However, the Balassa method fails to quantify and separate the trade effects of preferential agreements from those of non-tariff barriers, and therefore the relationship between these two divergent paths of post-1974 commercial policy in Portugal are still to be clarified.

Third, because the actual impact of non-tariff barriers has been generally neglected in the assessment of the present situation, the forecasts of the future impact of EEC membership so far available may be wholly erroneous. As the removal of such barriers is intimately connected with the decision to join the EEC, one has to add its effects to those arising from tariff reductions vis-à-vis Spain and third countries. Moreover, the future shifts in trade between source areas, as a consequence of EEC membership, together with net trade creation, must be considered in any serious forecasting attempt.

NOTES OF PART III

1/ A large number of surveys has been published. See, for instance, B. Balassa (1967), P. Verdoorn and C. Van Bochove (1972), W.Sellekaerts (1973), W. Corden (1975), D. Mayes (1978) and P. Robson (1980).

2/ Balance of payments effects were studied in an ex ante approach by T. Hitiris (1974) for Greece and by M. Miller (1971) and N. Kaldor (1971) for the United Kingdom. H. Han and L. Liesner (1971) studied the impact of EEC membership upon UK's industrial production structure. And dynamic effects were evaluated however roughly by J. Williamson (1971), L. Krause (1968) and N. Owen (1976).

3/ If these two differences presented the opposite signs, we should have trade erosion and external trade creation, respectively.

4/ Alternatively, a money valued measure may be obtained by estimating the hypothetical value of $X_{ij}^{(t)}$ with $H_{ij} = 1$, and comparing it to its actual value.

5/ Intra-EEC trade would have increased by $548 M, in 1959/60 due to the "Common Market effect". This represented less than 6% of all intra-EEC trade in those years. In contrast to other discrepancies found in comparing the actual with the hypothetical trade matrices (past growth of exports from the USA, Germany and Continental EFTA to non-OECD countries, for instance) the formation of the EEC, as judged by these results, was a minor event in the evolution of the international trade scene.

6/ Mayes' final results are calculated on the basis of the following formulae:

$$_k\tilde{X}_{ij}^{(t)} = {}_kX_{ij}^{(o)} \; s_j \; t_k \; {}_kW_j \quad \text{and} \quad _k\tilde{X}_{ij}^{(t)} = {}_kX_{ij}^{(o)} \; r_i \; s_j \; t_k \; {}_kW_j$$

7/ The difficulty in the choice illustrates one of the problems with this approach, as there is no clear way to avoid an implicit bias whichever is made. 1958 was indeed the year that started the internal tariff removal following the Treaty of Rome. However, this first cut was extended to all GATT suppliers, thereby delaying the discriminatory impact of the EEC. Besides, 1958 was marked by a mild recession. On the other hand, 1960 was the year when adjustments started towards the Common External Tariff, but already some effects, in particular those resulting from "anticipatory moves" from firms, were likely to be present by that time.

8/ This deduction seems supported by the evidence that the 1960 based estimates gave lower values for external trade creation than those for 1958.

9/ This would especially be true for Japan, that during the 1960s is known to have considerably expanded its import share in European markets despite tariff discrimination.

10/ Truman attributed this trend to such factors as a movement towards intra-industry specialization, a pro-trade bias in growth and loss of competitiveness. He dismissed the argument based on larger than one income elasticities of import demand, on the grounds that

his study concerned shares of imports in the apparent consumption of comparable tradable goods.

11/ The choice of this base-period introduces a downward bias in the EEC effect, to the extent that trade flows in 1959 and 1960 were shown to have been already affected by the EEC formation (Aitken, N.,1973).

12/ J. Wemelsfelder (1960) used a similar method in order to estimate the trade effects of Germany's unilateral tariff reduction in 1956 and 1957. GNP was used instead of expenditure as an independent variable.

13/ Evidence of net trade diversion was found for non-tropical food, beverages and tobacco, chemicals and miscellaneous manufactures, while trade creation was obtained for fuels, chemicals, machinery and transport equipment.

14/ This was the case with Japan, centrally planned economies and associated LDCs. The US also had positive competitiveness effects, thereby raising their share in total extra-area EEC imports from 15.1% in 1959 to 19.4%, unlike the UK, who saw its gains due to the EEC formation largely outnumbered by competitiveness losses.

15/ This same method could also be used for evaluating the effect on imports from partner countries. However, the author considered that there was already a large consensus on its trade creating effects.

16/ If the formation of the EEC had no measurable effect upon its extra-area imports, the error sum of squares would be approximately equal in both regressions, and an F-test would reveal that the new variables did not significantly improve the explanatory power of the model.

17/ If the residuals in 1962 were solely attributed to the Common Market effect, net trade creation in the EEC would amount to $ 4.7 billion, of which $ 4 billion corresponded to intra-area and the remaining amount to external trade creation. Waelbroeck himself reckoned this estimate to be grossly overvalued.

18/ Neither for the EEC nor for EFTA was there any evidence of a long-term regionalization of trade. Until 1958, the $\hat{\beta}_7$ estimate is close to zero, with negative values. In 1959, it takes a positive sign and increases significantly in absolute value. Despite the fact that it only becomes significantly different from zero in 1961, 1959 must be considered as the first year in which a clear EEC effect is noticeable (and 1961 for EFTA), according to Aitken's results.

19/ An alternative would be to enlarge the sample to include non-European countries. Then, trade between these and European countries would serve as a "normalizer", thereby leaving room to measure the trade diverting effects of each bloc against the other. Aitken dismissed this possibility on the grounds that his final sample provided better (bias-free) estimates for $\hat{\beta}_6$ and $\hat{\beta}_7$ in the pre-integration years, which means that the validity of his results are conditioned by his exclusion of any other trade than intra-European flows.

20/ In both expressions (9) and (10), the term $(1 - \mu_{ij})$ is included. Two observations are needed here. Firstly, they indicate different things in the two equations: in (9) it is the union share in j's imports,

while in (10) it is the outside world share in j's imports. But it is obvious that the proportional change in exports calculated for a whole bloc $\underline{i}$ is the same for all countries included in that bloc. Secondly, the import shares are calculated ex ante, and serve as constant weights for the computation of the import price index.

21/ In his study of the effects of multilateral tariff liberalization on industrial countries, Balassa used United States figures for coefficients ϕ and χ . He was assuming that consumption-import and production-import ratios were identical within each country and that domestic demand and supply elasticities were internationally identical.

22/ Were the foreign demand curve for a country's exports is infinitely elastic, as in the case of marginal exporters to very large markets, It is possible to earn the full amount of the tariff reduction, as no sensible reduction of the domestic price will come about. This occurs independently of the shape of the export supply schedule.

23/ For instance, M. Kreinin (1961) estimated the tariff ela import demand for the U.S. in -6 for finished manufactures in the period 1955-59, while, for the same country and period, R.J. Ball and K.Marwah found out a price-elasticity of -3.9. T. Hitiris (1972, p. 114) presents further evidence of this phenomenon, by using multivariate regression analysis including tariffs and prices.

24/ Greece became an associated member of the EEC in 1962, but the effects of the association were assumed to be nil during the first two years.

25/ Besides the estimates of separate influence of prices and tariffs, the combined price-tariff effect was calculated as well. An income variable was also included in some equations, to allow for different income-elasticities of import demand according to the source country.

26/ Verdoorn used the value of $\hat{\alpha}_1$ in order do provide a range of estimates for the elasticity of substitution.
In Appendices A and B (op. cit., pp. 319-24) he showed that tariff elasticity is a complex concept. It depends on the size of import shares, and of elasticities of supply import demand and substitution. Assuming identity between the price and the substitution elasticity of supply, it is demonstrated that:

$$\alpha_1 = \frac{\chi \; \epsilon}{\chi - \epsilon} \left[1 - \mu_{ij} \; \frac{\chi}{\chi - \epsilon} \; \frac{\epsilon - \eta}{\epsilon} \right]$$

Once provided estimates for the elasticities of supply (χ) and import demand (η) and known the import share (μ_{ij}) and an estimate for α_1, the value of ϵ is determined.

27/ The original EEC members,plus the UK, Continental EFTA and the rest of the world.

28/ According to this method, the partial elasticities would be computed from the following expression:

$$x_{ij} = z + \left[\phi + (1 - \mu_{ij} \; s_j)(\epsilon - \phi) \right] p_{ij} - \mu_k \; s_j \; (\epsilon - \phi) \; p_{ki} -$$
$$- (1 - s_j)(\epsilon - \phi) \; p_j \; , \quad \text{where} \quad s_j = M_j/C_j$$

This formulation allows for the introduction of a difference in the preference for home-produced goods relative to imported ones, by defining a special variety of elasticity of substitution , only applicable to domestic goods.

29/ Variable PI was defined as a ratio of export unit value indexes for manufactured products. TE and T₁ were tariff ratios that used the 1958 tariff level as a base.

30/ In order to check the results of this method, McNulty tried a different specification. Trade shares (intra-EEC imports as a percentage of total EEC imports) were assumed to be a function of the two relative price variables, of the tariff ratio and of income. Again, multi-collinearity showed up between the two latter variables, with the result that acceptable estimates for one of them were obtained only when the other was dropped (at the sake of useful imformation being lost).

31/ Wholesale price series contain many goods that do not enter inter-national trade, while many goods that are traded are excluded. And, since domestic markets often differ from foreign markets, it is not always true that the evolution of the domestic wholesale prices reflects the evolution of external competitiveness.

32/ All the EEC and EFTA members, excluding Switzerland and Portugal, due to lack of comparable data.

33/ This is due to the fact that the GNP deflator includes traded as well as non-traded goods. These tend to show smaller variations in price than the former. Besides, substitutability between traded and non-traded goods is lower than among traded goods only.

34/ But see also L. Krause (1968) and M. Kreinin (1969).

35/ J.O.Rendeiro et al. (1981).

36/ Formulae are not strictly comparable, though, because the concept of price-elasticity used by Rendeiro, ε_p, is a compromise between Johnson's "direct" and "share" elasticities.

37/ If these results were taken rigorously, trade diversion in respect of EEC would have amounted to about US $ 680 million, which implies that some US $ 500 million would have to be attributed to a very doubtful external trade creation in favour of third countries' exports.

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PART IV

THE PORTUGUESE EXPERIENCE OF EUROPEAN INTEGRATION

- AN EX POST ASSESSMENT OF THE EFFECTS OF EFTA AND

EEC TARIFF PREFERENCES AND A SIMULATION OF FUTURE

IMPACT OF EEC MEMBERSHIP

John also laughed, but for another reason — laughed for pure joy. 'O brave new world', he repeated.'O brave new world that has such people in it. Let's start at once'.

'You have a most peculiar way of talking sometimes', said Bernard, staring at the young man in perplexed astonishment.'And, anyhow, hadn't you better wait till you actually see the new world?'

Aldous Huxley

CHAPTER 9

A CROSS-SECTION REGRESSION ANALYSIS
OF TRADE EFFECTS OF PREFERENTIAL
POLICY - THE EEC AGREEMENT AND
THE EFTA MEMBERSHIP

As we saw in Part III, the building of a comprehensive model includ-
ing all the variables that influence trade performance is out of the
question. Simplifying assumptions have always to be made about certain
tendencies, which either cannot be directly measured, or, if included
explicity in the model, would make it of unmanageable proportions. There
is no ideal method for estimating trade effects in every circumstance.
Each particular case has its own requirements, which have to be considered,
together with data availability, in selecting the most efficient and
viable method. Whenever possible, it is convenient also to check the
validity of the final results, by confronting them with alternative
assumptions and with the expectations produced by economic analysis.

What are the requirements for the estimation of the effects of the
Trade Agreement between Portugal and the EEC?

In the first place, our method should be able to dispense with
the assumption of stable trade parameters, namely elasticities, covering
both the pre-integration and the post-integration periods. As we saw
earlier in Part I, the implementation of the Trade Agreement was carried
out through a period marked by deep transformations both in the domestic
and in the international scenes. Consequently, the projection of pre-
1973 trends would yield estimates that, most likely, would give a very
distorted image of the alternative "anti-monde" situation.

The second requirement is that both export and import effects
must be estimated. When the purpose is to determine the welfare impact
of an integration arrangement upon the rest of the world and the integrat-
ing area, only import effects need to be considered. But, unless we
assumed that the factors released by the import-competing sector would
be fully and immediately absorbed by the exporting sector, we have to
admit, in the case of a single country, that the gains obtained through
export expansion should be considered independently of the net import

effects[1/], and therefore should be given separate quantitative treatment.

The third requirement is that a full distinction between trade creation and trade diversion effects must be provided. In view of the doubts raised by previous work on the trade effects of the Agreement between Portugal and the EEC, it is convenient to clarify whether they have produced a globally positive or negative impact on welfare.

It is impossible to find an estimating method that satisfies all these requirements simultaneously. The Aitken's method, based on multi-annual regression of a gravity model, shows good capacity for isolating tariff effects, is not dependent upon the assumption of a stable structure and has good predictive power. However, it must be adapted to use in our present case, of estimating export and import effects for a single country. On the other hand, the Aitken's method fails to provide a satisfactory distinction between trade creation and trade diversion.

This deficiency can be partly overcome by the use of a complementary method, inspired in the time-series regression model, which provides separate estimates of trade diverting effects and, besides, allows for checking on cross-section results.

In the present Chapter, the properties of the gravity approach to the estimation of trade effects are discussed in Section 9.1 with the purpose to provide a final version of the cross-section regression model. Its results are presented and discussed in Sections 9.3 and 9.4. The complementary method is described and tested in Chapter 10.

9.1 The gravity approach

As we saw in Part III, the Aitken's method is a variant of the gravity approach that consists in taking a set of explanatory variables for a bilateral trade flow, including dummy variables that represent the state of preferential relations between the two partners, and obtain estimates for the coefficients of these dummies through OLS multiannual cross-section regression. Once it is demonstrated that the set of explanatory variables describes adequately the trade performance in each year, those estimates will measure the increase in bilateral trade that is exclusively due to preferences, relative to the hypothetical situation where the partners would trade under the same conditions as countries without any preferential relation among themselves. The network of trade

among mutually "non-preferred" partners constitutes therefore the "norma-
lizer" in this method. This procedure eliminates the possibility of a
separate calculation of trade creating and trade diverting effects, as
it only provides means to calculate how much does trade between mutually
preferred partners increase relative to the rest of the world, and not
how much does the total trade of such partners increase as a result of
the preferential agreement. It provides therefore a measure of "gross
trade creation".

There is no satisfactory way to overcome this limitation within
the methodology itself. It is possible to create another dummy variable
for trade diversion against a specific group of countries. However, this
solution complicates the interpretation of the dummies' coefficients[2/]
and provides a limited measure of trade diversion.

Let us consider then the most general form of the gravity model.
Given a set of $\underline{m}$ countries, that are assumed to trade among themselves,
the model hypothesizes that the size of their mutual trade flows X_{ij}
$(i, j = 1, ..., m; i \neq j)$ will be directly proportional to the sizes
of the foreign trade sectors of the trading partners F_i and F_j, and
inversely proportional to a function $\underline{h}$ of resistance factors R_{ij}:

$$
(1) \qquad X_{ij} = \lambda \frac{F_i^{\alpha} \cdot F_j^{\beta}}{h(R_{ij})}
$$

where α, $\beta > 0$ and λ is a scale factor.

In order to adapt this general model version to our purposes, it
is necessary to consider two transformations.

The first transformation is related to the fact that we are
interested only in obtaining results for a single country. Therefore,
the size of the foreign trade sector of this country ceases to be
considered as a variable in the model. In terms of its use in the estima-
tion of trade effects, this transformation amounts to a considerable
shrinkage of the "normalizer" to trade flows pertaining to that country,
instead of a world network, which may introduce far greater inter-annual
fluctuations. On the other hand, the estimated coefficients will be more
adequate to describe the specific determinants of the geographical break-
down of this single country's trade.

The second transformation consists in decomposing our model into two different equations. One evaluates the geographical distribution of imports, and the other the geographical distribution of exports. We may write, then:

$$(2) \qquad A_i = \lambda' . \frac{F_i^{\alpha}}{h'(R_i)} \qquad B_j = \lambda'' . \frac{F_j^{\beta}}{h''(R_j)}$$

where A_i and B_j stand for Portuguese imports from country i, and Portuguese exports to country j, respectively. h' and h'' are two different functions of the resistance factors in trade between Portugal and country i, on one hand, and country j, on the other.

This transformation is justified primarily by our purpose of evaluating export and import effects separately. We are assuming also that the resistance and the attraction variables may differ in specification and quantitative importance according to whether they influence exports or imports. Geographical distance apart, the resistance factors are not likely to be indifferent as to the direction of a particular trade flow -inward or outward- and tend to be assymetrical. Due to the different patterns of comparative advantages in manufactured products, it is also likely that the size of the partner's foreign trade sector, as far as this group of products is concerned, varies according. to whether it is considered an importer or an exporter.

It is widely recognized [3/] that gravity models in general are un-able to eliminate the disturbances introduced by short-term variations in prices and exchange rates. If the inflation rate of country i is higher than that of its more direct trading partners and no adjustment in the exchange rate occurs, exports will decrease and imports increase, which should be reflected in estimated parameters. However, gravity models usually exclude price variables. These are considered to be endogenous and merely adjust to equate supply and demand instantaneously. If this adjustment is not rapid enough or is hampered by non-market intervention, the actual size of flows will not reflect adequately its "true" equilibrium level. The possibility of introducing an additional variable to account for temporary losses or gains in competitiveness is negated by the cross-section nature of the sample. Since each importing country is confronted with the same set of prices, these cannot provide any relevant explanation.

Furthermore, since prices are usually given in index form, all that is
known is the relationship of current to base prices and not the actual
prices themselves.

In our version of the model, the joint determination of trade by
supply and demand vanishes upon elimination of third countries' mutual
trade. It is therefore very likely that annual estimates of the
coefficients will show especially high sensitivity to relative price
variations. This point must be considered when selecting the time
periods so that price fluctuations might be "made flatter". Mention must
be made of the fact that exchange rate variations in Portugal are not
expected to affect results as their repercussions will in principle be
identical for every partner considered.

9.1.1. The attraction variables

The evaluation of the size of the foreign trade sector can be done,
either in a potential or in an actual sense. In the former sense, the
F variables in (2) or (1) are represented by proxies that are related
to the domestic production and consumption structures, and not by the
trade variables themselves. In the latter sense, one assumes that the
actual value of total exports or of total imports (or of both) of a
specified country provides an adequate measure of its importance in
world trade.

The potential approach is favoured by R. Stern and E. Leamer (1971,
p.165) on the basis of two reasons. Firstly the use of variables depicting
the resource endowment, the utility structure or the total production of
a country clarifies the relationship between trade performance and
theoretical explanations in terms of the standard theory of international
trade. Secondly, the use of total exports or imports as independent variables
for particular flows of trade weakens the analytical power of the model,
especially if its objective is to evaluate the trade relations among the
world's major economies. In this case, one cannot avoid that the value
of a particular flow of trade between two countries does not bear a
significant influence upon the independent variables themselves.

However, given our present purpose, these advantages of the potential
representations of the foreign trade size have to be discounted. Firstly,
because if the theoretical superiority of "more fundamental" variables

is required for studies whose objective is to evaluate the determinants
of the world's trade structure, it is not so relevant when the purpose
is to measure the impact of tariff preferences. Secondly, because Portugal
is a very minor trade partner and can only influence the partners' total
trade values in exceptional circumstances.

Furthermore, the use of actual representations of foreign trade,
instead of proxies, avoids the unrealistic assumptions of a balanced
manufactured trade and a balanced factor endowment and preference
structure as between domestic and foreign goods. These are particular in-
convenient when one abandons the aggregate level of quantification.

As we shall use actual values of trade in the model, its general
form will read:

$$(3) \qquad A_i = \lambda' \ \frac{X_i^{\alpha}}{h'(R_i)} \qquad\qquad B_j = \lambda'' \ \frac{M_j^{\beta}}{h''(R_j)}$$

where X_i and M_j are total exports of country i (in reference to the sector
in question) and total imports of country j.

9.1.2. The bloc of "resistance" variables

Now it is necessary to specify functions h' and h''. In previous
applications of the same type of model, a variety of factors have been
considered to act as obstacles or stimuli to trade: geographical distance,
tariffs, inclusion in broad areas of political and economic influence,
cultural and social links, similar commodity composition of trade, etc.

a) Distance

The explicit consideration of some measure of geographical distance
is distinctive of gravity models. When the variable that one tries to
explain is international trade flows, distance accounts for two separate
factors. One is transport costs, including freight and insurance, lost
time due to shipments, larger than usual inventories, etc. The other
factor is psychological and is related to the inferior information on
markets and the higher element of risk involved. Both the physical and
the psychological factors associated to distance are expected to affect

trade flows negatively and proportionally.

In our case, distance (D) was defined as the shortest navigable distance between Lisbon and the economic centre of the country concerned. In the case of Continental Western European countries, the road distance was considered, if shorter than the correspondent sea distance.

b) Tariffs

We shall follow the Tinbergen-Linnemann-Aitken tradition of using dummy variables in order to quantify the influence of tariff preferences on trade flows. It must be pointed out, however, that dummy variables are only a replacement for a more accurate measure of that influence, as afforded by an overall quantitative indicator of trade restrictions. However, there are overwhelming statistical and methodological problems associated with the direct measurement of artifical trade barriers, some of which were listed by H. Linnemann (op.cit., p.37): weighting of import duties, effective versus nominal rates, impact of tariffs as compared to impact of quotas and exchange restrictions, etc.

In using this method, we assume two things. First, that trade between Portugal and any of the members of a specified group is subject to trade-stimulating forces of equal strength for the entire group. Second, that the trade between Portugal and any other country not belonging to the group is subject to an average trade-reducing effect which is the same for them all (except for the occurrence of random deviations). The first assumption is rarely met in the real world. The trade increment induced by a preferential area will be relatively greater for countries with whom ancient political and business contacts already existed. These will enhance the "promotional" effects of economic integration associated with tariff cuts[4/]. The second assumption does not seem very realistic either, especially when Portugal is viewed as the exporting country. On the other hand, as an importer, Portugal is expected to give more or less similar treatment to all non-preferred partners. Most are GATT members, and those who are not, have negotiated trade agreements embodying the MFN principle.

If the preferential "dummies" do not exhaust the role of tariffs upon trade, that means there will be a high correlation between them and the excluded variable. A bias will then show up in the results in the form of a reasonably significant trade preference coefficient in those regressions that are run for the pre-integration years (N. Aitken, 1973, p.883). As the countries with whom Portugal has established preferential

relations are among those with more liberal exchange and trade regimes, this possibility is very real and must be checked for.

Three dummy variables were used in order to quantify the influence of tariff preferences on trade, respectively vis-à-vis the present EFTA members (P_{efta}), the original EEC members plus Ireland (P_{eec}) and the EFTA countries that joined the EEC in 1973 -the United Kingdom and Denmark (P_{uk}).

The testing of hypothesis about the relationships between these three coefficients was performed by means of the usual F-statistic. It is expected that, in the years before 1973, the coefficients of P_{uk} and P_{efta} do not show any statistically significant divergence between themselves, and both are different from the coefficient of P_{eec}. This gap should progressively close after the first enlargement.

c) Inclusion in larger market areas

We have been considering that the amount of trade between two countries depends only upon factors concerning these same countries. However the influence of third countries makes itself feel in bilateral trade. For instance, if country $\underline{a}$ belongs to a larger market area $\underline{A}$, defined either by geographical reasons or by integration schemes, its trade with country $\underline{b}$, assumed to belong to a different area $\underline{B}$, will be expected to be smaller than if both $\underline{a}$ and $\underline{b}$ belonged to the same area. Such influence is not represented by any of the variables so far examined.

As a variable indicating the degree of integration of a partner into a particular market area, we selected the rate of geographical concentration of trade, that can take two forms. CX_i is the share of total exports of country i that is directed towards the main client in a specified year. CM_i is the symmetrical rate for import concentration. Both variables are expected to yield negative coefficients.

d) Similarity of production and trade structures

The final element to be considered in resistance functions h' and h'' materializes the following hypothesis: the intensity of trade between any two countries will be stronger the more complementary are their production structures. The validity of this hypothesis cannot be asserted in general. It is well known that, despite very similar structures, industrialized countries trade intensively among themselves. Previous studies suggest, nevertheless, that Portugal's specialization is still

dominantly of the inter-industry type [5/]: it seems worthy to test whether Portuguese trade is specially strong with those countries that reveal an opposite pattern of comparative advantages.

There are two ways to handle this problem. One consists in including variables that indicate dissimilarities in resource base, along the lines of the Hecksher-Ohlin theory of trade.

For our purpose it seems appropriate to use variables reflecting different capital and labour endowments [6/]. H. Bowen (1983) computed capital-labour ratios for a large number of countries in year 1975. His figures were used to build variable K, to be considered in our regression work.

The second method consists in finding a variable that measures the goodness of fit of one country's exports to a second country's imports. The assumption here is that trade between countries which have a rather concentrated pattern of trade will be the larger, the better the commodity composition of exports of one fits to the composition of imports of the other, and vice-versa.

H. Linnemann (op.cit., p.140) measured commodity-composition of trade as the cosine of the angle between the export and the import vectors of the trading partners. For the purpose of computation, this equals the scalar product of the two vectors divided by the product of their absolute values, as in the so-called "trade conformity index":

(4)
$$S_{ij} = \frac{\sum_{k} (x_{ik} \, m_{jk})}{\sqrt{\sum_{k} x_{ik}^2 \cdot \sum_{k} m_{jk}^2}}$$

where x_{ik} and m_{jk} stand for the share of commodity k in country i's total exports and in country j's total imports, respectively. S_{ij} assumes values ranging from zero (no fit at all between trade structures) to one (full coincidence). For our model, two indices have to be computed. One, denoted by SX, measures the similarity between Portugal's import structure and the supplying countries' export structures, and will be included into the import-side equation. The other, SM, measures the inverse relationship.

Other arguments were considered at some point in order to integrate the resistance functions h' and h'', but they were not included in the final specification.

Foreign direct investment is expected to influence the geographical trade pattern. However, this influence is difficult to quantify in a cross-section model, due to theoretical and statistical reasons. F.D.I. will usually play an expanding role on imports from a specific investing country, because the inputs used by the local firm will very often originate in the mother-firm itself, especially if these two firms are vertically integrated. On the other hand, F.D.I. can be seen as an alternative to imports, particularly when the local market is highly protected. Hence a positive sign of the coefficient measuring the relationship between imports and a stock measure of F.D.I. by origin cannot be expected on a priori grounds. The influence of F.D.I. on exports is equally difficult to perceive. When the primary objective of investment is to exploit local comparative advantages, exports may be oriented either towards the investing country itself for the sake of further product elaboration, or towards other markets, especially if the processing stage in the host country consists of final assembling operations.

Moreover, a strong multicollinearity is expected if F.D.I. is included as an argument, since the same variables that influence trade are likely to play a similar role in orienting capital flows in a gravity-type of model. That is particularly the case with distance, size of foreign trade, preferences and factor endowments.

Therefore, it was not surprising to find in our preliminary regression runs that a variable representing F.D.I. stocks in Portugal by country of origin could not be shown to influence significantly the direction of trade in any of the time periods under observation.

Social, cultural and political factors have been considered also in gravity studies of international trade relations. In an early version of this same model (A. Silva, 1985), dealing with an unbounded statistical sample, such factors as the emigration distribution pattern and the state of political relationships were explicitly taken into account. In the present model, however, where only trade with OECD countries is considered, we should not expect political relations with Portugal to be so diversified as to affect trade flows significantly.

On the other hand, within the OECD area outward migration has been directed with particular intensity towards a relatively small number of countries. Therefore, it was worthy to test whether the standard model could also be considered valid for such countries. On the basis of the

usual F-statistic, it was possible to accept the latter hypothesis with a margin of error of 5 percent.

9.2 Stages of econometric research

Let us summarize first all the variables to be included into the two regressions - for exports and for imports.

The dependent variables are:

A and B, standing for Portuguese imports and exports from/to a single trade partner, respectively.

The independent variables are:

X and M, standing for the manufactured exports and imports of each single trade partner, respectively.

D, standing for geographical distance.

P_{efta} is the EFTA preference dummy.

P_{eec} is the EEC preference dummy.

P_{uk} is the "U.K. plus Denmark" preference dummy.

K is the capital-labour ratio of each single partner.

CX and CM, standing for the geographical concentration of trade partners' total exports and imports, respectively.

SX and SM, standing for the similarity between partners' exports and Portuguese imports, and between partners' imports and Portuguese exports, respectively.

The econometric research was carried out in four stages. We started by defining precisely our coverage in terms of countries, time periods and product groups. In performing this task, we took into account the results obtained previously with a similar model [2]. Secondly, we arrived at a final specification of each regression equation, having tested several alternative equations and made some attempts to evaluate multicollinearity. Next, the presence of heteroscedasticity was investigated and, whenever detected, attempts were made in order to specify the model of the structure generating the heteroscedastic disturbances. Then the regression equations were re-run by the method of Weighted Least Squares. Finally, tests on the relationship between parameters were performed on the basis of the residual sum of squares as obtained from the original OLS regression.

Details about each of these stages are now described, previously to the discussion of the final results in Sections 9.3 and 9.4.

9.2.1. Coverage by countries, time periods and products groups

The questions raised by the choice of the sample of partner countries were among those of most difficult solution. The alternative lied basically between adopting as "normalizer" either a limited group of countries, sharing some basic economic characteristics with the EEC and EFTA members (for instance, the other OECD members), or the world as a whole.

Table IV.1

Geographical structure of Portuguese manufactured trade(%)

Areas	Imports		Exports	
	1972	1980	1972	1980
EEC and EFTA	78.3	76.4	61.9	75.1
Other OECD countries	19.3	20.8	15.1	9.3
Non-OECD countries	2.4	2.8	23.0	15.6

In terms of sheer size, the question seems relevant only in what regards the export model, due to the negligible importance of non-OECD countries as suppliers to Portugal of manufactured products. (See Table IV.1). However, the choice between the two alternatives will influence the results in both models, for qualitative rather than quantitative reasons. Most of the non-OECD countries that we might include in the "normalizing" group are characterized by economic structures and policies that differ strongly from those prevailing in the OECD area. In COMECON countries, foreign trade is subject to planning requirements and complex clearing procedures; most countries in the Third World suffer foreign exchange shortages that compel them to the use of non-tariff import restrictions and a good share of governmental discretionary intervention. Moreover, the state of commercial relations between Portugal and some of those countries were subject for years to exogenous political factors. A political embargo imposed by several Third World Governments was lifted only after 1975, and this allowed for a very fast growth of mutual trade. The period 1975-80 was marked by the shift of these trade flows to their equilibrium size, as determined by gravity economic conside- rations alone. On the other hand, the economic relationships between Portugal and the former African Overseas Territories were transformed,

first by the end of the preferential colonial regime, and then by the economic and political crisis prevailing in some of those countries.

Both theoretical and statistical reasons led us to adopt in the end the "bounded" version of the country coverage sample.

In the first place, what we are willing to measure primarily is the shift in trade caused by tariff preferences alone, when the preferred partners are assumed to behave just like the "normalizing" group, under the "anti-monde" situation. Since a good share of the variations occurring in trade with non-OECD countries are attributable to political factors, specific to the bilateral relations involved, that assumption would no longer be correct. We would be evaluating the bilateral trade with EEC and EFTA in relation to trade with the world at large, but not specifically the impact of the respective tariff preferences.

In the second place, the determinants of trade with a large number of countries characterized by different economic structures and different types of historical and political affinity, require a very precise specification. This involves not only social and political factors but also a set of unknown economic variables. The inclusion of qualitative information has to be done by means of "dummy" variables, which is likely to aggravate the misspecification bias already present due to the way tariff preferences were measured. The task of detailing all the economic considerations that might influence trade with often small and far distant countries (transshipment, location shifts of multinational subsidiaries, local economic policies, etc.) proves very difficult. While both sources of difficulty are also present when specifying a model for the OECD area, the task is made more accessible due to the broadly similar political background, and the interrelated economic policies.

Finally, double logarithmic OLS regression is not the most appropriate method to use in the face of a dependent variable whose observations, when very close to zero, are "censored" at the origin. As a result of a deficient functional form, biased and inconsistent estimates are expected, and Maximum-likelihood estimation models are strongly advised [8]. By reducing observations to more permanent and stronger flows, the probability of getting zero observations is pratically nil.

One of the model's most evident weakness lies in its inability to isolate short-term variations in prices and exchange rates. Linnemann (1966) averaged data over a three-year period to reflect the assumption

that the trade balance has to return to equilibrium after an initial disturbance in competitiveness. Our earlier results, obtained with "unbounded" samples and multi-annual regressions suggest that the world recessions generated by the successive oil shocks of 1973 and 1979 were followed by a downward trend in preference effects over the next three years. Therefore, we adopted Linnemann's suggestion and averaged trade observations over the following periods: 1971/73, 1974/76, 1977/79 and 1980/82. Our aim being to pick up the main trends of the estimated coefficients, especially those describing tariff preferences, it is expected that the data averaging procedure will eliminate most of the short-term price disturbances. For economy reasons in data collection, the middle periods for the observations on disaggregated product groups were suppressed.

An eventually more realistic attitude would consist in computing some measure of exchange rate distortion relative to its equilibrium level. However, the recent skepticism raised by several authors [9] as to such measures, together with the considerable amount of work involved in such computations for every year and partner, led us to postpone such development until a better understanding of the present model's potential is achieved.

All products classified under Sections 5 to 8 of the SITC were included, with two exceptions: "Pearls and precious stones" (group 667) and "Non-precious metals" (division 68). Both products were excluded on the grounds of their rapidly shifting directions of trade and the unlikely effects of tariff preferences upon these.

Five commodity-groups were selected:

Chemical products	-SITC Section 5
Machinery and transport equip.	-SITC Section 7
Textiles and clothing	-SITC Divisions 65 and 84
Metallic products	-SITC Divisions 67 and 69
Miscellaneous manufactures	-Other SITC Divisions in Sections 6 and 8

9.2.2. Specification of the regression models

The large number of equations and variables advised the use of a standardized procedure for selecting the most appropriate set of explana-

tory variables in each case. We followed a "forward" procedure of model
selection with the following stages:

1) All partial correlation coefficients were computed.

2) Starting with the variables revealing the highest partial
correlation to the dependent variable, all the other variables were, one
by one, orderly included into the equation. This procedure did not affect
the preference variables, which were all "forced in" the equation.

3) Those variables that could not achieve a statistically signifi-
cant level at a margin of error of 10% (under a two-tailed T-test), in
any of the periods considered for each commodity group, were excluded
from the final specification.

The following comments are suggested by the results of the specifi-
cation stage as presented in Tables IV.2, IV.6, IV.9, IV.11 and Appendix C.

Firstly, foreign trade size and distance are confirmed as the
main determinants of Portuguese direction of trade, in every commodity
group.

Secondly, the commodity composition of trade was excluded from
the aggregate trade equations, as it revealed insufficient size of effect
and the wrong sign. These results cannot be taken to confirm a strong
incidence of inter-industry trade, but suggest instead the effect of
multi-collinearity.

As explained in Appendix C with a greater detail, the positive
correlation between trade composition similarity and the pattern of
Portuguese exports failed to be signaled by a significant estimate of
its parameter, which confirms the presence of multicollinearity. There is
evidence of correlation between trade composition similarity and other
explanatory variables, particularly those that are assumed to describe
the effects of preferential arrangements. This is indeed an expected
difficulty , since the mutual liberalization of trade brought forward
by such arrangements will lead in the long run to an increasing comple-
mentarity between trade structures.

Thirdly, the disaggregated product equation show some disparities
as to model specification. 37/ Of special interest is the exclusion of the
capital-labour ratio in the chemical export equations and in the
machinery import equations. The former exclusion can be easily explained
by the heavily natural-resource intensive composition of Portuguese
chemical exports   . The latter case is less transparent, a possible
explanation lying in the dominantly skilled-labour-intensive and

innovative character of the engineering equipment imported by Portugal, that can hardly be accounted for by simple (physical) capital-labour ratios.

Also of some interest is the exclusion of the geographical concentration ratio in a number of disaggregated flow equations. This is probably the result of using total trade ratios as a proxy for concentration at a more disaggregated level.

9.2.3. Heteroscedasticity

The problem of heteroscedasticity arises whenever the assumption of constant and finite variances of the random term over the sample is not met. This is a typical problem in cross-section studies in which there is a large variation in the size of the entities for which data are obtained.[10/]

Heteroscedasticity has two implications for estimation. The first is that the OLS estimators, while still unbiased are no longer efficient, no longer providing minimum-variance estimators among the class of linear unbiased ones. The second and more important implication is that the estimated variances of the OLS estimators are biased, so the usual tests of statistical significance are no longer valid.

In our present model, there was preliminary evidence that the random term might be heteroscedastic, and therefore, that the T-tests of significance performed in the usual way might yield misleading conclusions[11/].

Given our relatively small number of observations, the testing of heteroscedasticity by means of Feldstein's chi-square test or Goldfeld-Quandt's F-test were out of question. We were restricted to following the simpler Glejser method, and regress the absolute value of the observed residuals on alternative combinations of independent variables. Among these, distance and the size of foreign trade were the most likely sources of heteroscedastic disturbances. Therefore, we would expect that the T-test on at least one of these coefficients showed significant size. Similar tests were conducted also for the export-side equations, but these provided scant evidence of heteroscedasticity, and so, the hypothesis of identical variance of the disturbances in these equations was accepted in general.

Contrary to what one might expect, the "mass" variable demonstrated to be very loosely related to the size of disturbances (Cf. Appendix C). On the other hand, distance was shown to be positively associated with it in every case studied but one, and in six cases out of fourteen the T-student test revealed statistical significance at the 10% level. This relationship is explained by the greater uncertainty that is generally associated to long distance trade, involving higher than average variation of market information and distribution costs.

Having confirmed the presence of an heteroscedastic process broadly related to the size of D, in the aggregate equation and also in the disaggregate equations related to imports of chemical, textile and miscellaneous products, we proceeded by deflating all the variables by the value of D. In so doing, we ignored variations of the strength of the heteroscedastic process across different time-periods and also the occasional intervention of the "mass" variable in that process. Experiments performed with alternative, more sophisticated deflating expressions, revealed minor changes in the standard errors of the estimates, in relation to the substantial change that followed the replacement of OLS by WLS regressions.

The application of the Glejser method to the correction of heteroscedasticity in our case is equivalent to assuming that the true variance of the random term varies proportionally with the square of distance. It is not impossible, however, that not only this basic assumption is invalid, but also that the particular forms of the heteroscedastic model detected are not the most suitable. In either case, the error term of the WLS regression would not be homoescedastic, and therefore, the usual T-tests of significance could not be performed.

This qualification must be borne in mind, when observing that the WLS method produced lower standard errors for the estimates than the OLS regression on undeflated variables. While encouraging, this improvement cannot be taken as an indication that heteroscedasticity has been fully corrected. Its proven presence is responsible for biased standard errors, in an a priori unknown direction, when regressions are run in heteroscedastic models [12].

9.2.4. Hypothesis testing on the parameters

Simple linear hypothesis on the bilateral relationships between the preference coefficients were tested, by means of the well known statistic:

$$\frac{\Sigma \, e_R^2 - \Sigma \, e^2}{\Sigma \, e^2 \, / \, N}$$

where $\Sigma \, e^2$ is the residual sum of the squares correspondent to the un-restricted equation, $\Sigma \, e_R^2$ is the R.S.S. in the equation containing the restriction to be tested, and $\underline{N}$ is the number of degrees of freedom.

The null hypothesis is the identity between each pair of preference coefficients, to be rejected when the correspondent statistic exceeds the value of the F distribution with 1 and N degrees of freedom at the 5% level of significance.

On a priori grounds, one expects the EEC preference effect to differ significantly from those of EFTA in the early period. This gap should close down during the following periods as a result of the preferential regime being progressively extended to EEC trade relations with Portugal.

9.3 Determinants of the geographical pattern of Portuguese exports

9.3.1. Aggregate manufactured exports

Table IV.2 presents the OLS estimates of the coefficients and their standard errors, for each of the four time periods, according to the export model:

(5) $\qquad B = \beta_o \cdot P_{efta}^{\beta_1} \cdot P_{eec}^{\beta_2} \cdot P_{uk}^{\beta_3} \cdot M^{\beta_4} \cdot D^{\beta_5} \cdot K^{\beta_6} \cdot CM^{\beta_7} \cdot e^u$

The evidence provided suggests that this model is appropriate to describe the main determinants of the geographical pattern of Portuguese manufactured exports in every period considered. The percentage of total

Table IV. 2

Aggregate Exports - OLS regression results

		P_{efta}	P_{eec}	P_{uk}	M	D	K	CM	Constant		
1971/73	Coeffic.	1.466*	-.19	2.296**	.904***	-.505**	.87**	-.298	4.285*	6.297	RSS
	St. error	.702	.655	.864	.154	.228	.302	.371	2.379	.900	R^2
	Sqpc	.225	.006	.32	.697	.247	.356	.041		19.321	F
1974/76	Coeffic.	1.639*	.279	2.008*	.988***	-.473*	.37	-.431	4.613	7.895	RSS
	St. error	.779	.733	.946	.178	.253	.326	.383	2.701	.85	R^2
	Sqpc	.228	.010	.231	.672	.189	.079	.078		12.114	F
1977/79	Coeffic.	1.299**	.749	1.737***	.929***	-.537***	.743***	-.791***	5.862***	2.884	RSS
	St. error	.465	.445	.557	.103	.154	.196	.222	1.592	.953	R^2
	Sqpc	.343	.159	.394	.845	.449	.491	.459		43.606	F
1980/82	Coeffic.	1.511***	.799*	1.503**	.866***	-.613***	.341*	-.835***	8.212***	2.525	RSS
	St. error	.436	.416	.522	.096	.143	.184	.207	1.525	.951	R^2
	Sqpc	.444	.198	.355	.845	.551	.186	.52		41.917	F

(*), (**) and (***) indicate rejection of the null hypothesis at 0.1, 0.05 and 0.01 margins of error with a two-tail test, respectively.

dependent variable variation explained ranges between 85 and 95%.

According to the values obtained for the squared partial correlations, the explanatory power of each variable is very unequal. The size of the foreign trade sector of the importing country acts as an attractive force of first magnitude. On its own, it accounts for a percentage of variance in the dependent variable between 67.2 and 84.5%, once the other explanatory variables are held constant.

The influence of commercial policy on the allocation of exports cannot be neglected altogether. The effects of the Free Trade Agreement with the EEC make themselves feel in the size of the respective squared partial correlation from zero to 20 percent, whereas the EFTA correlation coefficients vary between 23 and 44 percent.

The influence of those variables not directly related to commercial policy is not very stable throughout the period. Distance plays always a significant influence on exports, but it seems to increase after 1974/ 76. This tendency can be explained by the shifting relation between shipping and land transport costs after the first oil shock $\underline{13/}$. The estimates $\hat{\beta}_6$ and $\hat{\beta}_7$ show the correct sign in every equation, but sizes fluctuate widely. The rising influence of the CM variable may be connected to rising protectionism. As barriers against non-integrated members were raised, exports tended to be directed towards more loosely integrated third markets.

One would expect a greater stability of β_6, which is assumed to describe the influence of factor endowments on the geographical pattern of trade. Despite the relatively high simple correlation coefficient between this variable and the trade size of importing countries, the preliminary tests presented in Appendix C did not reveal signs of multicollinearity. Therefore, the fluctuations in β_6 are more likely to be attributed to an unstable relationship between the dependent variable and the capital-labour ratio across different periods (cf. Table C2).

In broad terms, the evolution of the estimated coefficients related to tariff preferences fully agrees with prior expectations. The export expansion effect of EFTA membership (as reflected in $\hat{\beta}_1$ and $\hat{\beta}_3$) is quiet substantial, which confirms previous empirical findings (see Chapter 8). The effect of the Free Trade Agreement is clearly revealed in the continuous increase of $\hat{\beta}_2$ from a level close to zero, until reaching a statistically significant size of 0.8 in the most recent period.

Moreover, the results of the hypothesis tests made on these three preference coefficients confirm a sharp distinction between the period prior to the Agreement, when the EEC effect cannot be considered statistically identical to that of EFTA countries, and the following periods, when the three parameters converge towards statistically identical levels (see Table IV.3).

Table IV.3

Hypothesis tests on preference coefficients

- Aggregate Exports

	$\beta_1 = \beta_2$	$\beta_2 = \beta_3$	$\beta_1 = \beta_3$
1971 - 73	NO (6.543)	NO (9.102)	YES (.944)
1974 - 76	YES (3.597)	YES (3.704)	YES (.149)
1977 - 79	YES (1.545)	YES (3.413)	YES (.582)
1980 - 82	YES (2.95)	YES (2.017)	YES (.000)

Note: Results indicate either acceptance (YES) or rejection (NO) of the null hypothesis; the figure between brackets is the value of the correspondent F. statistic. The critical value of $F(1,15)$ is 4.54 at a level of significance of 5%.

However, there are three aspects that deserve further comments.

In the first place, the results suggest that the impact on trade flows of the EEC tariff preferences is still behind that of EFTA membership in 1980/82, despite the hypothesis of identical size cannot be rejected on statistical grounds. This lag can be explained by the different timing of the adjustment process, as EFTA tariff preferences started being offered twelve years earlier. Another explanation will emphasize that, whereas the EFTA countries discriminate in favour of ldcs' exports through their own GSP schemes alone, the EEC provides more

generous concessions (in the form of Association or Free Trade Agreements) to a large number of Mediterranean countries. Therefore, in comparative terms the position of Portuguese exports remains more privileged within EFTA than within the Community. Finally, the relative sluggishness of the trade adjustment process to EEC tariff preferences may be partly attributed to the effect of V.E.R. agreements of 1978 and 1979/81. As we saw earlier in Chapter 3, after 1979 the bilateral voluntary quotas started to play an effectively curbing role on certain products (clothing in particular). As textile and clothing exports represent nearly 30 percent of manufactured exports to the EEC, we may hypothesize that, in the absence of such restrictions, the estimated EEC preference coefficient in the period 1980/82 might have reached a higher level, possibly much closer to that already reached in relation with EFTA.

The second aspect is that the initial comparative impact of the tariff preferences granted by the United Kingdom is greater than that of the other EFTA countries (despite the difference not being statistically significant). This lag may be attributed to the deeper "promotional effects" of economic integration in a context of long-established financial and commercial links.

Finally, a continuous decline in the P_{uk} coefficient can be taken as meaning that the accession of the U.K. and Denmark to the EEC is reducing the relative positive discrimination enjoyed by Portugal in these markets. This is explained by the same factors already referred to above, i.e., the Mediterranean preferences that were progressively adopted by those two countries in joining the common commercial policy.

In absolute value, the export expansion effect due to EEC tariff preferences can be defined as the difference between the dollar value of Portuguese actual exports to the EEC and the value that would be exported had the 1972 Trade Agreement not been in force.

According to the model explicit in equation (5), the actual value of exports to a given EEC country $\underline{i}$ can be given by:

$$(6) \quad \log B_i = b_o^- + \hat{\beta}_2 \log 2 + \hat{\beta}_4 \log M_i + \hat{\beta}_5 \log D_i + \hat{\beta}_6 \log K_i + $$
$$+ \hat{\beta}_7 \log CM_i + \hat{u}_i$$

where $b_o = \log \beta_o$

Representing the hypothetical value of exports to country $\underline{i}$ by $\overline{B}_i$, and under the assumption that preferences are totally uncorrelated with the other explanatory variables and with the error term, we have:

(7) $\quad \log \overline{B}_i = \hat{b}_0 + \hat{\beta}_4 \log M_i + \hat{\beta}_5 \log D_i + \hat{\beta}_6 \log K_i + \hat{\beta}_7 \log CM_i + \hat{u}_i$

We represent the export expansion effect induced by country i's preferences by E_i. Then the total EEC effect is $E_{eec} \equiv \sum_{i=1}^{6} E_i$, and

(8) $\quad E_i \equiv B_i - \overline{B}_i = B_i \left(1 - \dfrac{\overline{B}_i}{B_i}\right) = B_i \left[1 - \exp(\log \overline{B}_i - \log B_i)\right]$

$\quad\quad\quad = B_i \left(1 - 2^{-\hat{\beta}_2}\right)$

Under the present assumptions there is place only for the computation of an EEC global effect. Individual country effects will be proportional to their share in Portuguese exports to the EEC. However, separate computations by member country would be needed if there were reasons to believe that the error term is correlated to the EEC preference. In an extreme case, $\hat{u}_i^* = 0$ if the preference vanishes, and then, we should have[14]:

(9) $\quad E_i = B_i \left(1 - 2^{-\hat{\beta}_2} \cdot e^{-\hat{u}_i}\right)$

In rigour , one should compute the dollar value of export expansion only in those periods when the relative effect size is statistically significant, and use confidence intervals for the estimates. However, for simplicity in the presentation of these basic results, point estimation is preferable, but not too much meaning can be attached to small value differences. The estimation of export expansion effects for EFTA members follows the same procedure and is made under the same assumptions.

Table IV.4

Export expansion effects of the EEC and EFTA, in
million US dollars and as % of exports

	EEC - 7		EFTA - 7		UK and Denk.	
	Value	%	Value	%	Value	%
1971/73	0	0	104.0	63.8	160.5	79.6
1974/76	55.9*	17.6	181.2	67.9	231.0	75.1
1977/79	264.8*	40.5	170.9	59.4	279.3	70.0
1980/82	513.8	42.5	266.2	64.9	349.1	64.7

(*) Statistically unsignificant estimate at a margin of error of 10%.

One of the controversial issues in the estimation of welfare and
trade effects of economic integration regards its pratical meaning. It
is often argued that it is not worthy the computation effort required,
since their macroeconomic impact is quantitatively very weak. This general
assertion, however, can be proved incorrect in the case of an open small
economy as Portugal.

Relative to actual trade flows, the preference impact is quite
substantial, particularly in the case of the original EFTA members, as
can be seen in Table IV.4. In relation to the macroeconomic aggregates,
the size of export trade that is accounted for by preferential relations
to EFTA and the EEC taken together is also quite substantial.

The total export expansion effect represented 6.4 percent of GDP
in the period 1977/79 (2.9 percent for the EEC effect only), and 21.9
percent of total value added in the manufacturing sector, excluding food
and beverages (10 percent for the EEC effect).

The share in total merchandise exports over the same period was
42.8 percent (19.5).

These figures suggest only a rough order of magnitude and do not
allow simulation about the macroeconomic impact of tariff preferences.
For this purpose, one would have needed to comput net export expansion,
i.e., gross export expansion less the value of exports that were diverted
from third markets in order to benefit from preferential conditions on
the EEC and EFTA markets 15/.

A final question of interest is to compare the preferential trade

situations before and after the 1st enlargement of the EEC. This can be done by replacing the estimated preference coefficients $\hat{\beta}_1$ and $\hat{\beta}_3$ in 1980/82, by their corresponding values as estimated in 1971/73 and to compute the algebraic differences. These can be measured by the expression:

$$(10) \qquad B_i \ (1 - 2^{\overline{\beta_1} - \hat{\beta}_1})$$

where $\overline{\beta_1}$ is the estimated coefficient for remaining EFTA members in 1971/73. Same for $\overline{\beta_3}$.

Table IV.5

Variation in export expansion effects (in million US dollars)
relative to 1971/73

	EEC - 7	EFTA - 7	UK & DK
1980/82	+ 513.8	+ 12.6	- 395.2

On the basis of this evidence, one may claim that the changes intervening in 1973 on the European economic integration scene brought a slight improvement to Portuguese exports, the absolute decline in preference effects on UK market being more than compensated by export gains on the markets of the other seven EEC countries.

So far, the only available estimate of export expansion effects of EEC preferences is that published in Silva Lopes (1982). He assumed that, in the absence of preferences, the trend in the market share of Portuguese exports to the EEC would be the same of that actually recorded in a "control" group formed by the USA, Canada, Japan and Spain. By comparing the hypothetical value of exports in 1978 (one third less than the level reached in 1972) to their actual value, S. Lopes arrived at an estimate of US $ 350 million in current prices.

The use of multiple regression allows us to dispense with the assumption of a similar trend in market shares [16/]. In the present context there are reasons to believe that such assumption will produce biased results. Given an inelastic export supply, the actual share of Portuguese exports on the control group's markets is not independent from the tariff preferences obtained on the EEC market. As the comparison is made between a period when EEC preferences were not yet in existence and another when

they were already present, the predicted trend in market shares is under-stated and therefore the final estimate may well be upwards biased.

9.3.2. Disaggregated commodity groups

Table IV.6, Panels A to E, presents the OLS regression results for each of the 5 commodity groups.

In broad terms, we may conclude from this evidence that there are significant differences between them in regard of the pattern of trade determinants, and especially in regard of the influence of tariff preferences.

The results for the chemical group do not reveal any influence of tariff preferences, either of EFTA or of the EEC, upon the direction of Portuguese exports. This may be attributed to the large share of semi-manufactured items in Portuguese chemical exports, which pay low duties in export markets due to the escalating tariff structures. Hence, the effective preferential margin induced by preferences is in most cases irrelevant. On the other hand, Portugal has not revealed comparative advantages in more elaborated chemical products which could reap some benefits from the access to EFTA and EEC markets [17].

In contrast, the exports of machinery and transport equipment reveal some influence of tariff preferences. This is detected in the squared partial correlation of variable P_{uk} and in the quite "normal" behaviour of all preference coefficients between 1971/73 and 1980/82.

This was the commodity group where the preferences granted by the UK differed more dramatically from those of the other EFTA countries. This may be explained by the particularly heavy requirements in capital and technology of this kind of production. A good share of such exports was associated to foreign direct investment of EFTA and non-EFTA origin, whose purpose was to serve EFTA markets from a cheaper location (especially in terms of unskilled and skilled labour). The evidence suggests that the business links with the UK might have helped in particular the channelling of trade towards the UK market.

The extension of tariff preferences to the EEC market seemed to have diverted a good share of this trade towards it, without having increased total exports significantly.

A partial explanation for this apparent failure in total export

Table IV. 6 - A - <u>Exports of chemical products</u> - <u>OLS regression results</u>

		P_{efta}	P_{eec}	P_{uk}	M	D	K	CM	Constant		
1971/73	Coeffic.	.894	1.134	1.1	.942***	-.551		-.919	7.108	29.102	RSS
	St. error	1.138	1.28	1.71	.302	.434		.753	4.343	.607	R^2
	Sqpc	.037	.047	.025	.378	.092		.085		4.113	F
1980/82	Coeffic.	.191	1.136	.444	1.374***	-.778*		-1.073	5.422	24.299	RSS
	St. error	1.046	1.183	1.513	.266	.393		.62	4.083	.799	R^2
	Sqpc	.002	.055	.005	.625	.197		.158		10.604	F

Table IV. 6 - B - <u>Exports of machinery and transport equipment</u> - <u>OLS regression results</u>

		P_{efta}	P_{eec}	P_{uk}	M	D	K	CM	Constant		
1971/73	Coeffic.	.923	-.611	2.43*	1.297***	-.699**	.795*	.049	.421	12.778	RSS
	St. error	1.017	.936	1.234	.22	.327	.429	.53	3.326	.865	R^2
	Sqpc	.052	.028	.205	.7	.234	.187	.001		13.76	F
1980/82	Coeffic.	.48	.9	.627	.805***	-1.436***	1.139**	-1.645***	12.109***	11.239	RSS
	St. error	.939	.875	1.103	.199	.303	.39	.438	3.129	.887	R^2
	Sqpc	.017	.066	.021	.523	.484	.363	.485		16.879	F

Table IV.6 - C - <u>Exports of textiles and clothing</u> - <u>OLS regression results</u>

		P_{efta}	P_{eec}	P_{uk}	M	D	K	CM	Constant		
1971/73	Coeffic.	1.888**	-.984	2.914**	.847***	-.927***	.595		8.315***	8.808	RSS
	St. error	.765	.804	1.038	.172	.263	.371		2.365	.891	R^2
	Sqpc	.289	.091	.344	.617	.453	.146			17.447	F
1980/82	Coeffic.	2.661***	1.128	3.303***	.822***	-1.17***	.669*		10.010***	7.419	RSS
	St. error	.697	.747	.909	.16	.241	.338		2.194	.935	R^2
	Sqpc	.493	.132	.468	.636	.611	.208			30.796	F

Table IV.6 - D - <u>Exports of metallic products</u> - <u>OLS regression results</u>

		P_{efta}	P_{eec}	P_{uk}	M	D	K	CM	Constant		
1971/73	Coeffic.	-.953	-1.368	.442	.871**	-.771	1.507**		3.622	32.884	RSS
	St. error	1.5	1.45	1.791	.326	.513	.626		4.572	.662	R^2
	Sqpc	.025	.053	.004	.556	.124	.266			5.229	F
1980/82	Coeffic.	-.903	-1.598*	-1.446	1.096***	-.957***	-.35		8.081***	11.81	RSS
	St. error	.877	.877	1.074	.201	.298	.361		2.744	.781	R^2
	Sqpc	.062	.172	.102	.649	.392	.055			9.482	F

Table IV. 6 - E - <u>Exports of miscellaneous manufactured products</u> - <u>OLS regression results</u>

		P_{efta}	P_{eec}	P_{uk}	M	D	K	CM	Constant		
1971/73	Coeffic.	.263	-.746	.613	.834***	-.322	1.002***	-.647*	4.674**	5.167	RSS
	St. error	.627	.594	.785	.131	.205	.288	.336	1.958	.911	R^2
	OLS sqpc	.012	.095	.039	.729	.141	.447	.198		21.996	F
1980/82	Coeffic.	-.083	-.314	.182	.863***	-.482***	.533**	-1.023***	8.039***	2.087	RSS
	St. error	.394	.379	.476	.087	.131	.189	.188	1.284	.96	R^2
	OLS sqpc	.003	.044	.01	.868	.475	.348	.663		51.826	F

(*), (**) and (***) indicate rejection of the null hypothesis at 0.1, 0.05 and 0.01 margins of error with a two-tail test, respectively.

Table IV. 7

Hypothesis tests on preference coefficients

- Disaggregate Exports

		$\beta_1 = \beta_2$	$\beta_2 = \beta_3$	$\beta_1 = \beta_3$	Critical F value
Chemicals	1971/73	YES (.033)	YES (.000)	YES (.014)	4.49
	1980/82	YES (.584)	YES (.215)	YES (.026)	
Machinery	1971/73	YES (2.913)	NO (6.714)	YES (1.559)	4.54
	1980/82	YES (.239)	YES (.069)	YES (.017)	
Textiles	1971/73	NO (13.521)	NO (15.982)	YES (1.022)	4.49
	1980/82	YES (4.403)	NO (6.535)	YES (.491)	
Metals	1971/73	YES (.087)	YES (1.128)	YES (.603)	4.49
	1980/82	YES (.66)	YES (.022)	YES (.251)	
Miscellaneous	1971/73	YES (2.914)	YES (3.311)	YES (.194)	4.54
	1980/82	YES (.37)	YES (1.214)	YES (.287)	

See note at the bottom of Table IV. 3.

effects may lie in the rather modest inflow of F.D.I. Portuguese manu-
facturing in the recent years.

Exports of textiles and clothing revealed the strongest impact
of tariff preferences, as revealed both by the large sqpc coefficients
and the rather predictable relationship between β_1, β_2 and β_3 as evidenced
in Table IV.7. Moreover, we may note the strong negative discrimination
of Portuguese exports on the EEC market, previously to the Agreement.
This one has served to more than compensate for an initial disadvantage
in the competition against other   low-cost suppliers, rather than

re-create the very favourable environment that Portuguese exports of
textile & clothing have known on EFTA markets. It is remarkable that the
gains obtained on the EEC markets have not corresponded to export trade
diversion from traditional EFTA destinations, and that instead, the
competitive position of Portuguese products in the latter substantially
improved, as suggested by the increase in β_1 and β_3.

These results confirm the relationship between the existing pattern
of comparative advantages and the gains from tariff preferences. Those
industries whose productions costs are closer to the minimal competitive
levels will be the ones most prepared to exploit the new opportunities
on foreign markets. As shown elsewhere (cf. A.Silva, 1981) the textile
group in general consists of commodities whose position in the "revealed-
comparative-advantages" hierarchy of Portuguese-EEC trade is very high.
The same happens with some electrical engineering products that are
included under the group "machinery and transport equipment".

The results produced by the regressions of the last two commodity
groups brought some interesting evidence. Given the established relation-
ship between RCAs and preference gains, and the generalized lack of
comparative advantages vis-à-vis the EEC in metallic products, one could
not expect a visible impact of any of the trade agreements on their trade.
However, the negative sign of the estimates (one of which is significant)
suggests that other countries, particularly some of the GSP beneficiaries,
might have taken greater advantage of tariff preferences than Portugal.

Finally, the results obtained for the "miscellaneous" group do
not confirm our expectations about a sizeable effect of tariff preferences
on trade. On the other hand, the Free Trade Agreement seems to have
helped to reduce the negative discrimination that Portuguese exports of
some products apparently suffered initially on the EEC market.

Some of the products included under this group enjoy a very
favourable RCA position, as it is the case with manufactured cork; others
enjoy only a moderately favourable position, as footwear, paper, ceramics
and wood. A possible explanation for the results that we obtained lies
in the fact that Portuguese advantages in exports of cork are so strong,
in the world as a whole, that tariff preferences are just not necessary
to promote a significant expansion of trade. Hence, a very diversified
pattern of exports, as confirmed, for instance , by the very low size
of β_5. On the other hand, the commodities enjoying only a moderate degree
of competitiveness on the EEC market are subject to strong competition

from other low-cost suppliers that benefit of identical tariff preferences
either from GSP schemes or bilateral agreements.

Table IV.8

Variation in Export expansion effects relative to 1971/73

(current prices of 1980/82, million US dollars)

	EEC	EFTA	UK + DK
Machinery	+ 205.1	- 9.8	- 155.3
Textiles	+ 312.4	+ 117.9	+ 81.4
Miscellaneous	+ 82.7	- 21.1	- 36.2
Chemicals	+ 0.2	- 3.8	- 9.8
Metallic	- 6.6	+ 0.5	- 31.7

The figures presented in Table IV.8 describe variations in the
absolute value of export expansion effects between 1971/73 and 1980/82,
and were calculated according to expression (10).

Therefore, they include, in the case of the EEC, the "reversion"
effect of previous trade discrimination.

The horizontal evaluation of these figures suggests that:

i) Exports of textiles and clothing were the only commodity group
that showed unambiguous net trade gains from tariff preferences through-
out the period. This result is a repetition of that already achieved
during the previous decade, following EFTA membership, which is an
indication of a relatively stable pattern of comparative advantages [18/].

ii) Exports of machinery and equipment and of miscellaneous manu-
factures, while revealing the influence of tariff preferences, do not
show a clear net gain. Expansion of exports to the EEC market were to
a great extent the outcome of diversion from EFTA markets. The shift in
the direction of exports of engineering products may in part have been
associated to alternative orientations in local subsidiaries of foreign
enterprises in order to take advantage of the duty-free acess to the
EEC market after 1973.

iii) Exports of chemical and of metallic products did not suffer
any visible effect of tariff preferences.

Vertical evaluation of the same figures confirms the net positive effects in respect of mini-EFTA and the EEC, already shown in Table IV.5 and also the net absolute decline in the effects of preferences given by the UK and Denmark. This decline is heavily influenced by the machinery group.

9.4. Determinants of the geographical pattern of Portuguese imports

9.4.1. Aggregate manufactured imports

Table IV. 9 presents the Weighted-Least Squares estimates of the coefficients and their standard errors, according to the import model:

$$(11) \qquad A = \alpha_0 \cdot P_{efta}^{\alpha_1} \cdot P_{eec}^{\alpha_2} \cdot P_{uk}^{\alpha_3} \cdot X^{\alpha_4} \cdot D^{\alpha_5} \cdot K^{\alpha_6} \cdot CX^{\alpha_7} \cdot e^{V}$$

This model seems appropriate to describe the main determinants of the geographical pattern of Portuguese foreign trade, as the regression coefficients are quite satisfactory. However, the relative influence of its seven variables is very unequal. The size of the partners' foreign trade and geographical distance seem to provide nearly full explanation for the variation in the dependent varible throughout the period.

The existance of close ties with third markets and resource endowments play a minor role in the allocation of imports according to source, and this is subject to fluctuations. In particular, the fact that the squared partial correlation coefficient of K in respect of A is significant only in 1977-79 and 1980-82 may be associated with the multicollinearity pattern detected in the simple correlation matrix and the preliminary tests whose results are presented in Appendix C. In the two earlier periods the strong relationship between the value of manufactured exports and the capital-labour ratio of each partner prevented the specific effect of factor endowments on import allocation to be picked up independently in the regression.

In terms of explanatory power, the import model gains very little, if anything, with the inclusion of the three preference variables. One may conclude, therefore, that the geographical pattern of Portuguese imports is affected by preferential trade policy only to a minor extent,

Table IV. 9

Aggregate Imports - WLS regression coefficients' estimates and standard errors and OLS correlation statistics

		P_{efta}	P_{eec}	P_{uk}	X	D	K	CX	Constant	OLS	
1971/73	Coeffic.	.699	-.657	.321	1.317***	-1.059***	.051	-.746**	8.685***	4.221	RSS
	St. error	.544	.497	.629	.105	.17	.261	.345	1.639	.971	R^2
	OLS Sqpc	.121	.045	.03	.927	.615	.000	.247		65.874	F
1974/76	Coeffic.	.303**	-.515	.476	1.455***	-1.299***	.137	-.418	7.402***	6.164	RSS
	St. error	.597	.576	.732	.129	.198	.28	.368	2.023	.965	R^2
	OLS Sqpc	.259	.021	.039	.91	.64	.000	.066		55.589	F
1977/79	Coeffic.	.058	-.343	-.016	1.119***	-1.084***	.738***	-.833***	9.056***	3.767	RSS
	St. error	.478	.449	.603	.102	.156	.228	.276	1.696	.971	R^2
	OLS Sqpc	.012	.007	.002	.908	.658	.357	.386		66.305	F
1980/82	Coeffic.	.392	-.073	.355	1.148***	-1.097***	.544**	-.544*	8.436***	4.698	RSS
	St. error	.538	.506	.656	.108	.176	.238	.279	1.83	.958	R^2
	OLS Sqpc	.069	.004	.037	.902	.602	.204	.213		46.054	F

(*), (**) and (***) Indicate rejection of the null hypothesis at 0.1, 0.05 and 0.01 margins of error with a two-tail test, respectively.

However small, tariff effects show some consistent trends through-
out the period, that deserve a separate examination.

First of all, a visible trend in the size of α_2 is clearly notice-
able. Its progressive increase from -.657 to a value very close to zero can
be taken as an indication that the prime effect of the Free Trade Agreement
has been the removal of negative discrimination against EEC products in the
domestic market. Therefore, the net aggregate outcome of tariff preferences
granted to the EEC can not be considered either trade creating or trade di-
verting, but rather "trade reversing", defined as a shift of import sources
from countries that had originally benefited from earlier preferences (the
original EFTA) at the expense of EEC exports back towards EEC countries.

During the first half of the period under consideration, the
effect of preferences granted to those countries that remained in EFTA was
stronger than that corresponding to the UK and Denmark. This pattern con-
trasts with the results obtained with the export model, where "promotional
effects" of integration were thought to have induced more significant
effects in trade with the UK. The evidence obtained suggests that these
effects were not strong enough to compensate for the long-run declining
position of the UK as a competitive source of manufactured products, world-
wide.

Table IV.10

Hypothesis tests on preference coefficients
- Aggregate imports

	$\alpha_1 = \alpha_2$	$\alpha_2 = \alpha_3$	$\alpha_1 = \alpha_3$
1971-73	YES (4.397)	YES (1.708)	YES (.294)
1974-76	NO (7.762)	YES (1.42)	YES (1.126)
1977-79	YES (.572)	YES (.182)	YES (.023)
1980-82	YES (.69)	YES (.317)	YES (.006)

See note at the bottom of Table IV.3

The results of hypothesis tests shown in Table IV.10 indicate that tariff preferences were not effective enough to induce significant shifts between Portugal's traditional trade partners as far as the source of imports is concerned. An exception is the significant difference between the EFTA and the EEC coefficients in 1974-76. The evidence of a rising impact of tariff preferences on imports originating in EFTA between the first and the second time periods is not totally surprising. Tariff removal vis-à-vis the products included under Annex G continued past 1974, and the tariff rates in respect of EFTA products must have reached in 1975 their lowest level ever.

Finally, one of the most interesting results from the regressions presented in Table IV.9 is that, during the second half of the period under consideration, the sizes of $\hat{\alpha}_1$ and $\hat{\alpha}_3$ decline towards values that are very close to zero. In spite of the apparently very generous tariff preferences in favour of EFTA and EEC countries, the pattern of import allocation tended to become quite "flat" towards the end of the period, only with a slight recovery in 1980-82. In other words, is does not seem possible to detect any sizeable "gross trade creating effect" in respect of all the "preferred" partners taken together [19/]

Consequently, the interpretation of the behaviour of the preference coefficients requires an additional explanation.

After 1973, as we have seen above in Chapter 3, two separate developments took place in terms of commercial policy: while the import duties were preferentially reduced vis-à-vis the EEC (and also, to some extent, vis-à-vis EFTA), non-tariff barriers were increasingly imposed, by principle in a non-discriminatory manner.

The presence of these barriers may reduce the trade impact of tariff preferences below what would be expected under normal circumstances. Figure IV.1 depicts the standard partial equilibrium model for one homogeneous good, whose domestic supply and demand functions, respectively $P_w S'$ and DD', have the usual slopes and are linear . The supply functions of the prospective customs union partner, $\overline{P_u S_u}$ and of the rest of the world, $\overline{P_w S_w}$, are infinitely elastic.

The analysis of A. Tovias (1982), presented in Section 6.3., on the estimation of trade effects in "share-method-based" studies and their connection to welfare effects, can be easily extended to the present method-

Figure IV.1
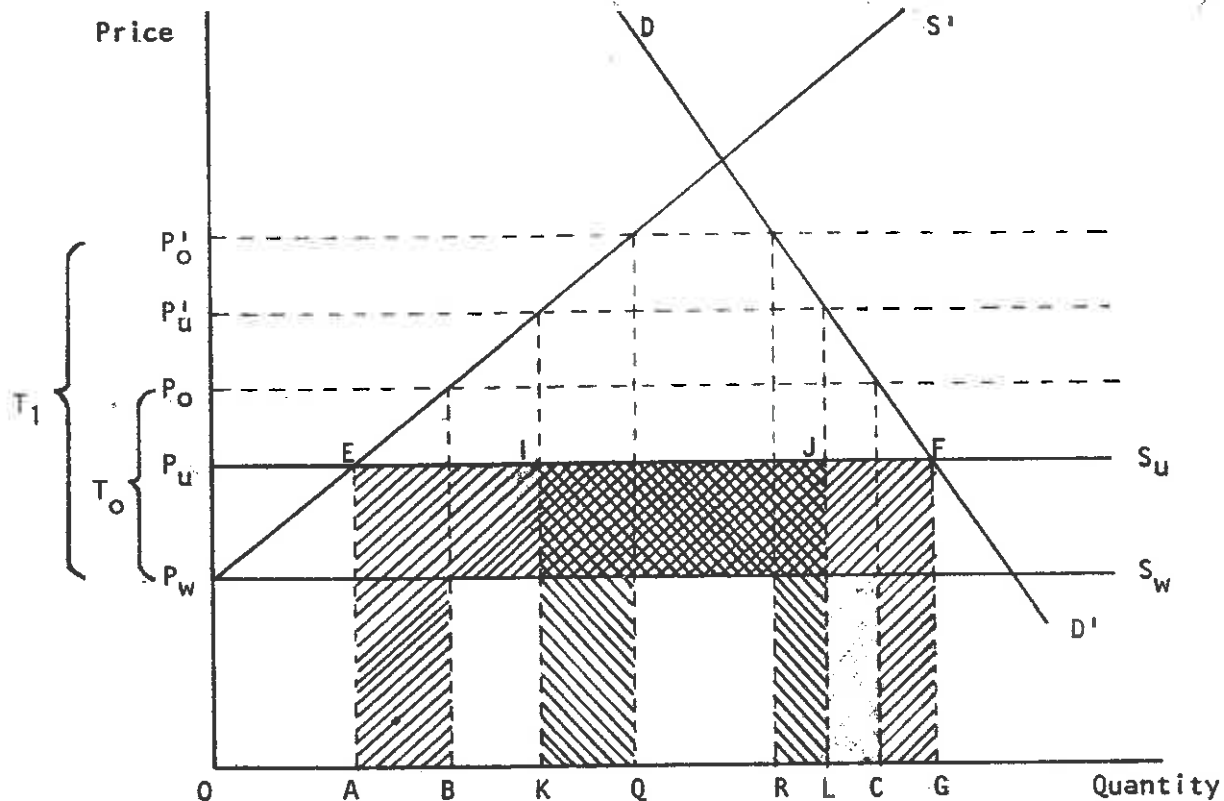
ology. Let us suppose that the home country levies a non-discriminatory tariff equal to T_o, which raises the pre-union domestic price to $\overline{OP_o}$.

Under traditional assumptions, the effects of a customs union to be established between the home country and the prospective partner consist in increasing imports from $\overline{BC}$ to $\overline{AG}$, and to raise the import price, net of tariff, from $\overline{OP_w}$ to $\overline{OP_u}$. "Gross trade creation", under the gravity approach (as under the share approach) is measured as the difference between actual imports from the union partner and the hypothetical imports from the same country if no customs union had been formed. This value is represented in Figure IV.1 by the area of rectangle AEFG. If it were possible to deduct the value of trade diverted, i.e., those imports that would be supplied by non-union countries, if no customs union had been formed, one would arrive at a net value of trade creation which is represented in Figure IV.1 by the area with rightward-leaning stripes.

Now, if we introduce the assumption of a non-discriminatory non-tariff barrier, equivalent to $(T_1 - T_o)$ per unit of output, both the initial and the final values of imports would be reduced relative to the previous

case. "Gross trade creation" would be represented in this case by the area
of rectange KIJL, and if it were possible to estimate the value of trade
diverted by some process, we would arrive at an estimated value for "net"
trade created' equal to the area with leftward-leaning stripes, in Figure
IV.I. Comparing the results obtained under the traditional and the present
assumptions, either in terms of net or gross trade creation, we must con-
clude that the presence of non-tariff barriers reduces the magnitude of
the estimated trade impact of the customs union. This conclusion may how-
ever be wrong, if the domestic supply or the demand schedules are not linear.
Then, it is not possible to guarantee that the reduction in supply (or the
increase in demand) following the fall of the domestic price will be identi-
cal under the two circumstances, i.e., it is not possible to state that
$\overline{AB} = \overline{KQ}$ (or that $\overline{RL} = \overline{CG}$).

Now if we abandon the assumption that non-tariff barriers are
raised in a non-discriminatory way, and accept instead that the authorities
in the importing country are willing to charge more heavily those products
originating in preference-receiving countries (e.g. in order to afford ex-
tended protection to domestic activities under threat) the estimated trade
impact of the preferential arrangement would be even lower. As the price
of imports from preference-receiving countries rise above P_u', the areas
corresponding to "gross trade creation" or to "net trade creation" will
shrink correspondently.

Since the present methodology is not able to net out the effect
of non-tariff barriers on trade, we are obtaining as an estimate of gross
trade creation the difference between actual imports from the EEC (or
any other bloc) and the imports that would take place if imports from the
EEC had been subject simultaneously to the m.f.n. tariff and to identical
NTBs as those imposed on the imports from the rest of the world. It is
therefore understandable that the present methodology provides a relatively
"flat" estimate of trade effects on the allocation of imports.

There is not much use in calculating the import effects in
dollar values, given the generally low size of the estimated parameters.
Moreover, the absolute size of "trade reversion" in 1980/82 can not be
computed from the estimated $\hat{\alpha}_2$ in 1971/73, as the conditions prevailing
in respect of non-tariff distortions in that period are totally differ-
ent of those that presently exist.

The evidence provided in Table IV.9 allows for the following conclusions:

i) Between 1971/73 and 1980 /82 the preferential trade policy had mainly a redistributive role in respect of imports originating in the EEC and in EFTA countries. A substantial share of imports was diverted from EFTA to EEC origin, thereby reversing the trend that was typical of the period 1960-72.

ii) The effects of preferential trade policy remained as a very minor determinant of the allocation pattern of Portuguese imports. However, there is no fundamental reason why it should be so, as the significant EFTA effect during the period 1974/76 and the decline in the negative parameter of EEC preferences throughout the ten-year interval show.

iii) One may attribute to the impact of non-tariff barriers the main responsibility for the fact that the consequences of the Free Trade Agreement and of EFTA membership troughout the whole period have been far from those theoretically expected.

9.4.2. Disaggregated commodity groups

Table IV.11 presents the results of the regressions where the dependent variable is disaggregated into five groups of manufactured imports, for two different periods : 1971-73 and 1980-82. These results show that the influence of the factors determining the geographical distribution of Portuguese imports is not rigorously identical across industrial sectors. The "mass" variable is significant in all the five sectors considered, but the sources of textile, chemical and miscellaneous imports seem to have become more diversified throughout the period. Distance plays also a significant role in the allocation of imports in every sector, and especially so in the chemical and the metallic groups. Whenever statistically significant, the coefficients of K and CX present the expected sign in every commodity group.

The trade effect of preferences in favour of EFTA countries and the UK was positive for every commodity group in years 1971-73. That effect was particularly strong in the textile group, which was also the only one to show some significant influence of tariff preferences upon import allocation. Throughout the period under analysis, the effect of EFTA membership declines noticeably in every group, except

Table IV.11 A - __Imports of chemical products - WLS regression coefficients' estimates and st. errors,__ and OLS correlation statistics

		P_efta	P_eec	P_uk	X	D	K	CX	Constant	OLS	
1971/73	Coeffic.	.378	-.89	-.627	1.129***	-1.305***	-.413	-1.127**	15.121***	9.69	RSS
	St. error	.792	.736	.891	.16	.243	.387	.503	2.116	.917	R^2
	OLS sqpc	.021	.058	.015	.761	.573	.075	.201		22.063	F
1980/82	Coeffic.	-.575	-.387	-.491	.922***	-1.638***	.761**	-.762*	15.274***	8.097	RSS
	St. error	.699	.679	.86	.148	.23	.321	.357	2.183	.938	R^2
	OLS sqpc	.029	.025	.022	.757	.716	.228	.232		30.014	F

Table IV.11 B - __Imports of machinery and transport equipment - OLS regression results__

		P_efta	P_eec	P_uk	X	D	K	CX	Constant		
1971/73	Coeffic.	1.543	.301	1.449	1.287***	-1.106**		.004	6.905*	20.289	RSS
	St. error	1.047	1.174	1.48	.125	.398		.694	3.273	.917	R^2
	Sqpc	.127	.004	.06	.875	.34		.000		27.613	F
1980/82	Coeffic.	.995	.019	.192	1.221***	-.846***		-1.093***	8.713***	8.487	RSS
	St. error	.653	.729	.949	.097	.24		.368	2.259	.943	R^2
	Sqpc	.134	.000	.003	.914	.452		.371		41.269	F

Table IV. 11 - C - __Imports of textiles and clothing - WLS regression estimates and st. errors__ and OLS correlation statistics

		P_efta	P_eec	P_uk	X	D	K	CX	Constant	OLS	
1971/73	Coeffic.	2.733***	-1.066	1.953*	1.286***	-1.135***	1.414**		4.486*	15.175	RSS
	St. error	.957	1.008	1.194	.212	.314	.394		2.717	.91	R^2
	OLS sqpc	.337	.037	.147	.728	.391	.459			25.202	F
1980/82	Coeffic.	2.215*	.978	1.618	.987***	-1.091**	.439		7.718**	34.753	RSS
	St. error	1.301	1.302	1.585	.321	.422	.521		4.057	.69	R^2
	OLS sqpc	.122	.031	.048	.342	.205	.035			5.559	F

Table IV. 11 - D - __Imports of metallic products - OLS regression results__

		P_efta	P_eec	P_uk	X	D	K	CX	Constant		
1971/73	Coeffic.	.022	-1.391*	.828	1.579***	-1.408***	.945**		6.005**	8.301	RSS
	St. error	.758	.764	.93	.116	.257	.329		2.041	.966	R^2
	OLS sqpc	.000	.181	.05	.925	.667	.355			70.179	F
1980/82	Coeffic.	.931	-.501	1.388	1.69***	-1.51***	.441		5.723**	7.318	RSS
	St. error	.719	.711	.874	.125	.244	.3		2.106	.964	R^2
	OLS sqpc	.101	.032	.144	.924	.719	.125			67.723	F

Table IV. 11 - E - __Imports of miscellaneous manufactured products - WLS regression__ estimates and standard errors, and OLS correlation statistics

		P_efta	P_eec	P_uk	X	D	K	CX	Constant	OLS	
1971/73	Coeffic.	.413	-.496	1.0	1.274***	-1.394***	1.752***	-.861	8.01**	19.781	RSS
	St. error	1.074	.983	1.267	.233	.345	.534	.676	3.326	.92	R^2
	OLS sqpc	.057	.021	.07	.746	.437	.297	.104		28.725	F
1980/82	Coeffic.	.304	.202	.466	1.054***	-.951***	1.367***	-.488	5.878*	11.323	RSS
	St. error	.808	.763	.996	.174	.271	.359	.423	2.781	.911	R^2
	OLS sqpc	.024	.025	.056	.743	.268	.442	.087		25.669	F

(*), (**) and (***) indicate rejection of the null hypothesis at 0.1, 0.05 and 0.01 margins of error with a two-tail test, respectively.

metallic products.

Before the Free Trade Agreement, the imports of all manufactured product groups considered, except machinery and transport equipment, were subject to negative discrimination vis-à-vis the EEC countries. This situation was reversed after 1973, as the estimates of $\hat{\alpha}_2$ show. Again with the exception of machinery and transport equipment, these estimates approach zero in 1980-82, and in the textile sector it reaches a positive level, while not significant in statistical terms.

Let us consider the disaggregated results in more detail. The textile group shows significant trade creating effects of EFTA membership in 1971-73, which decline noticeably towards 1980-82. There is apparently a shift of import sources towards EEC suppliers as a result of the 1973 Agreement. One may note in addition that the explanatory power of the regression deteriorates between the two periods, and that the size of the coefficient indicating factor endowments declines. This suggests that the textile imports became more diversified towards countries that are characterized by low capital-labour ratios.

The influence of tariff preferences seemed to be outweighed by other factors in the determination of imports of machinery and transport equipment, in particular from the EEC. No effect of any kind is visible in regard to the impact of tariff removal. One possible explanation lies in the role of licensing, that is especially relevant, given the high average unit value of machinery imports. Another reason for this evolution is the impact of the special protective measures taken in regard to the automobile sector. Finally, one may accept the possibility that the competitive strength of EEC suppliers of these products has declined relative to that of Japan or the United States. To accept this possibility amounts to recognize that the EEC's share in the Portuguese market has hold on to its 1971-73 values thanks to the tariff preferences.

In the remaining sectors, tariff preferences play a very minor role. In chemicals, there is slight indication of a preference for non-preferred sources, probably on the grounds of quality specification. Inversely, the imports of metallic products have been progressively more concentrated into the preference-receiving partners, which suggests belated extension of tariff removal into this particular sector. Finally, the group of miscellaneous imports is quite representative of the overall pattern, with EEC products being benefited relatively with trade reversion, while the the allocation of imports as between potential suppliers continues to be generally "flat".

CHAPTER 10

A TIME-SERIES REGRESSION ANALYSIS OF TRADE
AND WELFARE EFFECTS OF PREFERENTIAL POLICIES
ON MANUFACTURED IMPORTS

From the previous exposition, it is now clear that an estimating
model for imports has to be developed, with the following properties:

1. Independent estimation of trade parameters, covering both the pre-
   integration and the post-integration periods.
2. Ability to separate trade creation and trade diversion effects.
3. Ability to quantify the effects of trade policy instruments other
   than tariff preferences.

The class of models that cope with these requirements is the
"analytical" approach based on time-series estimation of tariff and price
elasticities, whose general properties were examined in Section 7.3. A
major difficulty with this approach consists in the mutual relationship
between income, price and tariff variables in a model comprising more
than two trading areas. Previous empirical studies have been seriously
confronted with problems raised by excessive multicollinearity.

A possible solution for this difficulty was suggested by S.Resnick
and E. Truman (1975). It consists of an application of models originally
developed to deal with the consumer's allocation problem [21].

Essentially, the Resnick and Truman's method consists in the
following:

Let us assume that real imports of an individual country are
conveniently specified by an import demand function in reduced form. Once
total imports are "given", the problem consists in finding a general set
of equations that determines their allocation among a breakdown of groups
of source countries.

The simultaneous inclusion of all possible groups in any number
n larger than two would generate a set of n equations relating each
proportional change in imports from the ith source to change in total
imports and a set of n variables depicting price changes in each of the
groups considered, subject to the usual restrictions[22]. Given the inter-
dependence between business cycles, price changes and tariff policies

among different trade partners, their simultaneous inclusion into the
trade model would certainly raise problems of extreme multicollinearity.

On the oter hand, any solution that allowed for the estimation
of direct price elasticities alone would be unsatisfactory not only
because it would impose considerable constraints on the relative price
term (that would be aggregated over all the other prices), but also
because cross elasticities of import demand are crucial for our purpose
to isolate trade diverting effects.

According to Resnick and Truman, a possible solution consists in
specifying the allocation model in several stages, so that imports are
distributed among successively more narrowly defined groups of source
countries. Within each stage, import shares are assumed to be determined
by the prices of own goods and of competing goods.

The parameters that are estimated by this econometric model
measure direct and indirect price effects, that allow us to study the
implications of differential price changes or of discriminatory tariff
changes on total import trade and on its allocation by sources.

Two additional features were introduced into the original Resnick
and Truman's model, besides a different breakdown of imports by sources.
One feature consists in the possibility of investigating the stability
of the model over time. Another feature consists in allowing for the
possible influence of economic growth, not only on total trade, but also
on the source of imports. Both additions are designed to bring more
flexibility into the model, and will be discussed in more detail below.

10.1 Specification of the model

.The present model is specified in three different stages. In
the first stage, total imports are determined by a demand function. In
the second stage, these are distributed between two broad groups of
countries: "preferred", i.e. those countries that have signed preferential
trade agreements with Portugal during the period under study, and "non-
preferred". In the third stage, the former group is separated into three
blocs -the original EEC countries, the EFTA countries that have not
joined the EEC, and the United Kingdom plus Denmark-, whereas the latter
is decomposed in two- Spain and the Rest of the World. This system can

be shown graphically, as in Figure IV.2.

Figure IV.2
System of import equations

Stage I   Total imports

Stage II   Imports from   Imports from

        "preferred" countries   "non-preferred" countries

Stage III   (A)   (B)

Imports   Imports   Imports   Imports   Imports

from the   from   from the   from   from the

EEC (6)   EFTA (5)   the UK   Spain   R.O.W.

                      and Denmark
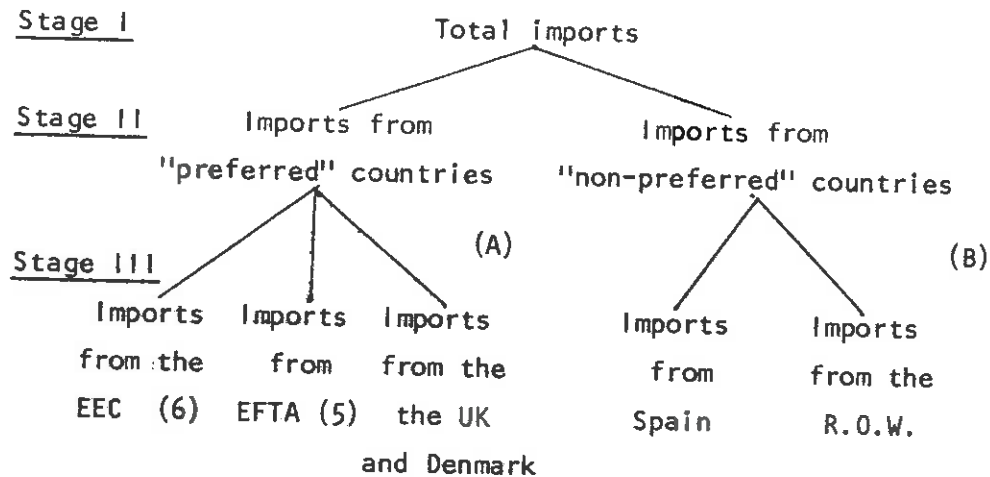
10.1.1. A function of import demand

Total real imports of manufactured products (M_w) are assumed to be dependent on real income (Y), domestic prices (PD), prices of imported goods (P_w), tariffs (T_w) and pressure of domestic demand (Q):

$$(1) \qquad M_w = f\ (Y,\ PD,\ P_w,\ T_w,\ Q)$$

Traditional studies of import demand, such as H. Houthakker and S. Magee (1969), have considered two arguments basically in single, reduced-form equations: real income and a ratio of foreign to domestic prices. By relating variations in imported quantities to relative price changes, one is in accordance with basic demand theory, while at the same time constraining the effect of changes in domestic price to be equal to the effect of changes in the inverse of the price of foreign substitutes.

Improvements on the import demand function have considered the effects of tariffs and of the pressure of domestic demand [23]. The former are expected to influence imports in more or less the same way as prices and are justified in periods marked by significant changes in trade policies. The pressure of demand variable is designed to account for short-run or cyclical effects. It is expected that some local industries

are unable to respond to sharp increases in domestic demand during "peak"
periods, thereby pushing imports up. Once cyclical effects are convénien-
tly isolated, the income variable will pick up the long-run effects of
economic growth.

On the basis of preliminary statistical evidence, the double-
logarithmic functional form was adopted, with the price and tariff variables
lagged by one year:

$$(2) \qquad \ln M_{wt} = \alpha_0 + \alpha_1 \ln Y_t + \alpha_2 \ln Q_t + \alpha_3 \ln \left(\frac{P_W}{PD}\right)_{t-1}$$

$$+ \alpha_4 \ln T_{wt-1} + U_t$$

This form has the advantage of producing estimates of constant
elasticities on income, prices and tariffs. Furthermore, this largely
"unconstrained" form of the import function allows one to investigate
whether price and tariff elasticities are equal or not, a controversial
question in the literature (cf. Section 7.1 - d) [24].

The results of regressing equation (2) both with an unconstrained
form and constraining α_3 and α_4 to be equal are presented in Appendix D.
With a fair amount of certitude, one may assume henceforwards that tariff
and prices elasticities of import demand in Portugal have been identical.[38]
Consequently one will combine tariffs and relative import prices together
in one variable, for all stages of the present model structure [25]:

$$(3) \qquad\qquad R_w = \frac{P_W}{PD} \cdot T_w$$

The observations fall within the period from 1961 to 1980. We did
not want to "impose" the same relationship on every year within such a
large period, without questioning first its stability over time. Since
important changes occurred in trade and economic policies after 1975,
one might ask whether the model explaining import demand behaviour until
this date remained valid thereafter. To answer this question two different
procedures were followed. One consists of the usual F-test
which is designed to establish whether the
estimated coefficients remain stable throughout the whole period under
study. The second procedure consists in introducing a dummy variable
in equation (2), which takes value one for the years until 1974 (inclusive)
and zero afterwards. The purpose of this procedure is to verify whether

the intercept of the import demand function shifts significantly after 1975 in response to protective measures adopted in addition to the surcharge. So under this second procedure, we shall be evaluating the statistical significance of $\tilde{\alpha}_4$, on the basis of the usual T-test, in the following equation:

$$(4) \quad \ln M_{wt} = \alpha_0 + \alpha_1 \ln Y_t + \alpha_2 \ln Q_t + \alpha_3 \ln R_{wt-1} + \alpha_4 D + U_t$$

According to the evidence collected in Table D - 4, there does not seem to be a significant difference between the pre- and post-1975 periods in what concerns the explanatory power of the variables so far defined. On the other hand, $\hat{\alpha}_4$ proved to be statistically significant and positive, with a confortable margin of error (cf. Table IV.13A).

Therefore, we may conclude that, instead of interfering with the direct effects of income, cycle and prices on trade, the economic policy changes occurring after 1974 were responsible for a general downtrend in imports, due to their trade-inhibiting effects, either directly or indirectly.

10.1.2. Functions for the allocation of imports

The distribution of imports between two competing sources, i and j, is assumed to be determined by the following functions:

$$S_i = f_i (P_i, P_j, T_i, T_j, PD, Y)$$
(5)
$$S_j = f_j (P_i, P_j, T_i, T_j, PD, Y)$$

where S is the import share, P is the export price index and T_i and T_j stand for the indices of tariff rates applying to imports from sources i and j, respectively. If we assume that the Portuguese demand for imports has no influence upon the export price level of any supplier, i.e. that the supply of exports is perfectly elastic within the relevant range, then P_i stands also for the price of imports from the ith country group.

Therefore, the import share of a specific group is made dependent on its own import price (including tariff) and on that of its direct competitor, a normal assumption in trade models inspired in the theory

of demand (P.Armington, 1969). We depart from this kind of models by
adding two more explanatory variables: income and domestic prices. By
including the latter, we are allowing for a variable substitutability
between domestic and foreign goods, according to the specific source of
the latter. If, for instance, the goods imported from source i are
highly competitive in relation to local ones, whereas those imported
from j are not, a rise in the domestic price level, ceteris paribus,
will have positive effects on the import share of country group i at
the expense of j's share.

Income was not considered explicity as a variable in Resnick and
Truman's share equations. Its influence will be significant if the
product compositions of the competing sources are different enough, so
that their average income elasticities of demand are different (cf.
E. Leamer and R. Stern, 1971) [26/]. We left the question of whether the
final specification included the income variable or not as an empirical
problem to be solved by the use of the significance T-test, in each particular
case.

Tests of stability over time were performed for each share equation
in Stages II and III. The results of the tests using the F statistic are
presented in Appendix D. Only one equation in Stage IIIA (UK) presents
statistical evidence of a significant change in parameters after 1975.
Further investigation allowed us to conclude that until 1974 the direct
price effect would have been positive, which indicates a fall in non-
price competitiveness of British exports [27/].

The significance tests conducted on the change of intercept after
1975 confirmed the discriminatory effect of non-tariff barriers as
between "preferred" and "non-preferred" areas in Stage II, and among the
"preferred" areas in Stage IIIA.

The question of the functional form could not be solved empirically
in the case of the share equations. Whereas the double-logarithmic
specification has the advantage of providing estimates of constant
elasticities, the linear specification of the model is more easily amenable
to econometric estimation. Certain constraints on the sum of the para-
meters in each Stage needed to be imposed on the double-logarithmic form,
while in the linear specification form they are immediate [28/].

Let us describe first the final version of the whole model after
performing all the necessary tests:

(6)

Stage I $\quad \ln M_w = \alpha_0 + \alpha_1 \ln Y + \alpha_2 \ln Q + \alpha_3 \ln R_w + \alpha_4 D + U_w$

Stage II $\begin{cases} S_p & = \beta_{10} + \beta_{11}R_p + \beta_{12}R_n + \beta_{13}Y + \beta_{14}D + U_p \\ \\ S_n & = \beta_{20} + \beta_{21}R_p + \beta_{22}R_n + \beta_{23}Y + \beta_{24}D + U_n \end{cases}$

Stage IIIA $\begin{cases} S_{eec} & = \gamma_{10} + \gamma_{11}R_{eec} + \gamma_{12}R_{efta} + \gamma_{13}R_{uk} + \gamma_{14}D + U_{eec} \\ \\ S_{efta} & = \gamma_{20} + \gamma_{21}R_{eec} + \gamma_{22}R_{efta} + \gamma_{23}R_{uk} + \gamma_{24}D + U_{efta} \\ \\ \\ S_{uk} & = \gamma_{30} + \gamma_{31}R_{eec} + \gamma_{32}R_{efta} + \gamma_{33}R_{uk} + \gamma_{34}D + U_{uk} \end{cases}$

Stage IIIB $\begin{cases} S_{sp} & = \delta_{10} + \delta_{11}R_{sp} + \delta_{12}R_{row} + \delta_{13}Y + U_{sp} \\ S_{row} & = \delta_{20} + \delta_{21}R_{sp} + \delta_{22}R_{row} + \delta_{23}Y + U_{row} \end{cases}$

Whithin each stage from II to IIIB, the equations are not independent, since the import shares sum to one and the error terms sum to zero across equations. This is because the total imports for each group -world, "preferred" or "non-preferred"- are defined in previous stages and imposed as a constraint, to be allocated among the elements of that same group. Therefore, the column sum of the coefficients on the same variable equals zero, and the sum of the constant terms equals one, within each Stage.

For instance, let us consider Stage II, where the income variable can be expressed as:

$$\frac{\partial S_p}{\partial Y} = \beta_{13}$$

But, since $S_n = 1 - S_p$,

$$\frac{\partial S_n}{\partial Y} = \frac{\partial}{\partial Y} (1 - S_p) = -\beta_{13} = \beta_{23}$$

As all coefficients of the variables are symmetric across equations:

$$S_p + S_n = \sum_{i=1}^{2} \beta_{i0} + \sum_{i=1}^{2} U_i$$

and $\sum_{i=1}^{2} \beta_{i0} = 1$

As a result of these adding-up properties, the last equation in each stage could be deleted in the estimation process, as it will not provide any further information about the estimated parameters. There is use, however, in the separate regression of the last equation in Stage IIIA (where there is more than two equations) in order to perform T-tests of significance.

10.1.3. Construction of the price variables

Details about the construction of each variable are supplied in Appendix D. The most serious problem in this field was related to the choice of proxies for the export price levels. The usual alternative lies between choosing unit value indices (UVI) or wholesale price indices (WPI).

In choosing UVI as a proxy for the export prices of Portugal's trade partners, we did not follow the standard procedure advised by R. Lipsey (1963) : to use WPI, on the grounds of actual price quotations being superior to mere divisions of value by quantity. While acknowledging this advantage, we emphasized the need to obtain good indicators of each country's price competitiveness on the domestic market [29]. As WPI contain many goods and services that do not enter international trade, they are inferior to UVI on this ground. Another claimed advantage of WPI is its being more frequently presented in disaggregated versions by national statistics than UVI. However, in our case, it is basically the lack of conveniently disaggregated domestic price statistics that prevent us from estimating the model (6) with a finer level of disaggregation. Furthermore, the process of homogenizing different national WPI at a disaggregated level is by no means straightforward [30].

In what concerns the choice of a proxy for the domestic price level, the difficulty is reduced, due to the apparent superiority of WPI over the implicit deflator of GNP. The former index excludes non-tradables that are contained in the computation of the deflator, and account is

taken of the difference between imported and domestic goods.

The export UVI of individual countries were averaged by the use of trade weights, in order to provide price values for the aggregate areas corresponding to Stage III. These in turn were averaged in order to construct the export price variables in Stage II. The trade weights used in this averaging process are represented by:

$$X_i = \frac{M_i}{M_p} \qquad \text{where } i = \text{eec, efta and uk}$$

(7)   or

$$X_j = \frac{M_j}{M_n} \qquad \text{where } j = \text{sp, row}$$

and M represent import values in 1972.

Finally, the aggregate export price variable P_w in Stage I was obtained from the averaging of P_n and P_p, with trade weights:

$$(8) \qquad Z_i = \frac{M_i}{M_w} \qquad \text{where } i = p, n$$

Therefore,

$$(9) \qquad W_i = Z_i \cdot X_i = \frac{M_i}{M_w} \qquad \text{where } i = \text{eec, efta, uk, sp and row}$$

The same trade weights and procedure were adopted in order to calculate tariff indices by source areas.

10.2 Discussion of final results

The results presented in Table IV.12 (A) were not obtained directly with OLS regression. Heteroscedasticity tests performed on the original regression residuals revealed an heteroscedastic pattern associated to the size of the price-tariff variable, as in the following equation:

$$|\hat{U}_{wt}| = 0.0348 + 0.5515 \, (R_{wt-1})^2$$
$$\qquad (4.096) \qquad (1.991)$$

The figures between brackets indicate T -statistics, and as both reveal significant sizes at a 5% level, it was decided to use the square root of this expression as a common deflator for Stage I variables. In comparison to the original regression, the WLS regression presented in Table IV.12 (A) showed improved standard deviations.

The results obtained are generally in accordance with expectations. Manufactured imports are quite elastic in response to income growth, which is to expect, given the country's stage of industrial development. Extreme points of economic activity cycle seem to influence real imports in the expected direction. Given the high level of aggregation, the low estimate for the price-cum -tariff elasticity is, not entirely surprising. A large share of Portugal's manufactured imports consists of products that have no direct substitutes in domestic production, e.g. machinery and base chemicals. Therefore, their imports are not sensitive to the ratio of their prices to domestic prices.

Greater disaggregation of imports would reduce the aggregation bias and raise the price elasticity for some industrial branches where the structures of domestic production and of imports are more similar.

Furthermore, the use of annual instead of quarterly observations may also be partly responsible for a downward bias in the price elasticity estimate, as the relative evolution of domestic and foreign prices tends to be flattenned over longer periods. An exogenous increase in the domestic price level tends to be compensated by devaluation, and an exogenous increase in foreign prices tends to be passed on to domestic price through "imported inflation". Annual regressions cannot capture the effects of temporary disequilibria in relative prices upon foreign trade.

Finally, the $\hat{\alpha}_4$ estimate confirms a very substantial import-inhibiting effect of post 1974 policies, as referred above.

The results obtained for Stage II equations are presented in Table IV.12 (B), and they are interesting for several reasons.

Although not significant, the direct and cross price effects hold the expected signs. Their small size indicate weak substitutability between imports from EEC and EFTA combined and other imports. This is a result of fundamental importance for our purpose, as it shows that one should not expect a very substantial external effect (either trade diverting or trade creating) of tariff arrangements between Portugal and its Western European partners.

Table IV. 12

Multi-stage time-series model for import demand - final results

(A) Stage I equation

Dep. variable	Constant	ln Y	ln Q	ln R_w	D	$\overline{R^2}$	D.W.
ln M_w	.0464* (.0291)	1.426*** (.0981)	.0059* (.0036)	-.377** (.212)	.168*** (.0475)	.978	1.8

(B) Stage II equations

Dep. variable	Constant	R_p	R_n	Y	D	$\overline{R^2}$	D.W.
S_p	.923*** (.111)	-.137 (.137)	.14 (.155)	-.13*** (.0488)	.0228* (.0158)	.875	1.06
S_n	.077 (.111)	.137 (.137)	-.14 (.155)	.13*** (.0488)	-.0228* (.0158)	.875	1.06

(C) Stage III A equations

Dep. variable	Constant	R_{eec}	R_{efta}	R_{uk}	D	$\overline{R^2}$	D.W.
S_{eec}	.558*** (.0613)	-.307** (.153)	.314** (.164)	.0826 (.0954)	-.0124 (.0264)	.684	1.47
S_{efta}	.291*** (.0408)	.3*** (.102)	-.381*** (.109)	-.037 (.0635)	-.0461*** (.0176)	.608	1.8
S_{uk}	.1508*** (.0523)	.0073 (.131)	.0671 (.14)	-.0457 (.0814)	.0585** (.0225)	.662	1.06

Table IV.12 (Continued)

(D) Stage III B equations

Dep. variable	Constant	R_{sp}	R_{row}	Y	$\overline{R^2}$	D.W.
S_{sp}	-.0185 (.127)	-.0901 (.162)	.185 (.207)	.223*** (.0484)	.717	1.71
S_{row}	1.0185*** (.127)	.0901 (.162)	-.185 (.207)	-.223*** (.0484)	.717	1.71

Notes: Standard deviations between brackets (***), (**) and (*) indicate 1%, 5% and 10% levels of significance respectively for a two-tail test. The observations for Stage III B fall within the period 1966-80.

The income coefficient is negative in the equation describing the import share of EEC & EFTA countries,, which may indicate a smaller than average income elasticity of import demand for products originating in these areas. However, as the income variable is strongly "trended", the same coefficient may indicate also a loss in non-price competitiveness of these areas in relation to some non-European competitors (e.g. Japan).[39/]

Finally, the significant size of the dummy variable seems to indicate that the effect of the non-tariff barriers adopted after 1974 was not entirely non-discriminatory. Their effects have affected imports from EEC and EFTA countries to a larger extent than imports from "non-preferred" sources. Two possible explanations may be afforded in this connection.

Firstly, the share of products protected with quotas and the surcharge is higher than average for a large number of EEC and EFTA countries, as we saw above in Chapter 3. This reflects the larger share of final consumption products in their respective structures of exports to Portugal. Secondly, we cannot discard the possibility that, in using the discretionary power of granting import licenses, or in listing products subject to quotas or the import surcharge, authorities had an intention to afford specific protection to firms or branches more openly exposed to competition from EEC and EFTA producers.

The results that we obtained in Stage II regressions help to clarify some issues raised during the discussion of the results in Chapter 9. With the gravity model, we were unable to detect a   substantial diversion of trade from m. f. n. countries to EEC and EFTA throughout the period 1971/82, despite the apparently high value of the tariff preferences granted. In the face of the present results, three concurrent explanations to this absence of trade diversion can be afforded:

  i)   Low substitutability between imports of different sources.
  ii) Higher income-elasticity (or gains in non-price competitiveness) associated to exports from "non-preferred" sources.
  iii) Discriminatory impact of non-tariff barriers, in a way that affected most severely imports from EFTA and EEC members.

In Stage III A equations, the income parameter did not show statistical significance, which indicates similar income-elasticity of import demand as between goods of the three "preferred" sources. Non-tariff barriers seemed to have affected most severely imports from the UK. However, their declining trend throughout the whole period 1961-80 may have been due to other causes, namely a long-term loss in non-price competitiveness. This factor may also explain why the size of price effects is. so low in the case of the UK, in face of seemingly more relevant determinants of the behaviour of manufactured exports to Portugal. In the present context it is not possible to "split" $\hat{y}_{34}$ into the effects of these two likely factors. We can not exclude however the possibility that the effect of non-tariff barriers has been present too, given the relatively high share of machinery and equipment in Portuguese imports from the UK.

The results that were obtained in regressing Stage III B equation (Table IV.12 - D.) indicate low price substitutability between imports from Spain and from other "non-preferred" sources, non-discriminatory effect of NTBs relative to their respective shares, and a strongly positive effect of income growth on Portuguese imports from Spain. During the period under analysis there was no differential tariff treatment between Spanish and other m.f.n. sources. As export prices usually vary very little between themselves, the price coefficients are low, and most of the equations' explanatory power lies in the income variable.

It was not entirely expected that income growth has favoured the Spanish import share to such a large extent. Within the r.o.w. group, we have included countries, like Japan and the n.i.c.s , which are recognized

as having benefited generally from gains in non-price competitiveness.
Besides, factors that are associated to income growth, as diversification
of consumption patterns and of business links, should be responsible for
a faster growth of imports from far distant countries relative to a
neighbouring country like Spain.

From the results we may conclude that Spanish exports to Portugal
have not only managed to share these two characteristics with other
countries [31], but also seem to be concentrated in high income-elasticity
goods. This is a point of interest, for assessing the future impact of
Spanish membership of the EEC on mutual trade.

10.3 Tariff elasticities of import demand

Our first output from the model just described consists in the
computation of direct and cross tariff elasticities with respect to imports
from each of the trade areas considered. Since a linear functional form
was adopted for the share equations, the elasticity values are variable
across different years.

Each elasticity was computed for two different years: 1972 and 1980.

Now, we are going to construct quantifiable expressions for each
elasticity, with respect to the estimated parameters in the model described
in (6).

Let us start by the direct tariff-elasticity, ε_i where i = eec,
efta, uk, that measure the relative change in imports from "preferred"
source i, in response to a one percent change in the tariff index applying
to that same source.

We may recall that:

$$\frac{\partial M_i}{\partial T_i} = \frac{\partial}{\partial T_i} \left(M_w \frac{M_p}{M_w} \frac{M_i}{M_p} \right) = \frac{\partial}{\partial T_i} \left(M_w \, S_p \, S_i \right)$$

By the multiplicative and composite function rules, we have:

$$(10) \quad \frac{\partial M_i}{\partial T_i} = \frac{M_i}{M_w} \frac{\partial M_w}{\partial T_i} + M_w \, S_i \frac{\partial S_p}{\partial T_i} + M_p \frac{\partial S_i}{\partial T_i}$$

We know that the same trade weights were used for the construction of the aggregate price and tariff variables. Therefore, from (9) we may express the average tariff index for imports from any source as:

(11) $\quad T_W = \sum_i W_i T_i \qquad$ where i = eec, efta, uk, sp and row

and from (7) we may express the average tariff index for imports from the "preferred" or the "non-preferred" group as:

$$T_p = \sum_i X_i T_i \qquad \text{where } i = \text{eec, efta, uk}$$

(12) or

$$T_n = \sum_j X_j T_j \qquad \text{where } j = \text{sp, row}$$

Due to (3) and (11), the first member in the RHS of (10) may be transformed into:

(13) $\quad \dfrac{M_i}{M_W} \dfrac{\partial M_W}{\partial T_i} = \dfrac{M_i}{M_W} \dfrac{\partial M_W}{\partial R_W} \dfrac{\partial R_W}{\partial T_W} \dfrac{dT_W}{dT_i}$

And because $\hat{\alpha}_3 = \dfrac{\partial \ln M_W}{\partial \ln R_W} = \dfrac{\partial M_W}{\partial R_W} \dfrac{R_W}{M_W}$

(13) may be transformed into:

$$\hat{\alpha}_3 \quad \dfrac{M_i}{R_W} \dfrac{\partial R_W}{\partial T_W} \dfrac{\partial T_W}{\partial T_i}$$

As $\dfrac{\partial R_W}{\partial T_W} = \dfrac{P_W}{PD} \qquad$ and $\dfrac{\partial T_W}{\partial T_i} = W_i$,

we may finally express the first member in the RHS of (10) by:

(14) $\quad \hat{\alpha}_3 \quad \dfrac{M_i}{T_W} \quad W_i \qquad$ where W_i is defined as in (9)

The second member may be expressed as follows, due to (3) and (12):

$$(15) \qquad M_w \, S_i \, \frac{\partial S_p}{\partial T_i} = M_w \, S_i \, \frac{\partial S_p}{\partial R_p} \, \frac{\partial R_p}{\partial T_p} \, \frac{\partial T_p}{\partial T_i}$$

It immediately follows then, that the second member in the RHS of (10) may be written:

$$(16) \qquad \hat{\beta}_{11} \, M_w \, S_i \, \frac{P_p}{PD} \, X_i$$

where X_i is defined by expression (7).

Finally, the third member may be expressed as follows:

$$M_p \, \frac{\partial S_i}{\partial T_i} = M_p \, \frac{\partial S_i}{\partial R_i} \, \frac{\partial R_i}{\partial T_i} =$$

$$(17) \qquad = \hat{\gamma}_{ii} \, M_p \, \frac{P_i}{PD}$$

Joining together (14), (16) and (17), and recalling that

$$\varepsilon_i = \frac{\partial M_i}{\partial T_i} \, \frac{T_i}{M_i}$$

we obtain the following expression for the <u>direct</u> tariff elasticity of imports from any "preferred" partner:

$$(18) \qquad \varepsilon_i = T_i \left[\frac{\hat{\alpha}_3 \, W_i}{T_w} + \frac{\hat{\beta}_{11} \, X_i}{S_p} \left(\frac{P_p}{PD} \right) + \frac{\hat{\gamma}_{ii}}{S_i} \left(\frac{P_i}{PD} \right) \right]$$

Now let us find an equivalent expression for the direct tariff elasticity of imports from any "non-preferred" partner. Letting j = Sp, row, and following an identical process of deduction we may easily arrive to:

$$(19) \qquad \varepsilon_j = T_j \left[\frac{\hat{\alpha}_3 \, W_j}{T_w} + \frac{\hat{\beta}_{22} \, X_j}{S_n} \left(\frac{P_n}{PD} \right) + \frac{\hat{\delta}_{jj}}{S_i} \left(\frac{P_j}{PD} \right) \right]$$

The _cross_ tariff elasticity of import demand can be defined as the relative change in imports from source area $\underline{i}$ in response to a one percent change in the tariff index applying to imports from source area k. Let us assume, to start with, that i,k = eec, efta and uk, and that $i \neq k$. Then we want to find a quantifiable expression for

$$(20) \qquad \eta_{ik} = \frac{\partial M_i}{\partial M_k} \frac{T_k}{T_i}$$

The following chain of operations is now self-evident:

$$\frac{\partial M_i}{\partial T_k} = \frac{\partial}{\partial T_k} (M_w \, S_p \, S_i) =$$

$$= \frac{M_i}{M_w} \frac{\partial M_w}{\partial T_k} + M_w S_i \frac{\partial S_p}{\partial T_k} + M_p \frac{\partial S_i}{\partial T_k} =$$

$$= \frac{M_i}{M_w} \frac{\partial M_w}{\partial R_w} \frac{\partial R_w}{\partial T_w} \frac{\partial T_w}{\partial T_k} + M_w S_i \frac{\partial S_p}{\partial R_p} \frac{\partial R_p}{\partial T_p} \frac{\partial T_p}{\partial T_k} + M_p \frac{\partial S_i}{\partial T_k} =$$

$$= \hat{\alpha}_3 \frac{M_i}{T_w} W_k + \hat{\beta}_{11} M_w S_i \frac{P_p}{PD} X_k + \hat{\gamma}_{ik} M_p \frac{P_k}{PD}$$

Because of (20),

$$(21) \qquad \eta_{ik} = T_k \left[\frac{\hat{\alpha}_3 \, W_k}{T_w} + \frac{\hat{\beta}_{11} X_k}{S_p} \frac{P_p}{PD} + \frac{\hat{\gamma}_{ik}}{S_i} \frac{P_k}{PD} \right]$$

If i = eec, efta, uk and j = sp, row, η_{ij} would measure the impact of a change in a "non-preferred" area's tariff upon imports from any of the "preferred" partners:

$$(22) \qquad \frac{\partial M_i}{\partial T_j} = \frac{M_i}{M_w} \frac{\partial M_w}{\partial R_w} \frac{\partial R_w}{\partial T_w} \frac{\partial T_w}{\partial T_j} + M_w S_i \frac{\partial S_p}{\partial R_n} \frac{\partial R_n}{\partial T_n} \frac{\partial T_n}{\partial T_j}$$

There are only two members in the RHS of (22), because there is no direct effect of the tariff on j's imports upon i's imports in the model specified by (6).

·As

$$\frac{\partial M_i}{\partial T_j} = \bar{\alpha}_3 \frac{M_i}{T_w} W_j + \hat{\beta}_{12} M_w S_i \frac{P_n'}{PD} X_j$$

(23) $\eta_{ij} = \frac{\partial M_i}{\partial T_j} \frac{T_j}{M_i} = \bar{T}_j \left[\frac{\hat{\alpha}_3 W_j}{T_w} + \frac{\hat{\beta}_{12} X_i}{S_p} \frac{P_n}{PD} \right]$

Symmetrically, we may define η_{jk} where j, k = sp, row and j ≠ k

(24) $\eta_{jk} = \frac{\partial M_i}{\partial T_k} \frac{T_k}{M_j} = T_k \left[\frac{\hat{\alpha}_3 W_k}{T_w} + \frac{\hat{\beta}_{22} X_k}{S_n} \frac{P_n}{PD} + \frac{\hat{\delta}_{jk}}{S_j} \frac{P_k}{PD} \right]$

and

(25) $\eta_{ji} = \frac{\partial M_i}{\partial T_i} \frac{T_i}{M_j} = T_i \left[\frac{\hat{\alpha}_3 W_i}{T_w} + \frac{\hat{\beta}_{21} X_i}{S_n} \frac{P_p}{PD} \right]$

where j = sp, row   and i = eec, efta, uk

Let us first examine the matrix of tariff elasticities of import demand for manufactured products that was computed in year 1980. Direct tariff elasticities, that are represented in the main diagonal of the matrix, suggest a rather low sensitivity of import demand in respect of changes in tariff policy. Only one source of imports - EFTA(5) - is charac- terized by a tariff elasticity higher than one in absolute value . Manu- factured imports from all other sources are inelastic in respect of tariff changes, although their respective elasticities hold the expected negative sign. The same reasons that explain why the price parameters are so low hold in this case : aggregation bias, flattenning effect of annual observ- ations and low substitutability.

The relatively high sensitivity of imports from EFTA countries may be explained by their small share in Portuguese manufactured imports when the process of tariff removal began in the early sixties. This con- firms Armington's conclusion that price and tariff elasticities tend to decline with the actual share of the respective supplier in the domestic

Table IV. 13

Direct and cross tariff elasticities of import demand: 1972 and 1980

		Partial elasticity of demand for imports from the area listed vertically with respect to a change in the tariff applying to the area listed horizontally				
		EEC	EFTA	UK & DK	SPAIN	R.O.W.
EEC	1972	-.8313	.4186	.0341	.0332	.0734
	1980	-.6853	.3628	-.001	.0322	.0897
EFTA	1972	1.4423	-2.0126	-.344	.0332	.0734
	1980	1.7142	-2.7742	-.4229	.0322	.0897
UK & DK	1972	-.2506	.1747	-.3248	.0332	.0734
	1980	-.2319	.3274	-.4443	.0322	.0897
SPAIN	1972	.2889	.0796	.1301	-.582	.0278
	1980	.107	.0332	.0529	-.426	.1281
R.O.W.	1972	.2889	.0796	.1301	-.1396	-.9182
	1980	.107	.0332	.0529	-.0352	-.6443

Notes: The elasticities in the row marked "1972" were computed using 1972 prices, price weights, tariffs and shares; those in the row marked "1980" were computed using prices, tariffs and shares, but not price weights for that year.

market.

Out of the 20 cross elasticities, 2 hold negative signs, 12 are smaller than 0.1 in absolute values, and among the remaining 6 only 1 is higher than one. On a priori grounds, there is no reason why the cross tariff elasticity of import demand should not take negative values. In equations (21) and (23) to (25), one positive term coexists with one or two negative terms. This means that the substitution effect of an increase in the tariff applying to area i upon the imports from area j has to be weighed against the trade-reducing effect of an increase in the average tariff falling on the aggregate to which both areas i and j belong. The two negative cross elasticities are related to trade with

the UK, which was described earlier as practically insensitive to tariff changes in respect of its more direct competitors in EEC and EFTA.

The response of imports from EFTA to changes in the tariff rate falling on EEC manufactures is rather elastic. This contrasts with the inelastic behaviour of imports from the EEC in response to changes in the tariff applying to EFTA products. This differentiated behaviour can be explained on the grounds that Portuguese imports from the EEC represent a much larger share of total imports and consist of more "essential" products (i.e. they comprise a greater proportion of intermediate goods and equipment) than those from EFTA .

The cross elasticites involving a "preferred" and a "non-preferred" area simultaneously are very small. Future tariff cuts with respect to countries not belonging to either the EEC or EFTA are therefore likely to raise trade-creating effects to a much larger extent than trade-diverting ones, as a net general outcome.

The comparison between 1980 and 1972 values does not bring major changes, or indeed suggests regular trends. This is a consequence of the fact that the average rate of nominal protection has followed a more or less regular course throughout the period, as the decline in tariff rates was compensated to some extent by the introduction of the import surcharge. And, as we saw earlier, there is not enough evidence of the restrictive policy adopted after 1975 having affected significantly the size of the tariff-cum-price elasticities.

10.4. Ex post estimation of trade effects

By now it should be clear that three different trade policies were in operation simultaneously between 1972 and 1980:

i) Introduction or reinforcement of non-tariff barriers, such as import licensing, global quotas, discriminatory import credit and State subsidies with protective purposes.

ii) Imposition of an import surcharge.

iii) Tariff removal vis-à-vis imports from the EEC and EFTA, as a consequence of the engagements undertaken in the Free Trade Agreement and in the Stockholm Convention and their respective amendments.

The multi-stage time-series model allows for separate ex post estimation of the trade effects of each of these policies, separately for each source area and in any selected year. Ex post estimation, under the present assumptions, consists in computing the residual between the current value of imports, as determined on the basis of the model described in (6) with "true" tariff ratios, and the hypothetical value of imports as determined by replacing these with fictitious tariff ratios and by manipulating the value of the dummy variable that describes the effects of non-tariff barriers other than the import surcharge. These hypothetical values represent simulations of the alternative trade situations that would arise if some combination of trade policies i) to iii) or any individual policy had not been actually implemented.

There are many interesting possibilities to explore in ex post estimation, as the model allows for joint consideration of more than one policy simultaneously. In what follows, we shall consider the following trade effects:

(A) Trade erosion effects caused by policy i). To this purpose the dummy variable must be set equal to one and the resulting imports compared to their actual current value.

(B) Trade erosion effects caused by policy ii). The vector of tariff ratios must be rearranged so that the import surcharge is deducted from the average rate of nominal protection. The effects are then computed as the difference between actual and hypothetical imports.

(C) Trade erosion effects caused by policies i) and ii) simultaneously.

(D) "Pure" trade creating and trade diverting effects arising from the Free Trade Agreement with the EEC, in the current context of trade restrictions. The average tariff levied on products from the EEC (excluding the UK and Denmark) must be set equal to the m.f.n. rate, and the aggregate tariffs rearranged accordingly.

(E) The same as (D), but now in an hypothetical context where NTBs would not be imposed very differently from what they were back in 1973. To the purpose of computing these effects, the surcharge must be deducted and the effect of NTBs eliminated, whereas EEC products are assumed to be

treated like any other imports subject to the m.f.n. rate. The resulting imports are then compared to the results obtained under hypothesis (C).

(F) Trade creating and trade diverting effects arising from the present state of preferential trade policy, in the current context. The situation to simulate consists in treating all suppliers alike in terms of the m.f.n. rate, and its outcome must be compared to actual imports.

The following procedure was used in conducting the policy simulations. First, the "true" tariff-cum-price vector and the vector after adjusting for the changes described from (A) to (G) were computed using the 1972 trade weights employed in constructing the original export price indices. When the purpose is to simulate a policy alternative that excludes the use of new NTBs the intercepts of the relevant equations were changed by setting D equal to one. Second, the model was simulated by starting with the total import equation. After the calculations were complete, the estimated levels of total imports in real terms were multiplied by the estimated shares from the rest of the world. The difference between the two predicted real import values, obtained with "true" and adjusted tariff ratios was then computed as the estimate of the impact of the tariff changes under examination, in real terms, 1975 prices. Finally, to obtain the estimates in current prices, the real estimates were "inflated" by the respective price indices, starting at the more disaggregated level. The aggregate current estimates were then obtained by simple summation across source areas.

This procedure ensures that the change in total imports is allocated among the alternative sources of supply along with the reallocations based upon the changes in shares.

Let us first find an expression for the change in total imports that is associated with an adjustment in the average tariff ratio. According to the import equation in Stage I (cf. the model structure described above in (6)), and indicating adjusted values with an asterisk, we may represent the residual between total and hypothetical imports as follows (i.e. assuming that the error term is uncorrelated with the relative price-cum-tariff variable):

$$\ln M_w - \ln M_w^* = \hat{\alpha}_3 (\ln R_w - \ln R_w^*)$$

$$\ln \left(\frac{M_w}{M_w^*} \right) = \hat{\alpha}_3 \ln \left(\frac{T_w}{T_w^*} \right)$$

Therefore,

(26) $\qquad M_w^* = M_w \left(\frac{T_w}{T_w^*} \right)^{-\hat{\alpha}_3}$

If we had wanted to simulate simultaneously the elimination of NTBs, we should assume D = 1 in the total import equation, and compute the following expression instead of (26):

(27) $\qquad M_w^* = M_w \left(\frac{T_w}{T_w^*} \right)^{-\hat{\alpha}_3} e^{\hat{\alpha}_4}$

Let us now consider a change in the import shares as determined by the equations in Stage II, after inserting a distorted tariff vector:

$$S_p - S_p^* = \hat{\beta}_{11} (R_p - R_p^*) + \beta_{12} (R_n - R_n^*)$$

which is equivalent to:

(28) $\qquad S_p^* = S_p - \hat{\beta}_{11} \frac{P_p}{PD} (T_p - T_p^*) - \hat{\beta}_{12} \frac{P_n}{PD} (T_n - T_n^*)$

Had the adjusted share of imports from preferred partners been defined so as to include the effects of the removal of non-tariff barriers, then the estimated coefficient of the dummy variable ($\hat{\beta}_{14}$) must be added to the RHS of expression (28). Obviously, we put:

$$S_n^* = 1 - S_p^*$$

We may obtain the adjusted shares as determined by the equations in Stage III in an identical fashion. For instance,

(29) $\qquad S_{eec}^* = S_{eec} - \hat{\gamma}_{11} \frac{P_{eec}}{PD} (T_{eec} - T_{eec}^*) - \hat{\gamma}_{12} \frac{P_{efta}}{PD} (T_{efta} - T_{efta}^*) -$

$\qquad\qquad - \hat{\gamma}_{13} \frac{P_{uk}}{PD} (T_{uk} - T_{uk}^*)$

Again, if S_{eec}^* is defined as to include the effects of an hypothetical removal of non-tariff barriers, then the term $\hat{\gamma}_{14}$ must be added to the RHS of (29). The expressions for the calculation of S_{efta}^* and of S_{uk}^* are derived in a similar way.

Table IV.14

Ex post estimates of trade erosion effects - 1980
(current prices, million US dollars)

	(A)	(B)	(C)	% of (C) in imports
World	959.4	170.5	1163.6	23.9
"Preferred" bloc	856.0	136.4	1024.1	28.1
"Non-preferred" bloc	103.4	34.1	139.5	11.3
EEC-6	482.0	52.9	544.2	22.4
EFTA-5	-90.5	66.3	-17.2	-3.4
UK + Denmark	464.5	17.2	497.1	70.7
Spain	35.4	3.2	38.5	9.1
Rest of the World	68.0	30.9	101.0	12.5

The total trade erosion effect caused by import restrictions i) and ii), and its distribution across source areas , were computed for the year 1980 [32]. On the basis of the evidence provided in Table IV.14, we may conclude in a straightforward manner that total manufactured imports would have been 24 percent higher in 1980 , i.e. an excess of US $ 1163.6 million in current prices, if no additional non-tariff barriers had been raised relative to the situation prevailing until 1974. To this total, the import surcharge contributed US $ 170 million approximately; therefore the largest influence on trade erosion seems to have been that of less transparent trade restrictions [33].

The overall effect of non-tariff barriers can not be under-estimated. In 1980, the current balance deficit reached US $ 1070 million, which means that the full removal of such barriers would immediately have doubled it, under ceteris paribus conditions.

However, one should not ignore the relationship between direct trade restrictions and other alternative policy instruments in terms of external balance. Under a liberal trade scenario the decision to reevaluate the Escudo and reduce the rate of the crawling-peg during 1980 would have been entirely unwise;   instead one would expect a greater emphasis on devaluation in order to bring the deficit back to manageable proportions.

In face of these results we can not share the opinion currently held by Portuguese experts that the enforcement of the IMF stand-by agreement has shifted policy intervention from direct import restrictions to exchange rate and demand management policies [34/], as a means to reduce the external deficit. It seems more likely that both types of policy have been used with effective results, and that their relationship has been viewed as complementary rather than alternative. The average incidence of the surcharge reached its peak in 1977 (see Table I.9), when the Escudo suffered its strongest devaluation. In 1980, the surcharge rate fell to a minimum, whereas the effective exchange rate was raised in real terms by 0.2 percent (S. Lopes, 1983).

While the trade-inhibiting effect of post-1975 policies is undisputable, the quantified estimate of size is subject to some qualifications. The dummy variable's coefficient may have absorbed non-explicit influences upon the behaviour of import demand. Two of these deserve special consideration.

In the first place, the shift in domestic consumption from foreign to domestic goods may be due in part to a genuine improvement in non-price competitiveness of industries set up previously under import-substituting protectionism. This factor would not be picked up by the model's structure.

In the second place, the relative decline in imports may have been caused by structural changes in domestic expenditure occurring after 1974. As a result of greater State intervention, public consumption increased its share in total expenditure from 12.9 to 13.5 percent, between 1968/70 and 1978/80. While the overall investment ratio over expenditure does not show any noticeable trend in the long run, there is a constant rise of the share of public investment and construction at the expense of the share of expenditure in equipment (most of which consists of imported goods). However, this evolution can not be made totally independent of market distortions. As the public sector expands, there is a larger scope to promote mutual sales among public firms, independently of market considerations alone, and to adopt distorting procedures of public purchasing in the benefit of domestic bidders , especially in construction.

This discussion serves to stress the difficulties found in quantifying the effects of autonomous trade policies in periods marked by structural changes, and to cast doubts aboud the precise meaning of the estimates provided.

The distribution of trade erosion effects across source areas is very unequal. Almost the total impact was borne by the enlarged EEC, and in particular by the UK and Denmark. This suggests that Portuguese authorities had wished to avoid the liberalizing effects of the Free Trade Agreement on some ill-prepared domestic industries by resorting to a discriminatory management of direct restrictions. Also the different composition of imports affords some explanation. In 1971/73, the share of machinery in Portuguese imports from the EEC-6 and the UK was 55.4 and 53 percent, respectively, whereas the equivalent share in imports from EFTA was 43.3 percent [35]. Finally, we can not discard the possibility that the estimate of trade erosion affecting the UK includes some influence of the declining non-price competitiveness in the long run. In this connection, the negative sign of the (A) effect on imports from EFTA can not be interpreted as meaning a positive impact of direct restrictions.

Table IV.15

Ex post estimates of trade effects of preferences - 1980

(current prices, US $ million)

	(D)	%	(E)	%	(F)	%
Net trade creation	-114.3	-2.4	-155	-3.2	-205.9	-4.2
Gross trade creation	-230.3	-9.5	-291	-12.0	-240.3	-6.6
Trade diversion	+116.0	+4.8	+136	+5.6	+34.4	+2.8
- EFTA	+119.5	+23.8	+155	+30.7		
- UK+Denmark	-22.6	-3.2	-42	-6.0		
- Spain	+6.5	+1.6	+ 7	+1.7		
- R.O.W.	+12.5	+1.6	+16	+1.9		

Positive values indicate trade diversion, negative values indicate trade creation.

Above in Chapter 9, we saw how the introduction of non-tariff barriers are responsible for a smaller size of trade effects than expected. Now we can confirm this by comparing the results obtained under the assumptions (D) and (E). Net trade creation would have been US $ 41 million higher, and trade diversion US $ 20 million higher, in a situation close to that existing prior to 1974.

In the present context of trade restrictions, gross trade crea-
tion amounted to US $ 230.3 million (i.e. almost 10 percent of total manu-
factured imports from the EEC-6 in 1980). This was divided equally between
net trade creation and trade diversion. The former effect represented 2.4
percent of total manufactured imports from the world as a whole.

In comparative terms the effects of the restrictive policy have
largely dominated those of preferential agreements. In what concerns trade
with the EEC in particular, trade erosion (US $ 544.2 million) has far
exceeded gross trade creation (US $ 230.3 million). This result confirms
S. Lopes'assertion based on expost income elasticities of import demand
(cf. above, Table III.6).

Trade diversion induced by the EEC Agreement was almost totally
borne by the EFTA suppliers to Portugal. The extension of tariff prefer-
ences enjoyed under EFTA membership to EEC competitors on the Portuguese
market and the surcharge were rather more determinant to the performance
of EFTA countries' manufactured exports than licensing, quotas or other
"implicit" forms of protection.

The estimation of effect (F) confirms that the economic integra-
tion of Portugal in Western Europe is likely to raise beneficial static
effects. As trade diversion against other suppliers, not included either
in EFTA or in the EEC, is very reduced, due to low substitutability, the
effect of preferences granted to these two blocs together is mainly of
trade creating nature. Therefore, provided that no infant industries or
externality-generating sectors are injured by import liberalization, the
welfare impact of european integration, even on the import side, has to
be reckoned as beneficial.

10.5. Welfare effects

So far the results have been presented in terms of gross values
of trade created, eroded or diverted, without direct reference to changes
in real income. Because Portugal is a small economy, foreign supply or
demand curves can be considered to be perfectly elastic, which allows
for straightforward application of the "triangles method" to the estima-
tion of welfare effects. Of more difficult assessment is the extent to
which the assumptions of perfectly competitive markets studied in Chapters
4 and 7 can be said to hold generallly so as to validate our results.

10.5.1. The effects of import restrictions
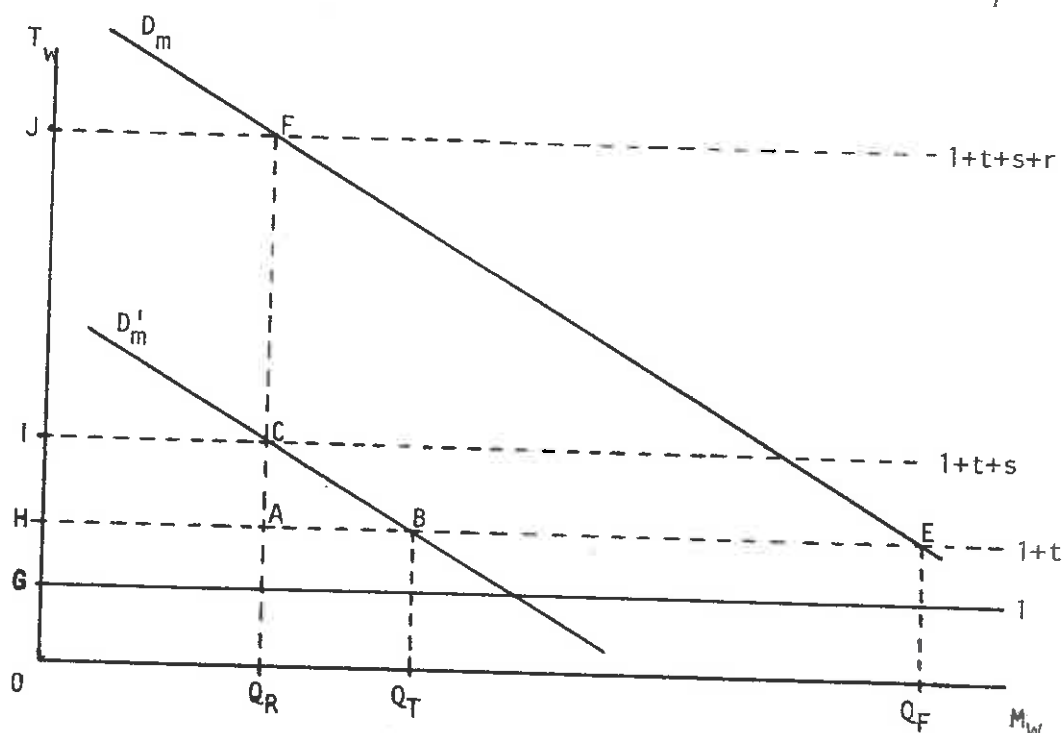
Figure IV.3

In this Figure, D_m and D'_m are assumedly linear and income-compensated import demand curves with identical slope. D_m corresponds to a trade situation free of "implicit" trade restrictions, whereas D'_m describes import demand subject to the effect of such restrictions. The average tariff rate is $\underline{t}$ and, under the assumption of perfectly elastic world supply, Portugal will import $\overline{0Q_T}$ in a situation where "implicit" trade restrictions are operative.

If a surcharge of rate $\underline{s}$ is levied on all imports, the domestic price will rise from $\overline{0H}$ to $\overline{0I}$, if the exemptions and reductions of the surcharge are assumed to act as rents to importers and not as subsidies. This assumption is justified by their frequent ex post nature, in the form of reimbursements. As a result, imports will be reduced to $\overline{0Q_R}$ and a static welfare cost will be borne by the economy as a whole, which can be measured by the triangle ABC or,

(30) $$W_s = 1/2 \left(\Delta M_w \, s \right)$$

As the import reduction due to the surcharge was computed in US $ 170 million and $\underline{s}$ was 10% in 1979 (tariff variables are lagged by one year), we admit that the cost of protection induced by the surcharge was US $ 8.5 million in 1980. The tariff elasticity of import

demand $\tilde{\varepsilon}_w$ that is implicit in the impact of the surcharge on imports can be computed in -0.354 $\underline{36/}$.

The tariff equivalent of "implicit" trade distortions is $\underline{r}$, which together with the surcharge, reduces imports from their hypothetical level $\overline{OQ}_F$ to $\overline{OQ}_R$. We may find an approximate measure of that tariff equivalent from the following expression, derived from the definition of tariff elasticity:

(31) $\Delta T_w = \dfrac{\Delta M_w}{M_w} \cdot \dfrac{T_w}{\tilde{\varepsilon}_w}$

ΔT_w is 0.57, on the basis of the values known for ΔM_w (US \$ 1160 million), M_w (US \$ 6030) and T_w (1.048). Therefore we may estimate the tariff equivalent of "implicit" trade distortions in 47%. The total protection cost is measured by the triangle AEF :

(32) $W_r = 1/2 \, (\Delta M_w) \, (s + r)$

The total cost of non-tariff distortions on trade can be therefore estimated in US \$ 330.6 million in 1980, which corresponds to 1.2 percent of Portuguese GDP .

The potential redistributive effects of these distortions can be measured by the areas HACI (the fiscal revenue plus rents due to exemptions) and ICFJ (scarcity rents earned by the holders of the import licenses). The value corresponding to area HACI amounts to US \$ 414 million. As the fiscal revenue from the import surcharge amounted to US \$ 100 million in 1980, we may conclude that approximately 75 % of the potential fiscal revenue was distributed in the form of rents. The area ICFJ is measured in US \$ 2289 million, but we can not atribute this total value to rents earned by import license holders. Administrative pricing and direct forms of supervision practiced in public firms with the purpose to reduce the inflationary impact of trade distortions should have brought the domestic price of many restricted importables much below the level $\overline{OJ}$. Direct comparison of domestic and international prices of importables is needed in order to perform a better evaluation of the redistributive and welfare effects of "implicit" trade distortions.

10.5.2. The effects of preferential trade policy

The allocation of imports by source areas can be described graphically according to our model's assumptions, as in Figure IV.4. The NE quadrant is identical to Figure IV.3. Total imports M_w are determined by

Figure IV.4
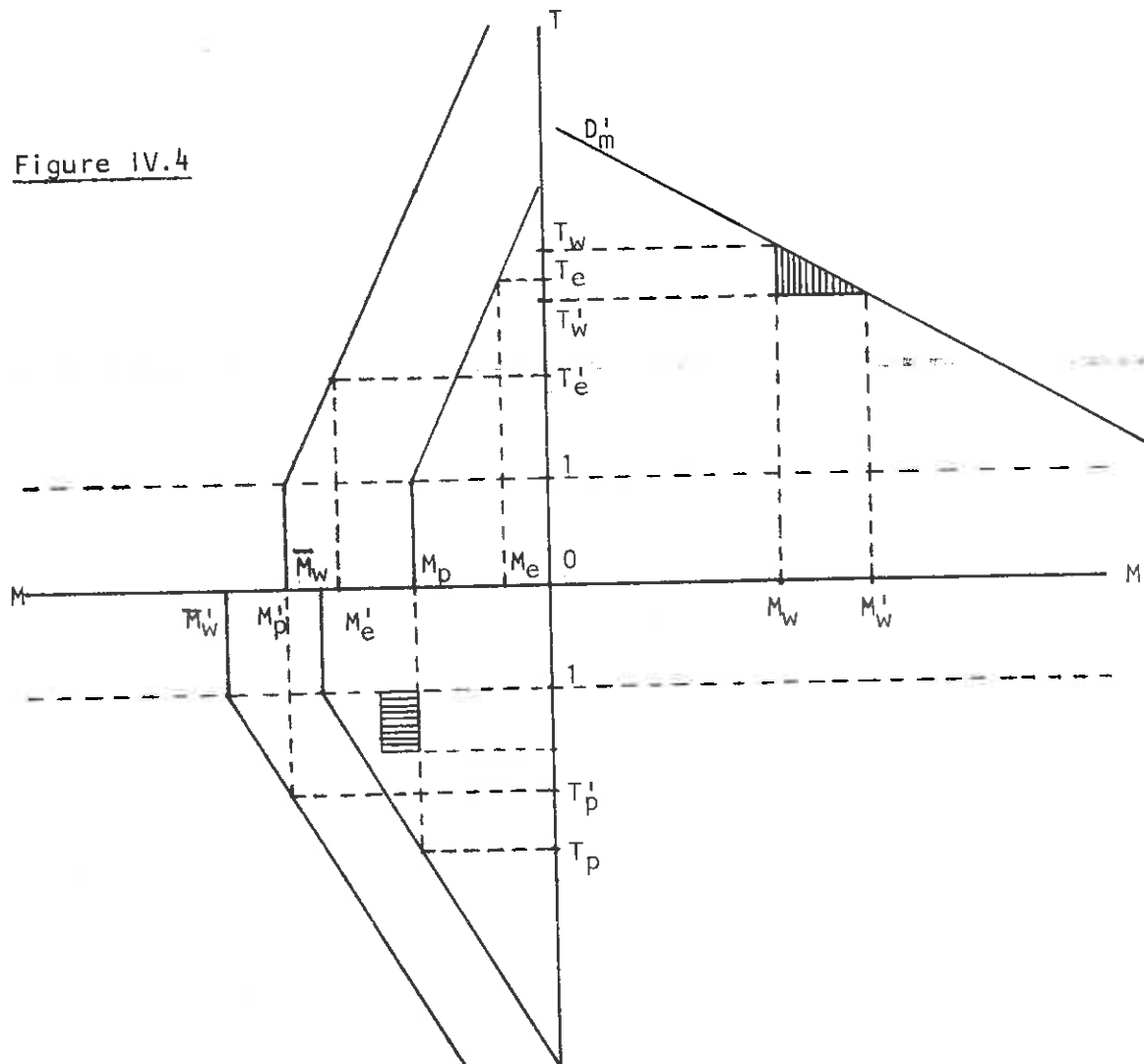
the average level of the import price, including the surcharge and the tariff rates, T_w= 1+t+s . Now, this is not the exogenous variable any more, but rather an average of rates applying to different source areas. If we consider t_e (the tariff rate levied on goods from the EEC) as the exogenous variable, and the other rates and trade weights as para- meters, any change will affect imports not only in total amount, but also their distribution by source areas.

Let us assume a fall in T_e to the level $\overline{OT_e'}$. This will induce a fall in the total average price to $\overline{OT_w'}$, and imports will be increased to $\overline{OM_w'}$. The allocation of total imports by competing areas is described in quadrants SW and NW where the slopes reflect the direct and cross price-cum-tariff effects in the import share equations. Total imports $\overline{OM}_w$ are allocated among "preferred" and "non-preferred" areas ($\overline{OM}_p$ and $\overline{M_p M}_w$ respectively) according to the average import price of "preferred" part- ners T_p . The fall in T_e will induce an increase in imports from "preferred"

sources to $\overline{OM_p'}$, due to increased total imports and to a greater share, corresponding to the new average price T_p'. Finally, in the NW quadrant, imports from "preferred" sources are allocated between the EEC and other sources, according to a similar mechanism. In the initial situation $\overline{OM_e}$ measures imports from the EEC, $\overline{M_e M_p}$ imports from other "preferred" sources, and $\overline{M_p \overline{M}_w}$ imports from "non-preferred" sources.

The fall in T_e will raise an expansion in imports from the EEC, that equals $\overline{M_e M_e'}$. This is "gross" trade creation, consisting in three different shares:

i) The first one corresponds to a net increase in total imports, $\overline{M_w M_w'}$, which is called <u>net trade creation</u>. It entails a positive welfare effect, represented graphically by the triangle in vertical stripes on the NE quadrant, and measured by:

$$(33) \qquad W_c = 1/2 \ (\Delta M_w) \ (T_w - T_w')$$

ii) The second share corresponds to a partial replacement for imports originally purchased from "non-preferred" sources, amounting to $\overline{M_p \overline{M}_w} - \overline{M_p' \overline{M}_w'}$. This is genuine <u>trade diversion</u>, entailing a negative welfare effect, equal to the value of previously collected customs revenue that is being used to pay for more expensive imports from the EEC. If $\overline{OK}$ is the EEC's export price, then this effect is represented by the rectangle in horizontal stripes, on the SW quadrant, and is measured by:

$$(34) \qquad W_d = \Delta M_n \ (K-1)$$

iii) The third share corresponds to a partial replacement for imports previously purchased from other "preferred" sources, and equals $\overline{M_e M_p} - \overline{M_e' M_p'}$. This is in fact <u>trade reversion</u>, that is neutral in terms of welfare impact, if the export price of alternative "preferred" sources is identical. However, if the EEC's export price is lower than the price to pay for competing goods, trade reversion will entail a positive welfare effect, corresponding to an improvement in terms of trade.

We are able to compute W_c in US \$ 4.2 million, but, since K is ignored, we can only estimate an interval of variation for the welfare measure of trade diversion. K will vary between zero and $(t_n - t_e)$, which amounts to 16%, respectively under the assumptions of maximal and minimal efficiency of EEC producers - above the 16% excess margin, EEC goods could not compete, even under preferential tariff treatment. Therefore, W_d will vary between zero and US \$ 3.2 million, when ΔM_n is estimated in US \$ 20 million.
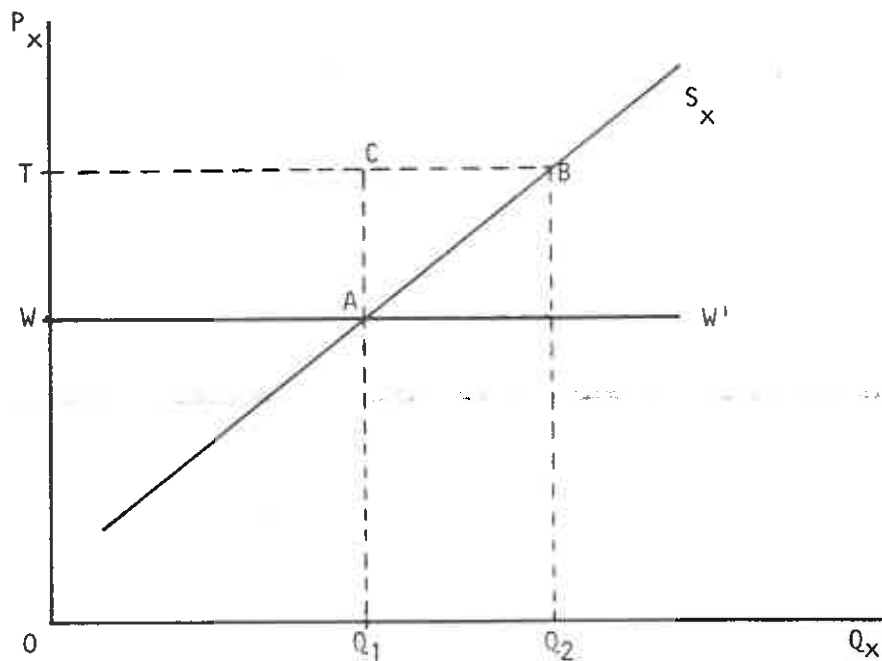
Figure IV.5

10.5.3. The effects of export expansion

The estimation of welfare effects due to export expansion can be easily performed in the partial-equilibrium context, when the foreign demand curve facing the exports of the preference-receiving economy can be assumed infinitely elastic (R. Pomfret, 1978). This is the case of small economies, such as Portugal.

In Figure IV.5, WW' is the foreign demand curve at world price $\overline{OW}$, $\overline{TW}$ is the CET rate applied by the EEC on third countries' exports, and S_x is the export supply curve of the preference-receiving economy. Without preferences, $\overline{OQ_1}$ of good x would be exported at the world price and customs revenue would be collected by the EEC in the amount WACT. When preferences are granted to a small supplier of good x, they will not affect the EEC'S domestic price, that will remain at $\overline{OT}$. Then, the preference-receiving exporters will be able to reap a price differential on their exports to the EEC equal to the CET rate. This foreign-supported export subsidy will expand exports to $\overline{OQ_2}$, in volume terms. The value of exports to the EEC will be consequently expanded from OQ_1AW to OQ_2BT.

The value difference between these two areas can not be identified with the net welfare gain of the preference-receiving economy. The area below the cost curve Q_1Q_2BA measures the domestic resource cost needed to produce additional exports under perfectly competitive conditions. There-

fore, the net welfare gain is the change in the producer's surplus, that
is represented by the area WABT. A share of this gain (WACT) corresponds
to customs revenue forgone by the EEC as a result of the tariff prefer-
ences. The net welfare gain can be measured by the expression:

$$(35) \qquad W_e = t (X_o + 1/2 \Delta X)$$

where $\underline{t}$ is the average CET rate for manufactured imports and X_o stands
for Portuguese manufactured exports to the EEC valued in world prices.
According to our earlier results, $t=0.085$ (cf. Appendix A), actual ex-
ports in 1980/82 were US $ 1208 million, in current prices, annual value,
and "gross" export expansion was estimated in US $ 513.8 million per
annum in current prices (cf. Table IV.4). After deflating by the tariff
rate, we obtain W_e = US $ 76.8 million. The price elasticity of export
supply that is implicit into these calculations is 7.1.

To accept this value as an appropriate measure of the change
in real income induced by export expansion amounts to assuming several
hypothesis, among which we may mention the following:

a) Resources must be fully employed in the economy. Other-
wise, the opportunity cost of additional labour or capital to be hired
in order to produce $\overline{Q_1 Q_2}$ of good x will be lower than its private cost.
Therefore, the social evaluation of the welfare gain will exceed the
change in producer's surplus.

b) Domestic market distortions related to the production or
consumption of good x, or to the wage payed for the services of the fac-
tors used in its production also make the social cost diverge from the
private cost evaluation. The net welfare gain will be greater in the case
of social utility or overvalued wages for the factor most intensely used,
and smaller, in the opposite case.

c) Additional resources for the production of $\overline{Q_1 Q_2}$ must be
obtained in other sectors of the economy. Otherwise, the exports of x
to third markets would be reduced, or/and the domestic price of x would
be raised in response to a shortfall in domestic supply. In any case,
welfare costs would arise, in the form of smaller currency earnings,
and/or smaller consumer's surplus domestically.

10.6. Simulation of the trade impact of EEC membership

In this section, it is our purpose to simulate how much would
Portugal import from each source area in 1980, if the country were already
a full member of a Community of Twelve [36/]. Here, we assume that zero

tariff rates would apply to imports from the EEC, EFTA and Spain, that
no import surcharge would be allowed, and that the CET average rate of
8.5 % would apply to imports from all non-member countries. Some flexib-
ility is left as to whether other types of trade barriers might be
allowed to continue . It is believed that the extent to which

state subsidies, import licensing, public purchasing with
distortive effects, discriminatory import credit, and other distortions
implied by the State's extensive ownership of capital, will continue to
operate   with import-inhibiting effects will be subject in the
future to intra-Community bargaining.

More or less strict rules exist at the Community level on
such fields as surveillance and complaining procedures in the case of
state subsidies and discriminatory public purchasing. Besides, import
licensing is expected to be resumed to "statistical record" only, as
from the date of accession. However, the current protectionist mood with-
in the Community may be used in the favour of eventual Portuguese claims
for a tolerant treatment of import barriers, especially in the case of a
rapidly deteriorating external balance. One may argue that, given the
current difficulties found in making progress towards a distortion-free
movement of goods inside the Community $\underline{37/}$, it will prove less costly,
from a policy-making point of view, to be tolerant vis-à-vis existing

Table IV.16

Ex ante estimates of trade effects from EEC membership - 1980
(current prices, million US dollars)

	Implicit distortions. allowed	%	Implicit distortions not allowed	%
World	230.1	4.7	1234.3	25.3
Enlarged E.E.C. a)	83.6	2.4	1092.9	30.7
E.E.C.-6	44.8	1.8	535.8	22.1
Spain	24.0	5.7	62.7	14.9
UK and Denmark	14.8	2.1	494.4	70.3
E.F.T.A.	72.7	14.4	-	-
R.O.W.	73.8	9.1	151.5	18.7

a) Greece and Ireland not included.

distortions, than to introduce new explicit import barriers (such as quotas and surcharges). Furthermore, examples of identical types of trade barriers erected by developed EEC members to avoid sectoral disturbances may always be used to support Portuguese views on this matter.

In the computation of ex ante trade effects from EEC membership (cf. Table IV.16), two extreme cases are considered. The first one assumes that all the "implicit" distortions would continue after accession as before; while the second one assumes their immediate and complete removal, thereby bringing the Portuguese economic policy context with a bearing on trade back to the pre-1975 situation.

The impact of tariff changes alone amounts to US $ 230 million, which represents 4.7 percent of the manufactured import bill. Total net trade creation is divided into two parts - internal and external - according to whether the source of imports is a member of the enlarged Community or not. The larger share of trade creation is external, which can be explained both by the higher tariff rates currently applied on imports from the r.o.w., and the higher than average sensitivity of imports to changes in tariffs vis-à-vis EFTA countries.

Given the exceptionally low level of current bilateral trade, one might expect a greater impact of tariff removal on imports from Spain. It is possible that the quite "flat" behaviour of the m.f.n. rate during the period of observation (bilateral tariff reductions started only in 1980) is responsible for a downward bias in the estimated price elasticity for Spanish products. But care must equally be taken as to excessive "fears" about the future penetration of these products in the Portuguese market. Trade liberalization towards Spain will occur simultaneously with other countries, some of which compete directly on a broad product range (such as the "newly industrializing countries").

The hypothesis that the accession to the EEC will mean a full return to pre-1975 liberalism entails a net trade creating effect evaluated in US $ 1243.3 million, or approximately one fourth of total manufactured imports. This increase is concentrated on trade flows originating in EEC partners (more than 80 percent).

Rather than a detailed schedule of trade variations occurring in the years immediately following accession, our results are useful in order to obtain a broad picture of the magnitudes that are likely to be involved in the adjustment process and the correspondent policy alternatives.

While the impact of tariff changes alone looks quite easy to absorb, at least at the macroeconomic level, especially if we view these as taking place over a seven-year transitional period, the impact of overall trade liberalisation is quite considerable and will inevitably generate adjustment difficulties, both at the micro and the macroeconomic levels. These difficulties are compounded by the fact that a transitional period was not considered for most "implicit" trade distortions, during the negotiations for EEC membership. Both sides will have considered the role of licensing and the surcharge as limited to temporary stabilization of the trade deficit.

One can not ignore either the role of income growth and of the business cycle. The adoption of expansionary policies during the period immediately following accession will be stimulated by a greater inflow of Community and private funds and the need to raise the investment ratio to speed up "restructuring". As the income elasticity of import demand is quite high (1.4) and the "peak" periods have a proved influence on the growth of imports, one may forecast for 1986-89 a higher relative impact of import liberalization than that estimated for 1980.

More important perhaps is the extent to which exchange rate policy may affect this outcome. The instrumental variable is PD, the domestic price level measured in US dollars. Our estimates indicate a rather low average elasticity (0.377) to changes in this variable. Therefore the efficiency of devaluation to curb import demand is quite limited. In order to reduce the hypothetical impact of full trade liberalization in 1980 by half, one would need to devaluate the Escudo in 33 percent. On the other hand, past policy experience, and our own estimate of the price elasticity of export supply to the EEC suggest that exchange rate policy may be quite efficient in terms of expanding exports.

Therefore, a realistic exchange rate policy, coupled with a more encouraging policy approach towards foreign direct investment, will avoid a foreign currency shortage. However, it will be relatively worthless to deal with eventually disruptive effects of trade liberalization in import-competing industries. Other policies (fiscal, trade, financial, sectoral programs) will have to contribute to avoid such effects, while not jeopardizing the expected benefits of EEC membership, both in terms of static welfare, and of long-term resource allocation.

NOTES OF PART IV

1/ A. M. El-Agraa and A. J. Jonès, 1981, p.8 fls.

2/ The increase in trade between partners due to the preferential agree-
ment would be measured in this case against an hypothetical situation
whereby the same agreement would produce only trade diverting effects
for a specified group of countries.

3/ Cf. H. Linnemann (1966), R. Stern and E. Leamer (1971) and B. Taplin
(1969).

4/ Cf. Verdoorn and Schwartz (1972) and Section 7.2. above.

5/ Cf. J. Donges et al. (1982, p.86) and A. Silva (1981, p. 79).

6/ Pulliainen (1963) suggested the use of the expression $(1 - C_i^o - C_j^o)$,
in which C_i^o and C_j^o are the long-range mean temperatures of countries
i and j, in order to measure inter-country differences in resource
endowments. The method seems to be specially relevant to analyse trade
flows involving commodities whose production is highly dependent on
climate or natural resources.

7/ A comparison between the results obtained with the present model and
those obtained with its previous version (A. Silva , 1985) suggests
important differences. These relate not so much to the general deter-
minants of the geographical distribution of trade, but specially to
the time path and relative differences of the preference coefficients.

8/ Examples of such models are the "Tobit" and the "Probit two-stage"
models. Cf. J. Tobin (1958), R. Bowden (1983) and G. Judge et al.
(1982).

9/ Cf. A. Krueger (1983, Ch. 8).

10/ Cf. Maddala (1977) and G. Judge et al. (op. cit.).

11/ Cf. A. Silva (1985).

12/ Cf. G. Maddala (op. cit. , p. 265).

13/ Between 1972 and 1978, the share of Portuguese exports transported by
sea declined from 77 to 62 percent, while the share of land transport
(by road and train) increased from 10 to 28 percent.

14/ There is no plausible reason to accept that the disturbances would be
eliminated in the case of trade relations with non-preferred partners.
A more satisfactory method to isolate individual country effects might
consist in including a bloc of individual dummy variables into the
main equation, as with seasonal effects in times-series regression.

15/ Another avenue for further research on the macroeconomic implications
of export expansion consists in determining the increase in output
and in employment that is caused by the change in final demand. This
task requires the manipulation of input-output tables according to
standard techniques.

16/ In the present methodology, the control group includes all the OECD
countries, except those that belong to the specific bloc whose pre-
ferences are being assessed. It is therefore wider than the control
group used by S. Lopes.

17/ Cf. A. Silva (1981).

18/ Cf. A. Courakis and F. Moura Roque (1984), for a temporal analysis of
the Portuguese trade pattern.

19/ According to the evidence provided in Appendix C, the replacement of
K by SX in the import equations would allow for a significant positive
impact of EFTA on imports. This is due to the fact that the relatively
capital-abundant endowment of EFTA economies will be picked up by the
specific preference dummy variable.

20/ However, an important role of the capital-labour ratio could only be
detected in imports of textiles, metallic products and miscellaneous
products, whereas a higher value than 0.3 for the Squared partial
correlation coefficient related to the export concentration variable
could only be found for machinery and transport equipment.

21/ Cf. D. Mayes (1981, Ch. 8) for a survey of these models.

22/ As in the so-called Rotterdam model, developed in Barten (1969). Cf.
also H. Theil (1971).

23/ Cf, among others, Adams et al (1969).

24/ For a similar investigation, cf. Th. Hitiris and Petoussis (1984).

25/ One might also constrain the income elasticity of import demand to
equal one and regress the share of imports in GDP on the other vari-
ables. While statistically acceptable on the basis of the F-test,
this alternative procedure was not judged convenient , because the
loss of explanatory power was poorly compensated by gains in reducing
multicollinearity.

26/ However, account must be taken of the possibility that the income
parameter captures other influences on import shares, such as the
long-term evolution of non-price competitiveness.

27/ In order to carry out this investigation, we introduced new terms
DR_i into the equation describing the determinants of the UK import
share together with the usual price varibles R_i as defined in (3),
where D takes value one during the period from 1961 to 1974, and zero
afterwards. Whereas the direct price term for the most recent period
shows expected sign and size, that for the earlier period is positive.
This was attributed to the falling non-price competitiveness of Brit-
ish manufactured goods throughout the same period during which tariffs
in Portugal were removed vis-à-vis EFTA countries.

28/ For a development of the double-logarithmic form of the share equations,
cf. H. Theil (1971).

29/ We are aware of the fact that published UVI for a specific country do
not reflect the same commodity composition as that country's exports
to Portugal, and therefore it is an imperfect proxy for competitiveness.

3o/ As an example of the difficulties and limitations found in such a process, cf. J. Mc Nulty (1975).

31/ Due to cultural and institutional factors, the degree of economic integration between Portugal and Spain has been surprisingly low, despite their neighbourhood. For a study of the economic relations between the two countries, cf. J. Donges and K. W. Schatz (1985).

32/ The same calculation was carried out for year 1977, with very similar results, in real terms.

33/ The cumulative effect of the surcharge and the "implicit" distortions (C) exceeds the sum of their separate effects (A) and (B), because the partial tariff elasticities are not constant.

34/ Cf. the Reports of the Bank of Portugal, recent issues, and S.Lopes (1983), among others.

35/ There are reasons to believe that imports of equipment have been more seriously affected than the average, not only because of the changing composition of investment expenditure, but also because of specially restrictive conditions in affording import licenses.

36/ The estimate would have been US $ 8 million if the explicit tariff elasticity earlier estimated (-0.377) had been used. The divergence is explained by the method used in converting real in current values of the trade effects.

37/ An alternative econometric procedure would consist in obtaining the aggregate estimates by pooling together the observations on the disaggregated sectors, and then testing for the consistency of the aggregation by means of the usual F-test. By selecting the present method, we are following the common belief that the forecasting ability of the gravity equation increases with the level of aggregation of trade flows, and therefore aggregate results will be in a sense more reliable than disaggregate ones.

38/ On purely statistical grounds one can not dismiss the hypothesis that the tariff effect on imports is irrelevant, because α_4 is not significantly different from zero. However, substantial multi-collinearity between income and tariff trends must be held responsible for the relatively high standard deviation in $\hat{\alpha}_4$. In addition, the "correct" sign and strong theoretical reasons about tariff effects on imports support our view that this variable should be explicitly considered in the model specification. On the other hand, the Balassa contention that tariff changes are more acutely perceived by consumers than price changes does not seem to be confirmed in our case, due to the apparently superior robustness of the price coefficient relative to the tariff coefficient in Table D.5.

39/ In share equations, the constant term indicates the proportion by which imports from a cerain source will increase in response to a positive variation in total imports, when prices are constant. Its size can be related to a variety of factors, some of which are of the gravity type and others depend on the commodity-composition of imports. The independent addition of income in the share equations is intended to isolate the latter influence, but interferes with the usual meaning of the constant term.

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C O N C L U S I O N S

1.

It is the main purpose of this dissertation to produce quantitative estimates of the trade and welfare effects of preferential trade policy as adopted by Portugal in the recent past. On the basis of certain a priori requirements, the gravity approach was selected with this purpose. It seemed particularly suited to produce bias-free results in a changing environment, where a variety of factors other than tariffs were perceived to have influenced trade patterns. In this respect, the gravity approach looked superior to any kind of residual methodology based on linear projections.

However, our version of the gravity model, developed to allow for separate calculation of export and import effects in a single economy, revealed a certain number of limitations, that in some cases went beyond those originally expected.

It was clear from the outset that this method would not allow for separate estimates of trade creation and trade diversion, once projections of the base-year model structure were ruled out. This shortcoming is specially relevant for the interpretation of import-side effects, due to their opposite meaning in welfare terms.

Our work with different geographical samples revealed sensitivity as to the size and time path of the estimated parameters. This is an important limitation, as it adds a new dimension to appreciate the relative nature of final results. The difficulties found in incorporating explanatory variables for the rapidly changing relationship with non-OECD countries constrained us to limit the validity of results to the OECD area, once dismissed the assumption that the model would be equally valid for partners situated outside .

In our version of the gravity model, specific parameters are estimated for Portugal; otherwise, we should be constrained to assuming that average estimates for high standard-deviation parameters (distance, tariff preferences, e.g.) would also apply indifferently for every OECD country. In this way, the "normalizing" group became considerably shrinked in comparison to other gravity applications, and consequently, the sensitivity of the model to random fluctuations in trade flows was increased. Three-year averaging of trade data proved a useful device to eliminate the bias derived from temporary adjustments in prices and exchange rates. How-

ever, some unexpected fluctuations persisted over the time span, affecting in particular the Hecksher-Ohlin explanatory variable.

Finally, the dummy-variable method, while acceptable in order to measure the effect of tariff preferences (because of the dichotomy preferred/non-preferred) is unable to analyze more complex cases, namely of independent tariff variations and introduction of non-tariff barriers. These are important phenomena in the case under study, particularly in what concerns the import-side effects.

For all these reasons, the gravity approach was shown to be more suited to study the export-side effects than those on the import-side.

2.

The results obtained with the export model corroborate a priori expectations about the impact of preferential trade agreements, serve to illuminate some new aspects, and provided measures of trade and welfare effects.

In the Portuguese case, tariff preferences are an important influence upon   the geographical pattern of export allocation. The evidence of a significant EFTA effect of export expansion in 1971/73 confirmed previous findings. From this period onwards, an equivalent EEC effect builds up until reaching a significant level in 1980/82. Since 1974/76, it is already impossible to differentiate, on statistical grounds, between the size of EEC and EFTA preference effects upon POrtuguese manufactured exports.

Consequently, the Free Trade Agreement established with the EEC in 1972 produced a positive impact on Portuguese manufactured exports, not only in absolute terms, but also having regard to the unfavourable international and domestic context in which those effects took place. In macroeconomic terms, expanded exports acted as a stabilizing influence on the current deficit and served to improve policy trade-off options. Manufacturing firms suffering the effects of contractionary policies on the home market, were given a competitive opportunity to expand sales abroad, on EEC markets, thereby maintaining acceptable levels of capacity utilization. The welfare benefits that were quantified on the assumption that Portuguese exporters could reap "windfall" gains, without extra-costs being borne by them or the economy as a whole, amouted to US $ 77 million, i.e. a net increase of 0.4 percent of GDP at current prices over 1980/82.

Furthermore, we must stress the dynamic element in the gains from tariff preferences. The EEC preference effect shows an increasing trend, which does not seem to have slowed down by 1980/82, despite free access to most Portuguese exports was actually granted in 1976. This trend indicates that tariff preferences had a stimulating effect on investment in new capacity, envisaging in particular the production for the EEC markets. As the full membership of the EEC will remove the existing trade barriers, improve the system of intra-Community circulation of goods, and extend liberalization to food trade, services and investment, one may expect the export expansion gains to increase in relative terms throughout the present decade.

These conclusions must however, be qualified in several respects.

In the first place, the relative impact of EEC preferences remains much below that of EFTA, which can be explained through the differences in competitive environment between the two areas. The position of Portuguese exports inside EFTA markets is more protected against other low-cost competitors than inside the EEC, especially in relatively high tariff protected items, as textiles and clothing. Moreover, the export restraint policy adopted by the EEC vis-à-vis imports of these items was shown to play an effectively curbing role. In the future, the possibility of the difference between relative intensities of impact becoming narrower will depend on the Community's commercial policy and the extent to which Portuguese exporters will become subject to N.T.B.s imposed by EFTA countries.

Secondly, if the effects of the Free Trade Agreement are appreciated together with the effects of the first enlargement of the EEC, the net outcome is rather meagre. One has to weigh the losses suffered in the markets of the acceding countries that were previously EFTA members, against the gains obtained in the markets of the original EEC members.

Thirdly, the export expansion effects due to EEC preferences show exactly the same pattern as those observed in the case of EFTA preferences ten years earlier. Rather than a homogeneous distribution of effects, one gets a concentration in product groups that enjoy bilateral comparative advantages, without holding the same position in the world at large. Such is the case of textiles and clothing and also, to some extent, of machinery and apparatus. The lack of export diversification is connected to the largely inter-industry pattern of Portuguese trade and to a rather conservative behaviour of the factors influencing the evolution of comparative advantages, in the home economy.

3.

The use of the gravity approach to study the import effects served
to illuminate some important issues, but left others insufficiently explained.

Tariff preferences were not shown to be globally influent upon the
Portuguese pattern of import allocation in the early period, and their im-
portance has been decreasing since then.

The gravity results corroborate other studies in what concerns the
effects of EFTA membership. The initial trade creation effect was rather
meagre, but there are clear signs of trade diversion against EEC products.
The removal of tariffs protecting domestic production was slow enough to
avoid major replacements by foreign goods, whereas the full removal of tar-
iffs on goods without domestic substitutes allowed for a significant shift
in trade from the EEC to EFTA countries.

According to the expectations, the EFTA trade creating effect should
increase progressively, whereas the Free Trade Agreement with the EEC should
produce in succession a trade reversing phenomenon, followed by gross trade
creation. As a matter of fact, only the reversion effect was unequivocally
demonstrated by the statistical analysis. In the two latest periods, 1977/79
and 1980/82, there is no significant sign of the import allocation pattern
being affected by tariff preferences granted by Portugal either to EFTA or
to the EEC. Both theoretical reasoning and empirical evidence suggest two
reasons that may explain these findings.

1) As evidenced by the time-series statistical results, there is
high cross-substitutability on the Portuguese market between EEC and EFTA
products, and low cross-substitutability between products originating in
these areas as a whole and those originating outside. Therefore, one may ex-
pect relatively strong shifts of imports between EEC and EFTA, in response
to changes in bilateral preference margins, and a weak effect of tariff
changes applying to one or both   areas upon imports coming from the
rest of the world.

2) The package of non-tariff barriers introduced after 1975 played
a decisive role in preventing trade creation arising as a consequence of
the preferential agreements. This curbing role was confirmed in the simula-
tion exercise using the time-series parameters. Furthermore, the disaggregated
equations reveal the presence of gross trade creation in the only sector,
textiles and clothing, where the strong comparative advantages held in rela-
tion to EEC and EFTA and the high tariff rates vis-à-vis third countries
make non-tariff barriers not justified on either protective or stabilization
grounds.

4.

The time-series model application looks superior to the gravity approach in three important aspects. Firstly, it allows for the possibility of quantifying the effect of non-tariff barriers, independently of the specific effects of preferential agreements, and to check whether those have bee discriminatory or not, as between different foreign suppliers of manufactured goods. Secondly, it allows for a separation between trade diversion and net trade creation. Finally, it allows for the possibility simulating future EEC membership, under alternative assumptions regarding non-tariff policy.

The major shortcoming of the time-series model application is that the validity of trade policy effects, as estimated, lies wholly on the assumption that the price coefficients measure conveniently the influence of changes in foreign competitiveness upon the pattern of Portuguese imports.

Such an assumption is questionable on theoretical and empirical grounds. In the first place, price movements in one country are not independent of those registered in other countries, especially where a considerable degree of economic integration has already been achieved, as in Western Europe. Therefore, high multicollinearity is expected among price variables in the share equations, and for this reason the estimated coefficients show relatively large standard errors and a downward bias. Secondly, the decision to import from a specific source is a function, not only of price, but also of a variety of factors, including credit conditions, product innovation, existence of local assistance networks, etc. Export unit value series can give a distorted image of the evolution of competitiveness, as the case of United Kingdom illustrates. Thirdly, we must also take into account the effects of aggregation bias, both in respect of time (observations are annual) and coverage.

A second type of criticism is raised by the quantification of non-tariff barriers through a dummy variable. This method leads to a specification bias attributable to measurement errors: it is likely that the intensity of those barriers has not been constant since 1975, and that some of them had already been in force before.

Despite these qualifications, the model produced some answers as to the nature of import demand and trade policy effects in Portugal. The behaviour of total imports of manufactured products over the period 1961/80 is satisfactorily explained by four factors: income growth, business cycle, changes in relative prices and tariffs, and non-tariff barriers.

After 1973/74, the equilibrium of the balance of payments became a prime constraint to economic policy. Against a dwindling surplus in invisible and capital transactions, and a mounting deficit in food and energy trade, the reduction of the foreign trade gap in manufactured products became a crucial policy target. Direct import restraints were introduced with this purpose at an early stage, with an exclusive character, and later they served to support a devaluation policy.

The effect of devaluation in an economy with serious external deficit is to shift domestic demand from importables to non-tradables and import-competing goods, by increasing the relative price of importables, and to shift the supply of exportables from the domestic to the external market. The evidence obtained supports the generally held view that, while Portuguese exports react quite elastically to exchange rate changes, manufactured imports are much less responsive. Therefore, the devaluation policy had to be complemented by the continued resort to direct restraints, operating both on prices and on quantities. Among these, there is evidence that quantitative restrictions played a more powerful role than the import surcharge.

Stabilization policies reacted over the protectionist structure making it simultaneously more discriminatory and less transparent. Inevitably import restraints increased the degree of discrimination between production for exports and production directed towards the domestic market, thereby reducing the effectiveness of devaluation policy in propping up exports. The launching of export promotion policies can be interpreted as a partial compensation for the increasing bias against exports, but evidence points to very low levels of efficiency of these policies. Non-homogeneous import restraints, strongly based on quantitative restrictions, also increased discrimination in sales directed to the domestic market. The pattern of effective protection observed in 1977, with inclusion of the surcharge only and not of implicit barriers, reveals both an increase in rates and a disruption of the traditional "hiearchy", with a pronounced rise in protection afforded to input-producing branches.

Discriminatory effects of non-tariff barriers were also revealed as between different sources of imports. Either because of a different commodity-composition of imports, or because licensing authorities wished deliberately to compensate the rapidly eroding tariffs on EEC and EFTA products, or both, imports from these two areas were more severely affected by N.T.B.s

than those originating elsewhere. Imports from the EEC were especially
affected by implicit barriers, whereas imports from EFTA revealed a
strong sensitivity to the surcharge.

5.

To increase the degree of discrimination among industries, among
imports of different origins, or between export-oriented and domestic
market-oriented production represents a source of costs to the economy as
a whole, and therefore a lower   rate of productivity growth. Costs in-
crease directly, as a result of inefficient producers, either at home or
abroad, entering the market above world competitive prices. And they in-
crease indirectly, as the rents produced by artificial price differences
tend to be actively sought by interest groups, that devote unproductive
economic resources to that purpose. In a highly discriminatory system,
economic inefficiency and rent-seeking are rewarded, whereas the pursuit
of excellence in production is discouraged.

In this dissertation we did not go very far in the measurement
and analysis of the protection cost. Two important results were nonethe-
less produced:

1) The tariff equivalent of implicit trade distortions was es-
timated at 47% which adds to an average 10% surcharge to yield the quite
substantial overall rate of 57%, attributable to non-tariff barriers.
The total welfare cost of these barriers was consequently evaluated in
US$330 million in 1980, which represented 1.2% of Portuguese GDP.

2) The net outcome of the preferential trade policy on the im-
port side was the opposite of what should be expected under "normal" cir-
cumstances. Instead of trade creation, there was net trade erosion,
which means that actual imports in 1980 were below the level that one
might expect in the absence of both preferential policies and non-tariff
barriers, given constant trade parameters. If the welfare gains expected
from preferential policies were conceived only as an outcome of greater
liberalization of imports, then they would be entirely frustrated.

Before we compare expectations with outcome of trade policies,
let us state briefly two aspects in which the results obtained with the
time-series model differ from those obtained with the gravity model.

Firstly, we can not identify the whole amount of trade diverted
from EFTA to the EEC in the seventies with trade reversion, as we did
when interpreting the gravity results. The cross price elasticity of

demand for EFTA goods in response to a change in the tariff applying to
the EEC is much higher than its symmetrical. This means that the diver-
sion of trade from EFTA to the EEC sources in response to a tariff cut
under the Free Trade Agreement can be separated in two elements: one
corresponds to the movement in the opposite direction that took place
earlier in response to an identical tariff cut under the EFTA Agreement
(trade reversion); the second element constitutes genuine trade diversion
in favour of EEC producers.

Secondly, it is possible to measure a small net trade creation
effect on the basis of the time-series results, which did not show up
before. This is due to the best confidence intervals obtained for the
tariff-cum-price coefficients, in comparison to the preferential "dummies"
of the gravity model. However, the interest of this measurement is small,
as trade policy as a whole was shown to have produced a net erosion of
trade.

6.

Two general conclusions can be derived from the survey of cus-
toms union theory. Firstly, it is necessary to abandon the usual simpli-
fications of trade theory, as perfect competition and costless taxes
and subsidies, in order to find an economic rationale for the formation
of preferential trade areas. Secondly, the conditions under which these
can be said to be preferable to non-discriminatory policies, even in a
second-best context, are too narrow to provide a convincing explanation
for the increasing popularity that regional integration arrangements
have known.

Dissatisfaction with the traditional approach inevitably arises
when studying the Portuguese case. By removing the assumption of perfect
competition one can find out why preferential trade policies should be
adopted instead of alternatives, from a national economy standpoint.
On the other hand, very little progress, if any, is achieved towards
explaining reciprocity, or the reasons why domestic-policy-induced dis-
tortions contributed to reduce the expected net balance of preferential
trade policy.

The formation of a preferential trade area plays a positive role
upon the terms of trade of the relatively smaller economy, the one compet-
ing with the rest of the world on the partner's market. This argument,
that recalls the classical "advantage of being small", in the Marshall-

Viner tradition, amounts to saying that the price of the small partner's
exportable is increased up to the tariff-inclusive level prevailing in
the partner's market, whereas the trade diverting effect does not mater-
ialize, due to the previous high concentration of imports . In this case
the terms-of-trade effect adds to the gains obtained through the optim-
ization of resource allocation. As the relative price of exportables in-
creases, domestic resources are shifted towards the sector holding com-
parative advantages. However, this allocative effect can take place as a
result of domestic or non-discriminatory trade policies, and only the
terms-of-trade gains are specific to the preferential trade option.

The argument in favour of preferential trade policy may be
substantially changed, if the importables-producing sector is assumed
either to generate static production externalities or to possess a long-
run decreasing cost function. In either case there is no justification
for a small economy to join a preferential trade area, unless the terms-
of-trade gains exceed the socially evaluated welfare loss associated to
the shift of resources away from import substitution.

The weight of each argument must be differently assessed according
to the specific stage in Portuguese experience of European integration.
Under EFTA membership, the extended protection to import-substituting
industries was a conscious attempt to maximize the net balance between
terms-of-trade gains and social losses. Restricted import liberalization
did not avoid the EFTA preferences to operate as an effective export pro-
motion device, by drawing unused resources, particularly raw materials
and unskilled labour towards the export sector. However, insistence on
inward-looking industrialization reduced the scope for a more diversified
pattern of export benefits, because the short supply of capital and tech-
nology was preferentially directed towards domestic market-oriented in-
dustries. In welfare terms, export expansion gains must be weighed against
trade diversion losses affecting in particular EEC products.

The Free Trade Agreement offered still better prospects of a
favourable net balance, as tariff preferences were extended to a larger
market, whereas trade reversion is a welfare loss-recovering effect.
Also, the terms under which the resource allocation effects could be
interpreted were reversed. By increasing resort to fiscal policies, one
sought to transform the production structure, so as to develop interna-
tional competitiveness in industries with dynamic externalities. Joining
a free-trade area in this situation is indeed a second-best alternative

when direct export subsidization is ruled out by international and fiscal constraints. When externalities are associated to the production of exportables, the terms-of-trade improvement redirects resources towards the "right" sector, and therefore preferential trade policy is superior to non-discriminatory tariff liberalization.

Another argument could be used to justify the Free Trade Agreement. The free access to the EEC markets was considered a necessary condition for the development of scale economies in new ventures benefiting of locational advantages, that the industrial development of the sixties had made technically feasible.

The expected resource allocation effects did not materialize. Exogenous world price changes and a rise in domestic wages impaired the possibility of rapid changes in the production structure. The resulting current payments deficit called for direct import restraints that, once implemented became a permanent feature of a neo-protectionist apparatus. Tariff preferences granted by EEC countries and a constant devaluation policy helped to expand exports, and to maintain capacity utilization levels generally high in the export sector. On the other hand, super-protection afforded to domestic-market-oriented industries, together with other domestic policies that introduced rigidity in factor movements, aggravated inefficiency costs and discouraged a general adjustment in the production structure.

Despite being conducted in strictly economic terms, the discussion so far has provided a convincing case for the adoption by Portugal of preferential trade policies. However, two aspects still need further clarification.

Whatever the economic argument considered, the establishment of preferential relations requires reciprocal benefits. This condition is made particularly clear under the "public good" argument, where mutual preferences are envisaged as a means to exchange protected foreign markets for national industries holding comparative advantages in a bilateral context. It is difficult to find strictly economic justifications from the individual standpoint of either the EEC or the EFTA countries to accept Portuguese partnership. It seems more rewarding to seek explanations along the lines suggested by the "theory of international associations", an application of the theory of clubs to international relations. It emphasizes the importance of political objectives and the distinction between national and global interests.

Secondly, it may be insuficient to state simply that the pro-
tectionist surge in Portugal frustrated the dynamic benefits expected
from the preferential trade policy, without inquiring about its deter-
minants. This can be done by endogeneizing trade policy and considering
it subject explicitly to political and economic variables, along the
"public choice" approach.

Both limitations indicate possible avenues for further research
in this field.

7.

The accession to a customs union is customarily seen as a pro-
cess by which the acceding partner removes tariffs on intra-union trade
and adopts a common external tariff. In the Portuguese case, however,
this is only a minor implication of full membership. The essential issue
will be the removal of non-tariff distortions to trade, at least in
what concerns manufactured trade.

The singularity of this case, the difficulties associated with
identifying and measuring such distortions, and their flexible, negoti-
able nature, prevent us from entering into very detailed predictions of
impact.

However, sufficient evidence hae been provided, we hope, to
suppot the view that EEC membership will be a case of N.T.D.- removal-,
rather than tariff removal plus CET adoption. It does not seem, though,
that this problem has been given all attention that it deserves.

Whereas the removal of existing duties and the adoption of the
CET will follow a seven-year transitional period, according to the
Accession Treaty, non-tariff barriers to imports in Portugal were treated
as an "alien body" to the negotiations. As a general principle, they
should be eliminated from minute zero of accession. Exceptions were
allowed for car quotas, that will remain until 1987, and for some quotas
on non-EEC products that will remain until 1992. Also some precautionary
measures were taken in respect of the import surcharge; this was trans-
formed into protective duties for a large number of goods with local
substitutes, or else into an excise duty or a higher rate of value-added
tax. However, no transitional measures were adopted in respect of import
licensing. It is true that this system is contrary to GATT rules and is
strange to the negotiations for accession as such. But its current role

in stabilization policies and protection to domestic industries should
nod be neglected, as a sudden deterioration of macroeconomic situation
will make the overall adjustment more difficult to carry out.

Awareness of the importance of this issue has led some Portuguese
senior officers to advise the replacement of import licensing by a com-
plex system of administrative and technical barriers, bearing similarity
to those in force in most Community members. This would mean that a
relatively "cheap" system of import restraint would be replaced by a
cumbersome, bureaucratic system, without improving on the conditions
of transparency and discrimination. Furthermore, such an expensive
system might prove of short duration, if the current efforts at the
Community level to improve the internal circulation of goods are carried
out successfully.

On the other hand, the present order of magnitude of the restric-
tive effects of implicit barriers is such, that it does not seem possible
to replace them with a non-discriminatory surcharge or devaluation. It
would be preferable to replace the system of import licensing in those
sectors where it has been more effective with global quotas, that would
be progressively expanded until complete elimination. This policy would
have the advantage of greater transparency, less bureaucratic costs and
less uncertainty about the future course. Moreover, the programmed
liberalization of quantitative restrictions would allow for a coordinated
program of assistance to industries facing prospective losses and
capacity cuts.

The continuation of the dynamic trend of export expansion, the
removal of voluntary export restraints in trade with the EEC, and eventual-
ly a discrete devaluation of the Escudo, in order to curb the trade deficit,
will produce good medium-term prospects for the export industries. How-
ever, a repetition of the behaviour observed during the seventies is to
avoid. Given the increasing pressure of low-cost suppliers in sectors
where Portugal holds comparative advantages, an expansion-plus-diversi-
fication policy target is in order for the Portuguese export pattern.

Full membership of the EEC will inevitably bring about a
rise in the ratio of manufactured imports to domestic consumption. Will
the resulting increase in the domestic supply of resources be sufficient
to achieve that policy target? Economic analysis tells us that the out-
come of trade liberalization when factor rigidity prevails is more unem-
ployment, rather than resource reallocation. Consequently, the govern-
ment will have to complement the reduction in the protective barriers

with policies aiming at structural adjustment. One set of policies should
be of the negative type. Existing restrictions to inter-sectoral labour
mobility should be removed, as well as the current bias favouring public
investment instead of private, and the remaining restrictions to foreign
investment. Another set of policies should be positive, consisting of
a massive program of professional training , a system of incentives designed
to bring scarce technology and skills available into sectors showing good
prospects of international demand and competitiveness, and capital subsid-
ization of export-oriented production in high-technology and differentiated
products .

Such a government policy is centered on the need to change the
supply determinants of foreign trade, rather than the expansion of domestic
demand through conventional budgetary and interest rate policies. There
is the immediate post-accession danger of a coincidence between a non-
programmed removal of implicit barriers to trade and the effects of
expansionary policies on the trade and budget deficits. In this case, a
major external payments crisis might emerge in the short run, which would
jeopardize the process of structural adjustment and bring in regressive
forms of import control.

A P P E N D I X   A

FREQUENCY DISTRIBUTION OF TARIFF RATES - 1970/80

(disaggregated at the 4-digit level of the BTN)

Source :

Estatísticas do Comércio Externo, INE, Lisbon

Official Tariffs, Direcção-Geral das Alfândegas, Lisbon

Tarif Douanier Commun, Communautés Économiques Européennes

A.1.- MANUFACTURED PRODUCTS

Number of products (vertical axis): 400, 350, 300, 250, 200, 175, 150, 125, 100, 75, 50, 25, 0

Av. duties (%) (horizontal axis): 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60
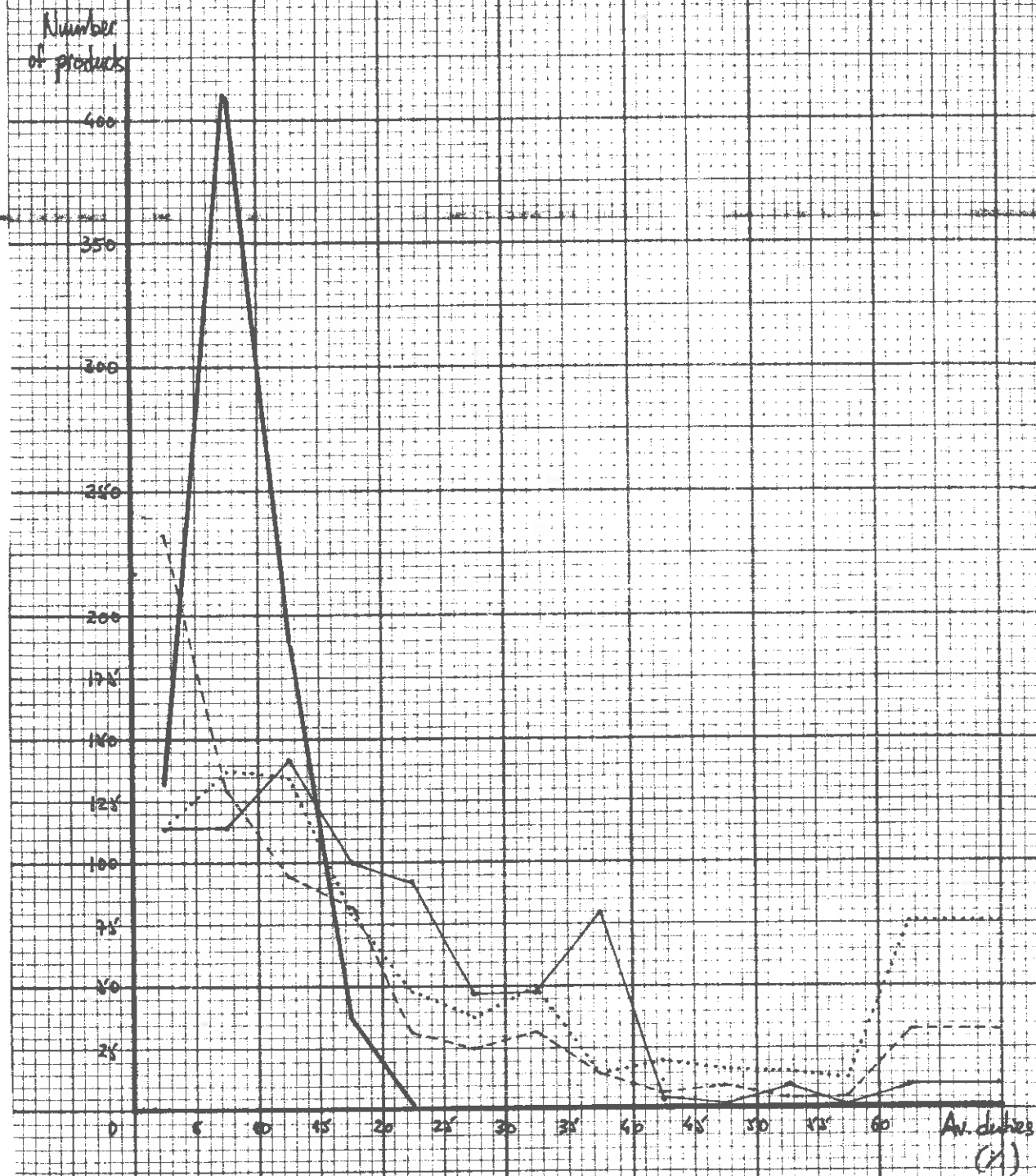
Portuguese tariffs - 1970
"   "   - 1978
"   "   - 1980 (2nd semester)
EEC   "   - 1980

A.2 - CHEMICAL PRODUCTS

A.3 - WOOD, CORK AND PAPER
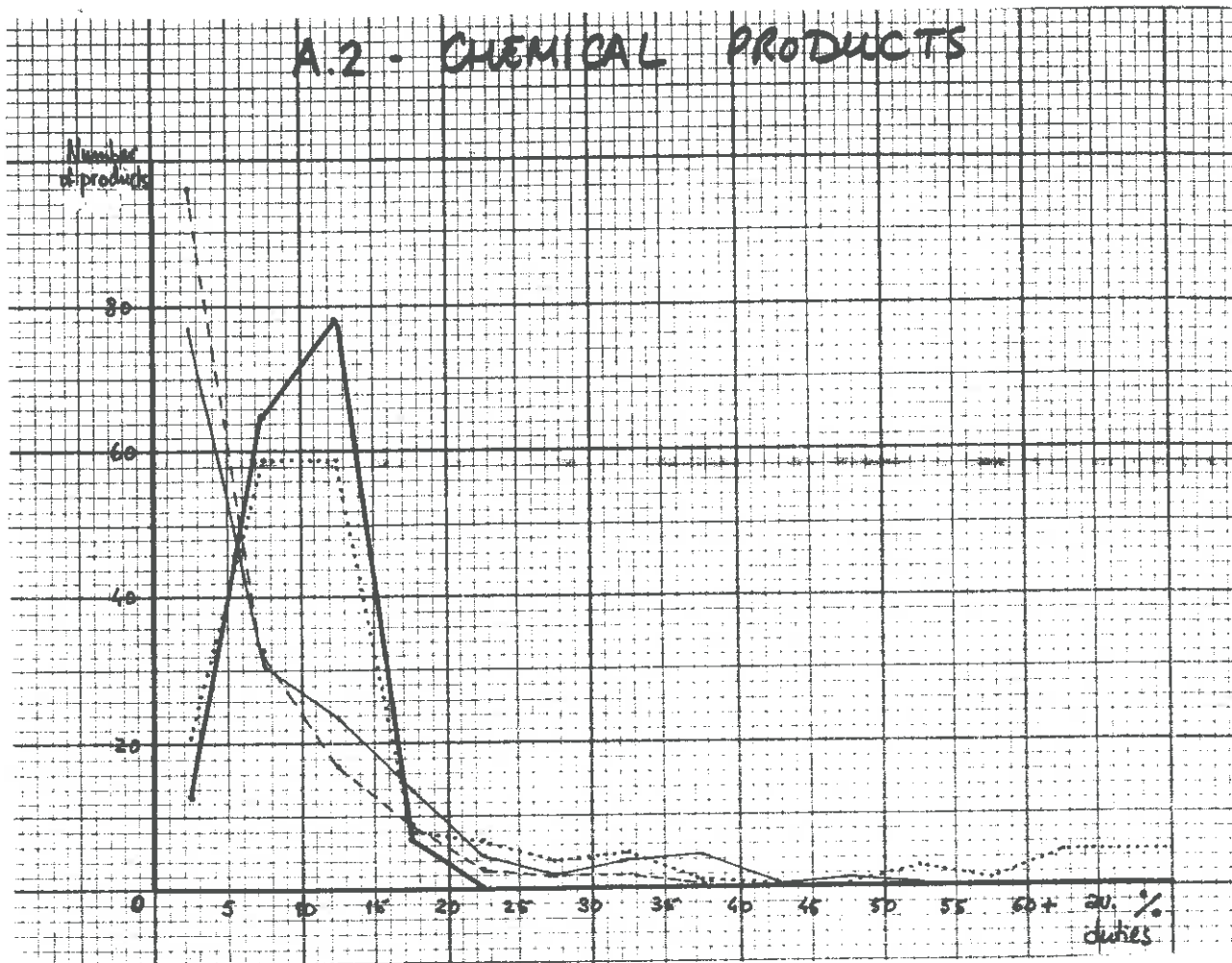
A.4 - TEXTILES, CLOTHING AND FOOTWEAR
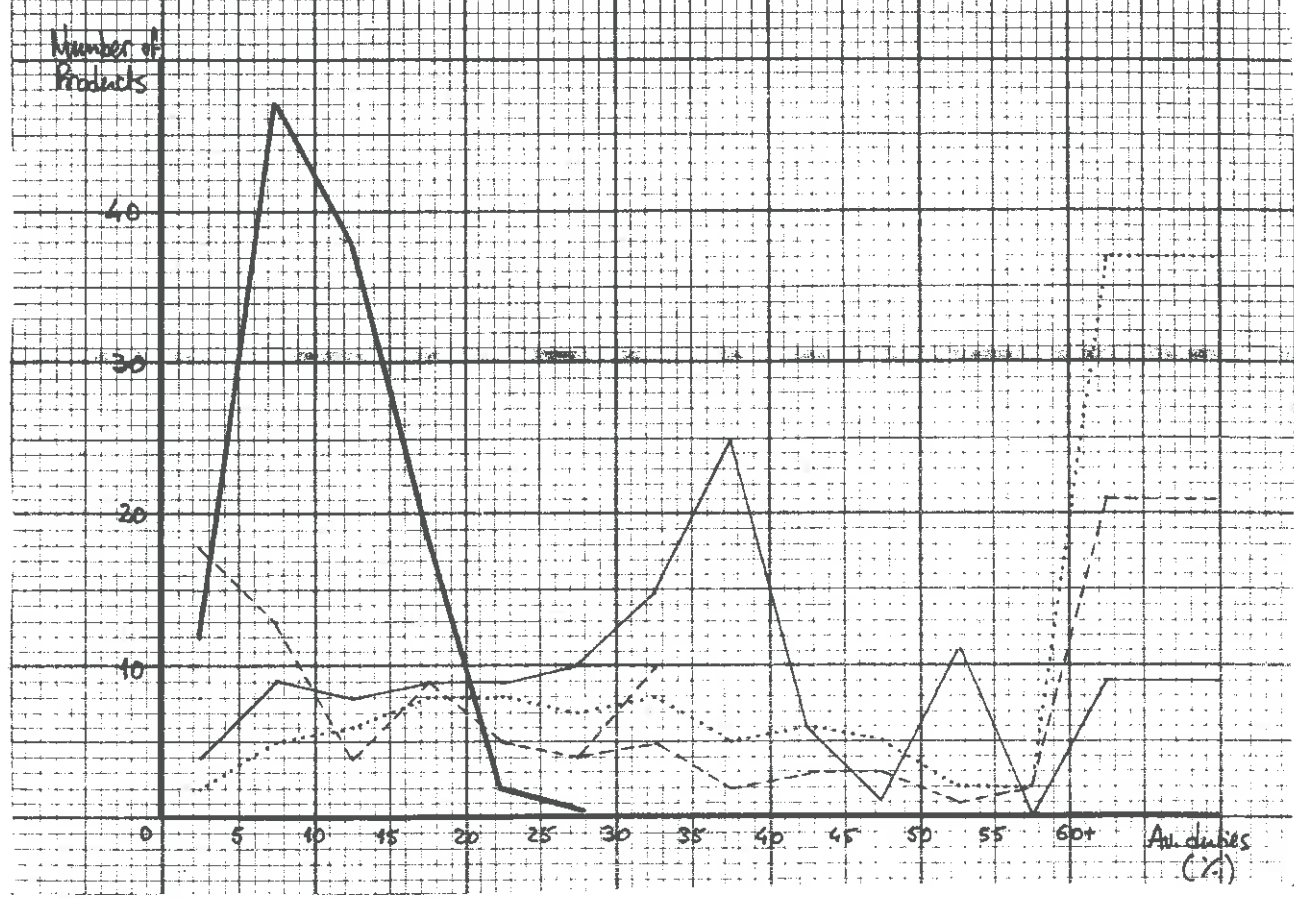
A.5 - NON-METALLIC MINERALS
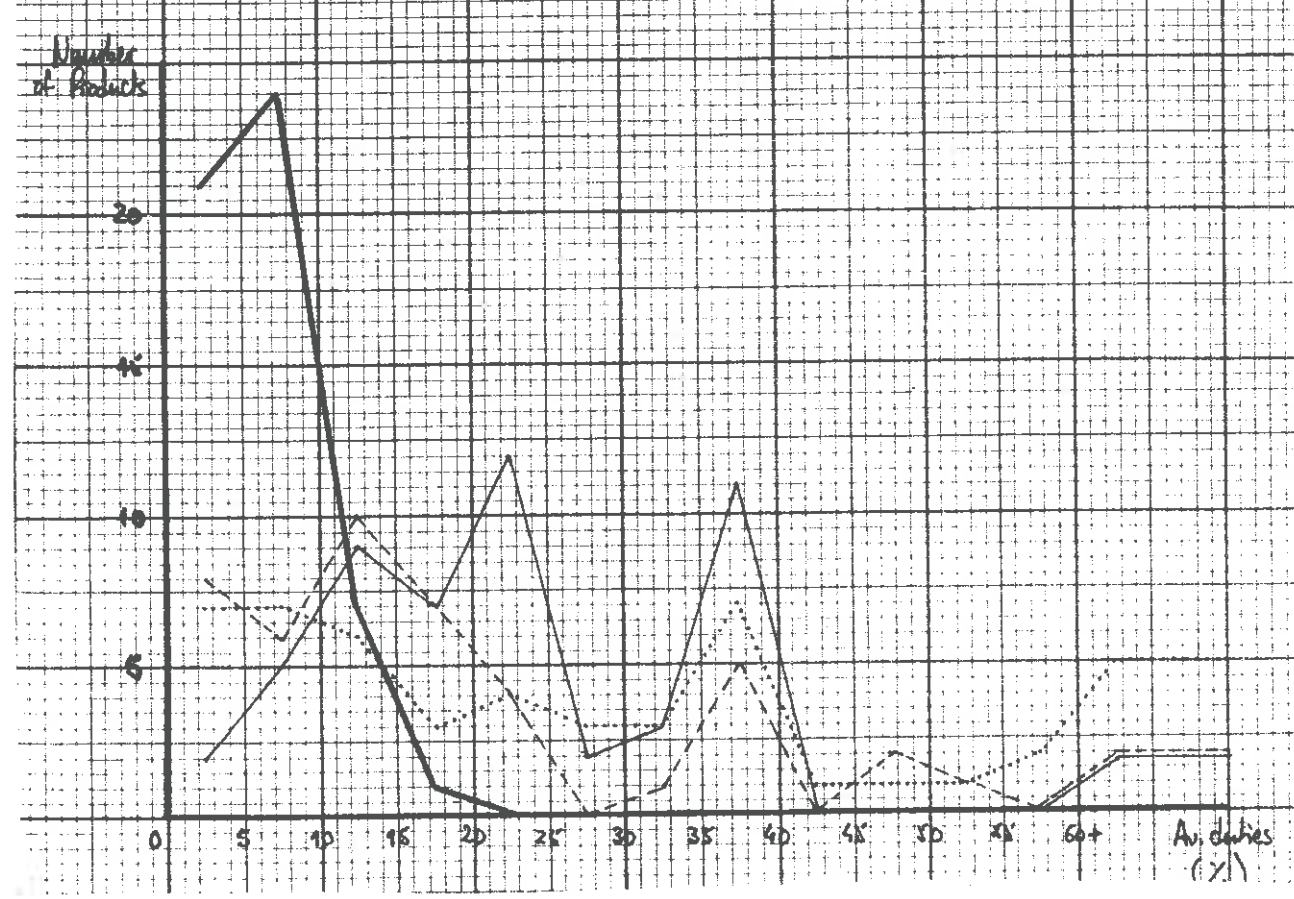
A.6 - BASE METALS
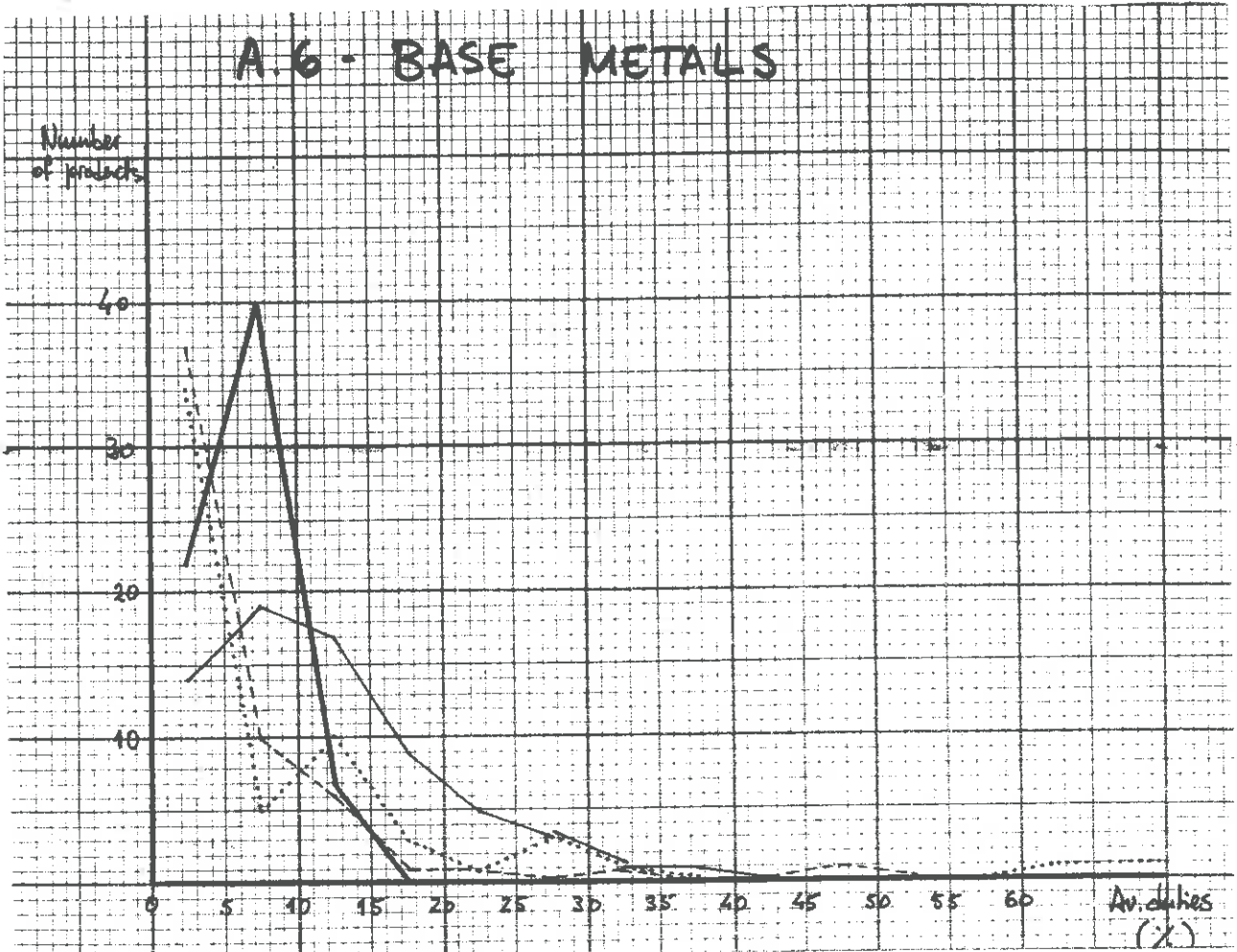
A.7 - METALLIC PRODUCTS
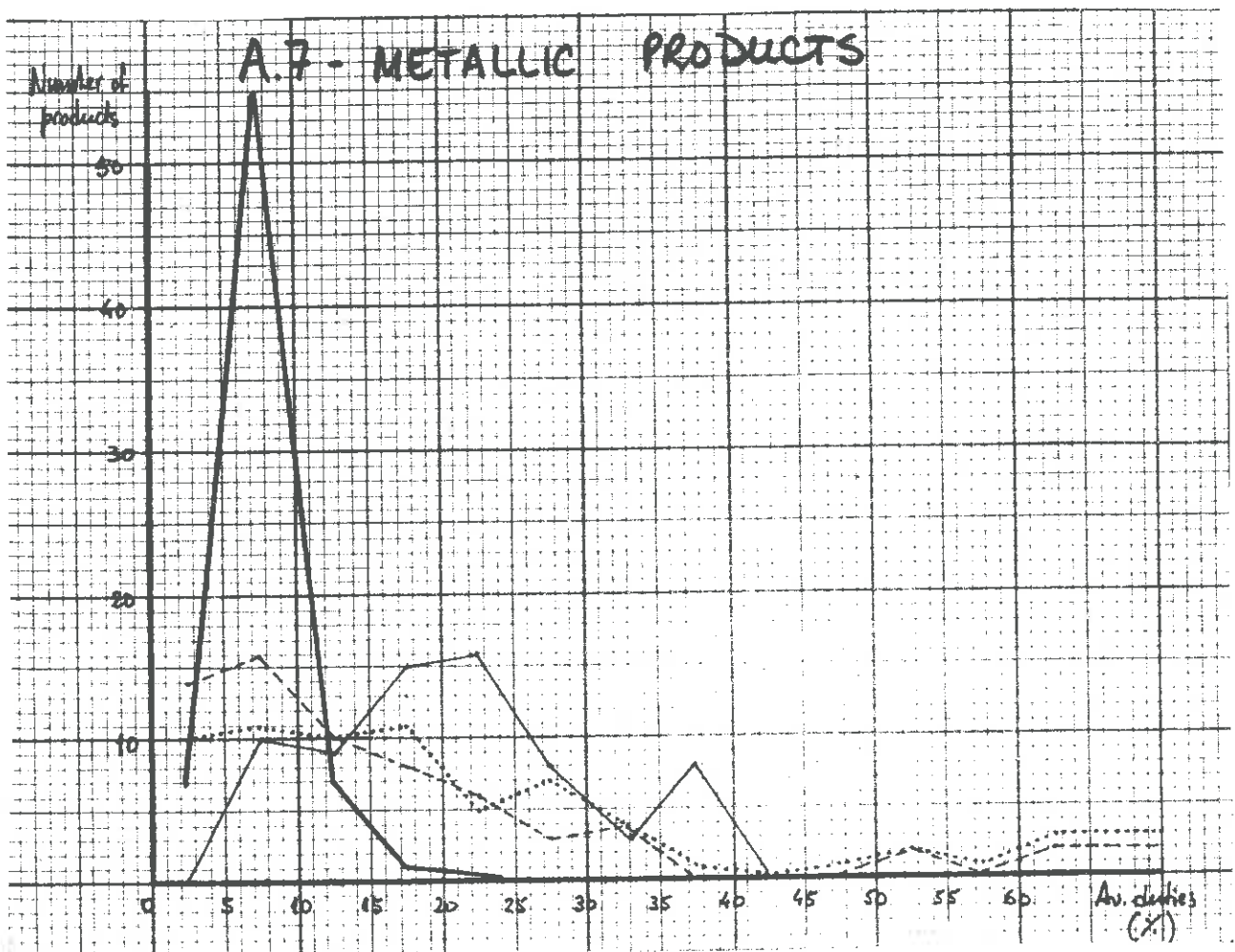
A.8 - MACHINERY AND TRANSPORT
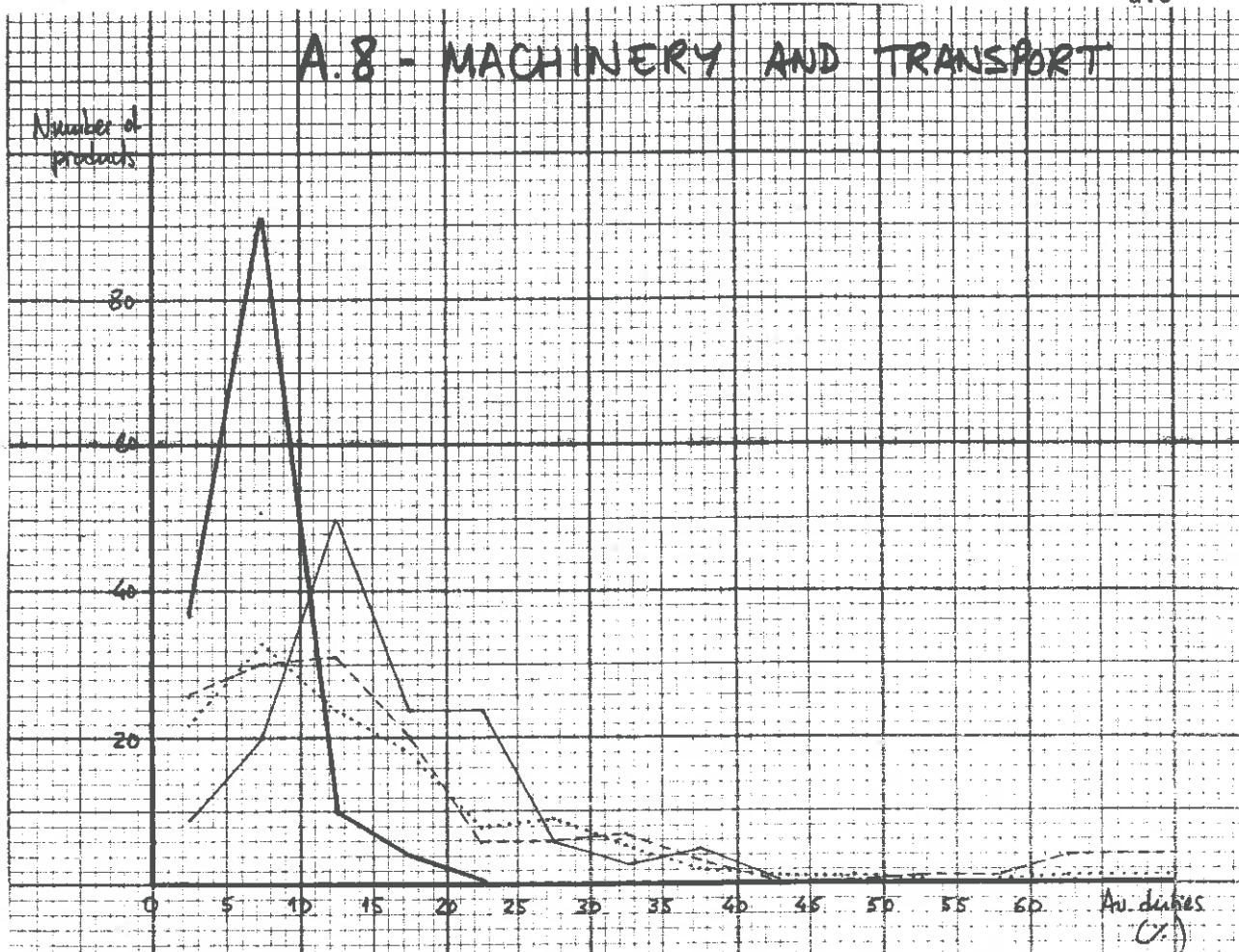
A.9 - MISCELLANEOUS PRODUCTS
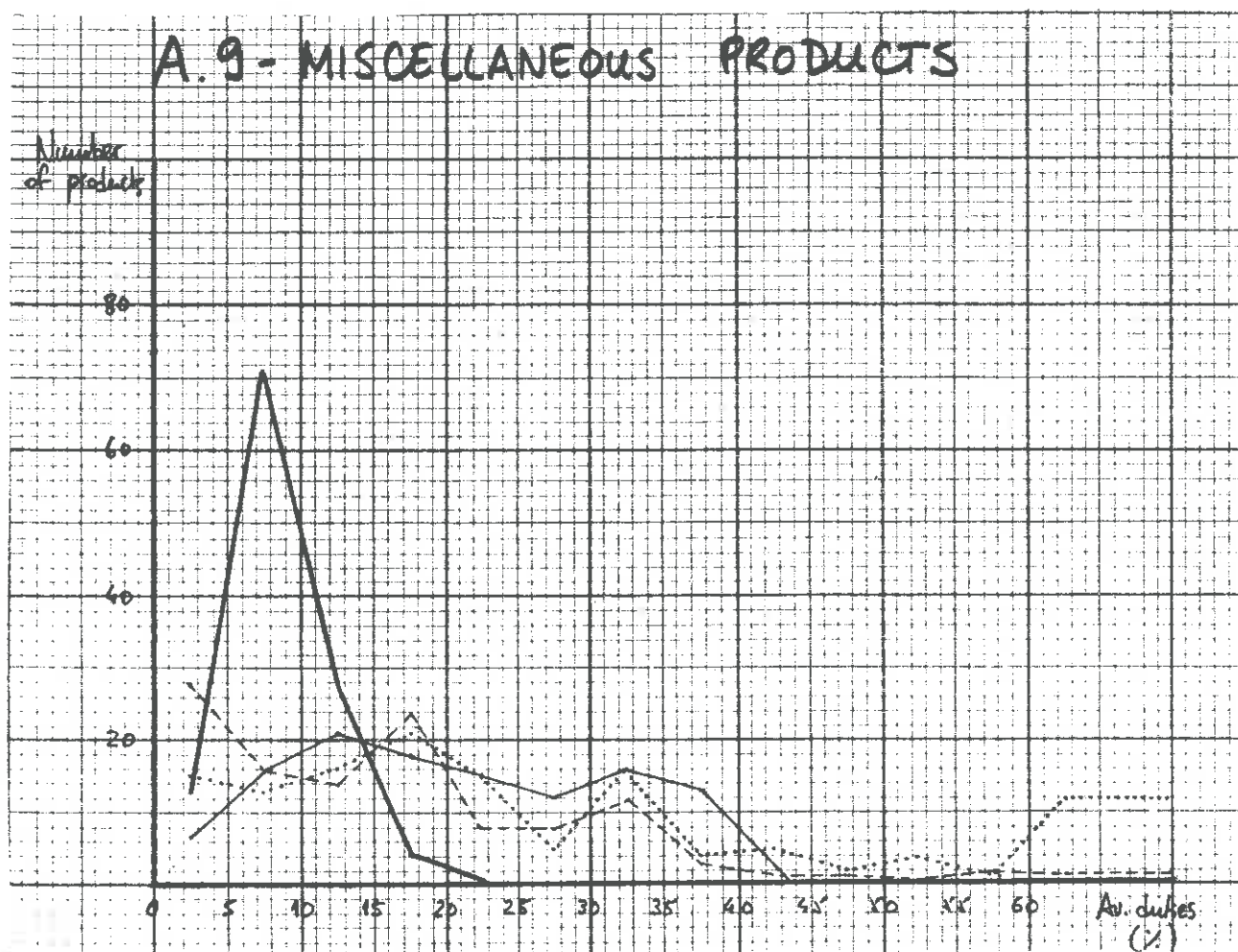
A P P E N D I X B

AVERAGE NOMINAL AND EFFECTIVE TARIFF RATES - 1959/80

Table **B**.1

Average tariff rates — 1959

SITC Groups	Portugal	Austria	Sweden	Switzerland	United Kingdom	E.E.C.	U.S.A.
5 - Chemicals	23	13	5	6	15	12	24
62 - Rubber	37	26	10	7	21	18	18
63 - Wood	44	16	4	11	15	16	18
64 - Paper	24	16	6	19	13	15	10.5
65 - Textiles	74	20	12	10	23	16	26
66 - Non-metallic minerals	36	18	8	10	17	13	21
681 - Iron and steel	11	12	5	6	14	10	13
699 - Metallic products	34	20	8	10	21	16	23
71 - Non-electrical machinery	14	18	9	6	17	13	12
72 - Electrical machinery	21	21	10	5	23	15	20
73 - Transport equipment	32	21	13	13	25	22	13
84 - Clothing	42	20	12	11	26	21	32.5
85 - Footwear	69	28	14	11	25	19	19
86 - Professional instruments	26	9	5	3	27	16	29
Average	34.8	18.4	8.6	9.1	20.1	15.9	19.9
Standard deviation	18.4	5.1	3.3	4.1	4.9	3.3	6.6

Source: Political and Economic Planning (1962).

Table B.2

Average tariff rates — Manufactured products

SITC/Rev. 1	1959[a]	MFN 1970	EFTA 1970	$\frac{EFTA}{MFN}$%
51 - Organic and inorganic chemicals	14.0	9.3	1.6	17.2
52 - Crude chemicals from coal, petroleum, gaz	7.0	11.6	1.5	12.9
53 - Dyeing, tanning and colouring materials	10.8	6.8	3.3	48.5
54 - Medicinal and pharmaceutical products	22.0	14.5	5.3	36.6
55 - Essential oils, perfume and flavours, etc.	36.3	41.7	29.3	70.3
56 - Fertilizers, manufactured	5.0	6.3	1.6	25.4
57 - Explosives and pyrotechnic products	23.0	16.3	7.4	45.4
58 - Plastic materials, reg. cellulose, resins	79.0	38.6	41.4	107.3
59 - Chemical materials and products, n.e.s.	25.0	12.7	6.9	54.3
61 - Leather and furs	37.3	39.6	10.6	26.8
62 - Rubber manufactures	30.3	27.8	19.2	69.1
63 - Wood and cork manufactures	35.2	31.1	9.1	29.3
64 - Paper and paperboard	30.4	34.6	18.2	52.6
65 - Textile products	62.2	63.7	35.3	55.4
66 - Non-metallic mineral manufactures	34.0	26.8	12.6	47.0
67 - Iron and steel	13.6	12.8	10.0	78.1
68 - Non-ferrous metals	8.7	9.8	1.9	19.4
69 - Manufactures of metal, n.e.s.	34.0	27.4	10.6	38.7
71 - Non-electrical machinery	15.6	13.3	7.5	56.4
72 - Electrical machinery, apparatus, etc.	18.3	15.0	5.1	34.0
73 - Transport equipment	17.5	12.6	8.3	65.9
81 - Sanitary, plumbing, heating fixtures, etc.	27.0	37.0	14.2	38.4
82 - Furniture	31.0	56.3	23.7	42.1
83 - Travel goods, handbags, etc.	35.0	100.0	17.8	17.8
84 - Apparel and clothing	41.5	91.9	23.9	26.0
85 - Footwear	69.0	100.0	22.3	22.3
86 - Professional instruments, photographic equipt.	25.0	19.1	6.2	32.5
89 - Miscellaneous manufactured articles	30.1	33.4	12.8	38.3
TOTAL AVERAGE	27.6	27.5	12.1	44.0

a) The values in this column do not correspond closely to those in Table B.1, because the SITC versions and the product coverage differ between the two series.

Source: The same as in Table B.1 and GEBEI (1970-4).

Table B.3

Sectoral rates of protection - 1970 and 1974

IOGP Sector	1970			1974		
	Nominal rates	Effective rates	Anti-export bias	Nominal rates	Effective rates	Anti-export bias
15 - Woollen textiles	19.8	43.2	107.9	9.7	16.4	25.4
16 - Cotton textiles	18.1	33.7	55.3	14.7	31.6	38.8
17 - Hard fibre textiles	21.5	86.1	412.0	8.0	22.7	36.2
18 - Clothing	25.0	52.3	167.2	5.8	-0.5	23.8
19 - Footwear	18.3	18.5	54.5	19.5	53.6	74.8
20 - Leather	18.0	53.7	109.0	6.3	22.6	29.7
21 - Wood	4.7	1.8	15.1	2.6	4.8	6.2
22 - Cork	10.0	18.1	48.5	0.6	0.6	2.1
23 - Furniture	25.6	55.5	86.2	14.3	32.0	36.4
24 - Paper paste and pulp	0.1	- 9.8	0.3	0.0	- 0.5	0.0
25 - Paper and paper articles	10.6	18.4	32.2	6.0	11.3	17.5
26 - Printing and publishing	16.7	25.8	41.0	6.8	10.4	13.5
27 - Rubber articles	33.0	117.4	356.1	14.8	57.2	60.2
28 - Plastic articles	43.7	161.2	169.2	13.2	33.2	38.1
29 - Base chemicals	7.1	2.4	27.6	1.3	0.3	3.6
30 - Resins	8.4	29.0	83.9	0.3	0.4	3.0
31 - Non-edible oils	16.9	504.0	439.0	0.2	- 5.1	2.4
32 - Paints and varnish	19.8	76.4	92.0	8.4	23.0	25.8
33 - Miscellaneous chemicals	21.1	56.6	102.2	2.6	4.1	7.3
34 - Derivatives petrol and coal	7.8	37.8	64.6	7.1	-890.5a)	b)
35 - Glass and glassware	30.8	45.0	118.0	12.3	19.2	27.1
36 - Concrete	11.4	15.7	19.2	9.2	18.3	58.0
37 - Other non-metallic minerals	14.2	16.6	19.1	7.3	9.3	10.9
38 - Iron and steel	16.0	33.1	72.5	0.9	1.3	2.5
39 - Non-ferrous metals	2.6	2.1	12.7	1.0	2.5	5.5
40 - Metallic products	19.0	36.1	45.1	8.4	25.0	26.6
41 - Non-electrical machinery	9.0	9.3	23.7	3.0	4.6	6.8
42 - Electrical machinery	15.8	25.3	58.6	8.1	17.9	19.6
43 - Shipbuilding and repair	11.7	11.9	25.1	1.2	0.6	2.6
44 - Transport equipment	28.2	131.1	437.2	2.1	2.3	3.3
45 - Miscellaneous manufacturing	13.2	14.3	35.9	6.4	9.9	11.0
Weighted Average	16.9	42.6	106.3	6.0	11.1	17.0
Ratio of St. Dev. to Mean	0.557	1.653	1.178	0.815	1.091	0.942

a) This value was excluded from the calculation of the average and the deviation

b) Indicates negative value added in the case of exporting

Sources: M. Porto (1982, Tables 11.7, 11.8) and GEBEI (1970,1974)

Table B.4

Average tariff and surcharge rates -- 1978 and 1980

SITC/Rev. 2	1978			1980 (2nd sem.)		
	m.f.n.	EEC	surcharge	m.f.n.	EEC	surcharge
51 Organic chemicals	2.4	1.1	2.5	3.4	0.7	0.6
52 Inorganic chemicals	2.1	0.6	4.2	3.7	0.0	1.6
53 Dyeing, taming & col. materials	3.3	0.4	6.6	5.8	0.2	2.4
54 Medicinal & pharm. products	9.8	1.1	3.0	11.2	0.8	1.0
55 Essential oils & perfums, etc	20.1	2.3	32.5	23.2	1.6	16.7
56 Fertilizers, manufactured	5.9	1.5	23.8	6.5	1.2	8.8
57 Explosives & pyrot. products	12.9	1.0	35.6	16.0	0.0	7.5
58 Artificial resins & plastics, etc.	14.6	3.5	12.6	15.4	3.0	5.0
59 Chemical products, n.e.s.	7.0	1.2	7.9	10.7	0.7	2.9
61 Leather manufactures	37.6	4.1	28.9	45.3	0.1	10.0
62 Rubber manufactures	12.3	3.1	20.6	21.6	1.7	7.1
63 Cork and wood manufactures	48.6	1.8	34.4	21.5	0.0	21.6
64 Paper and paperboard, etc.	44.3	2.0	38.1	23.6	1.2	11.6
65 Textile articles	43.2	6.6	29.4	40.0	3.3	10.0
66 Non-metallic mineral manufs	19.3	1.9	28.4	23.0	0.6	15.4
67 Iron and steel	7.4	1.0	10.3	13.1	0.6	3.3
68 Non-ferrous metals	4.9	0.6	8.6	9.7	0.2	3.2
69 Manufactures of metal, n.e.s.	18.7	2.2	26.9	20.6	2.9	11.6
71 Power-genertg. machinery	22.6	2.8	9.9	16.1	2.4	3.4
72 Machinery for part. industries	10.9	1.6	5.6	11.9	1.3	1.9
73 Metalworking machinery	22.8	2.0	7.7	15.4	2.2	1.3
74 General industrial machinery	14.1	2.3	15.6	15.3	2.5	5.3
75 Office machines & processing eqpt.	10.2	5.5	3.8	13.4	0.7	1.7
76 Telecommun.& sound equipment	23.2	1.7	25.9	24.5	2.0	17.9
77 Electrical machinery, apparatue, etc.	25.3	3.1	14.8	23.7	2.5	5.3
78 Road vehicles	14.4	2.5	12.6	14.3	0.0	5.7
79 Other transport equipment	7.1	0.8	6.4	7.1	0.2	2.3
81 Sanitary, plumbing fixtures, etc.	13.5	1.9	22.5	25.8	3.8	8.5
82 Furniture	22.5	10.5	36.9	25.8	2.3	32.5
83 Travel goods, etc.	43.7	8.3	56.3	40.0	4.0	60.0
84 Apparel and clothing	61.0	3.4	27.0	54.8	0.2	10.0
85 Footwear	29.2	0.4	27.5	58.8	0.0	16.0
87 Professional instruments	12.6	0.8	7.0	13.7	0.5	2.3
88 Photografic apparatus, watches, etc.	10.4	4.2	22.6	15.5	2.8	13.9
89 Miscellaneous manufactures	20.1	6.8	31.8	22.0	1.1	25.2
Total Average	19.3	2.6	17.8	19.9	1.3	8.5

Sources: "Pauta de Serviço", D-G. Alfândegas, 1978
Estatísticas do Comércio Externo, INE
Decree-Law nº 204A/80 of June 28.

Table B.5

Nominal and effective protection rates - 1977

(including the import surcharge)

Industrial branches	Nominal	Effective	Anti-exp.bias
15 - Woollen textiles	24.3	75.9	131.2
16 - Cotton textiles	34.5	66.4	133.6
17 - Hard fibre textiles	36.2	136.0	2631.8
18 - Clothing	50.8	98.5	250.2
19 - Footwear	94.3	-511.8a)	*
20 - Leather	28.0	108.2	130.8
21 - Wood	40.3	212.1	223.9
22 - Cork	3.9	6.6	*
23 - Furniture	66.2	250.1	478.3
24 - Paper paste	0.0	-3.8	*
25 - Paper and paperboard	34.0	90.7	111.7
26 - Printing and publishing	33.5	45.1	73.0
27 - Rubber articles	27.9	49.5	82.3
28 - Plastic articles	39.5	141.9	118.1
29 - Base chemicals	8.1	12.7	19.3
30 - Resins	15.0	72.7	50.1
31 - Non-edible oils	1.6	-14.7	*
32 - Paints and varnish	31.4	109.2	119.0
33 - Miscellaneous chemicals	7.4	3.0	9.8
34 - Petrol and coal derivatives	4.3	159.9	6.2
35 - Glass and glassware	41.6	88.3	128.8
36 - Concrete	75.1	436.9	*
37 - Other non-metallic minerals	52.1	63.3	117.8
38 - Iron and steel	6.6	9.9	11.1
39 - Non-ferrous metals	13.1	26.3	34.1
40 - Metallic products	33.8	100.1	102.3
41 - Non-electrical machinery	14.9	18.8	32.3
42 - Electrical machinery and apparatus	31.3	54.3	108.8
43 - Shipbuilding and repair	30.4	50.0	53.5
44 - Transport equipment	17.3	14.2	53.7
45 - Miscellaneous manufactures	26.1	55.3	95.0
WEIGHTED AVERAGES	25.8	55.0	
RATIO OF STANDARD DEVIATION TO MEAN	.735	1.079	

Table B.5 (cont.)

Notes:

a) This value is excluded from the calculation of the averages
   and the standard deviation.

* Indicates negative value added in the case of exporting

Source:

For nominal and effective rates - unpublished results supplied by
Professor Manuel Porto.

For the anti-export bias - author's own calculation according to
a formula derived from expression (10) where $S_j = 0.04$ and $t_{ix}=t_i$:

$$E_j^x = \frac{t_j - S_j}{1 + S_j - (\sum_i a'_{ij} + \sum_n a'_{nj})(1 + t_j)}$$

Figure B.1

"Escalating effect" of the tariff structure

(1970)

WORLD MARKET VALUE
Output share (%)

,800

Paper paste

Base chemicals

Wood
Non-ferrous metals

Footwear
Shipbuilding

Non-electrical mach.

Miscellaneous
Non-metallic min.
Concrete
Glass and glassware
Printing and publishing

Electrical machinery

Paper articles
Cork

Cotton textiles

Metallic products

Iron and steel

Clothing

Furniture
Woollen textiles

Miscel. chemicals
Leather
Resins
Rubber
Plastics
Paint and varnish
Hard fibre textiles

Transport equipment

Deriv. petrol and coal
Non-edible oils

2,863

-100   -50   0   50   100   150   200   250   300   350   400

"Escalating effect" (%)

Figure B.2

"Escalation effect" of the tariff structure - 1977

World Market
Value Added (%)

Escalation effect (%)
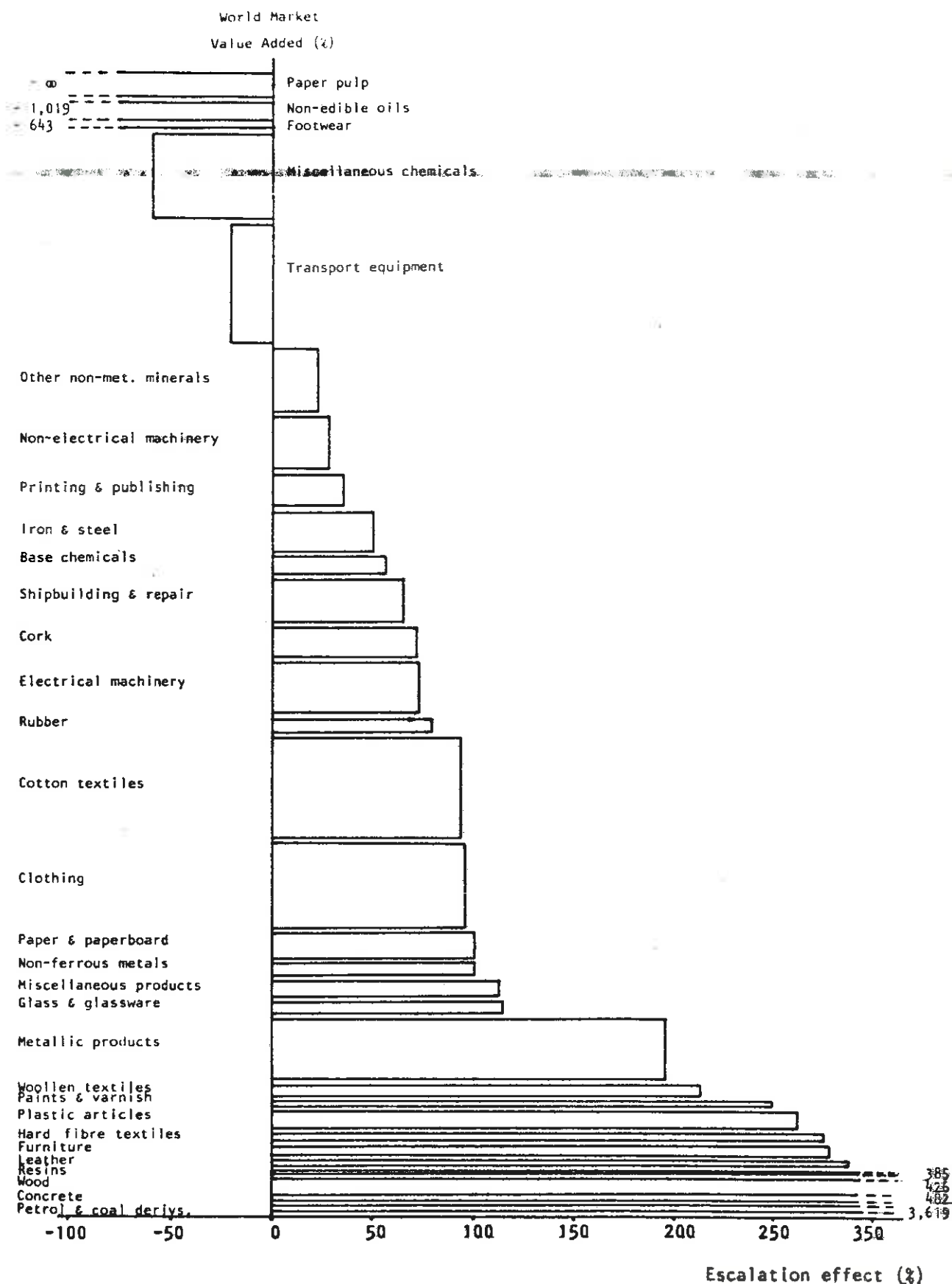
A P P E N D I X   C

SOURCES, DATA AND STATISTICAL PROCEDURES USED IN THE CROSS-SECTION

REGRESSION MODEL OF TRADE PRESENTED IN CHAPTER 9

I) SOURCES

The dependent variables A and B are valued CIF and FOB respectively, and measured in current prices, thousand US dollars. The source was the OECD Statistics of Foreign Trade, Series C.

Variables X and M are valued FOB and CIF respectively, and measured in million US dollars. The information was collected in the individual countries' tables of the UN Yearbook of International Trade.

The geographical concentration ratios CX and CM were obtained for the years 1972, 1975, 1978 and 1981 from the UN Yearbook of International Trade.

Geographical distance (D) was defined as the shortest navigable distance between Lisbon and the main port of the partner country, plus the overland distance from this port to the economic "centre of gravity" of the country concerned. In the case of Continental Western European countries, the road distance was considered if shorter than the correspondent sea distance. The relevant information was collected from R. W. Caney and J. E. Reynolds (1976). The information about ports and hinterland distances was directly collected from Table A.3 published in H. Linnemann (op. cit., pp. 223-5).

Estimates of capital-labour ratios for 35 countries were available in H. Bowen (1983). The ratios of the missing countries were obtained indirectly through the predicted values taken from the following OLS regression run over the original 35 observations:

$$\ln (K/L)_i = -5.909 + 0.941 \ln (Y_{pc})_i$$

where Y_{pc} is GDP per capita (R square is 0.953).

The values of the trade conformity indices SX and SM were computed from expression (4). They depend on the chosen level of disaggregation. The more detailed it is, the less probable for a given supply of a specified product to meet the correspondent demand. Therefore, the value of the index decreases with the size of the trade vectors. Eleven commodity groups were considered in both the export and the import models. The source of data was the UN Yearbook of International Trade.

II) DATA

Table C1

Data not directly found in the published statistics

Countries	D	K	SX	SM	P_{efta}	P_{eec}	P_{uk}
Canada	3420	12.463	70.77	51.92	1	1	1
U.S.A.	3505	11.27	95.21	65.68	1	1	1
Japan	10340	8.24	92.16	80.18	1	1	1
Australia	10200	9.981	53.06	70.54	1	1	1
New Zealand	10540	8.633	51.47	67.27	1	1	1
Austria	1509	8.14	83.87	77.13	2	1	1
Belgium	1107	8.679	86.86	72.12	1	2	1
Denmark	1587	9.03	89.85	75.54	1	1	2
Finland	2010	10.219	51.25	67.45	2	1	1
France	900	11.353	95.92	73.89	1	2	1
Germany	1275	9.422	97.91	83.25	1	2	1
Greece	1917	3.98	42.65	47.77	1	1	1
Iceland	1676	7.517	20.0	76.63	2	1	1
Ireland	1010	4.757	83.73	74.94	1	2	1
Italy	1200	6.56	83.06	65.64	1	2	1
Netherlands	1110	8.984	93.32	78.69	1	2	1
Norway	1912	13.314	50.4	72.61	2	1	1
Spain	350	5.61	73.68	56.34	1	1	1
Sweden	2080	12.438	90.78	72.22	2	1	1
Switzerland	1193	11.422	90.45	77.79	2	1	1
Turkey	2275	1.071	22.5	46.76	1	1	1
Un. Kingdom	1155	6.01	96.56	73.68	1	1	2
Yugoslavia	2157	1.165	80.4	59.47	1	1	1

(III) Preliminary regressions for the analysis of specification and multicollinearity

Besides the forward procedure of specification choice described in the main text, we decided to carry out in more detail the comparative study of the effects of adding the variables representing resource endowments (K) and commodity-composition of trade (SX and SM). To this purpose, we chose the equations describing the determinants of Portuguese exports and imports, in the periods 1971/73 and 1980/82.

Starting with exports, the following table presents the simple correlation coefficients in both periods:

Table C 2
Simple correlation coefficients - Exports

	P_{efta}	P_{eec}	P_{uk}	M	D	CM	SM	K	B
P_{efta}	1	-.3529	-.1833	-.3238	-.0941	-.0419	.2968	.3268	.1637
				(-.3411)		(.0495)			(.048)
P_{eec}		1	-.1833	.3462	-.4167	.1187	.3309	.0959	.1664
				(.3779)		(-.0052)			(.427)
P_{uk}			1	.1086	-.1342	-.3616	.1732	.0114	.3602
				(.1091)		(-.2209)			(.2819)
M				1	-.1022	.1287	.177	.3972	.7174
					(-.0944)	(.0239)	(.2176)	(.3786)	(.7402)
D					1	.182	-.0239	.1004	-.3356
						(.1281)			(-.5291)
CM						1	-.0755	.1906	-.0846
							(-.1567)	(.0905)	(-.2788)
SM							1	.5621	.3927
									(.3931)
K								1	.6433
									(.4689)
B									1

Note: Figures between brackets refer to period 1980/82.

The matrix of correlation coefficients provides an indication of which variables are likely to be the more interrelated, in the sense that a change in one of them affects not only the dependent variable but also other dependent variables. However rude this method is, it does not suggest that multicollinearity might be a major problem in the export equation, as coefficients between independent variables are small.

Next, we compared the results of three OLS regressions, without and with each one of the variables in question, K and SM.

Table C 3

Preliminary regressions with the export model

1971/73 and 1980/82

		Constant	M	D	P_{efta}	P_{eec}	P_{uk}	CM	K	SM	$\bar{R}^2$
I		1.002	1.144***	-.24	2.766***	.476	3.025***	-.109			.787
		(2.521)	(.157)	(.251)	(.649)	(.739)	(.997)	(.441)			
II		.662	1.142***	-.251	2.723***	.428	2.982**	-.106		.105	.773
		(6.196)	(.165)	(.314)	(.98)	(1.102)	(1.254)	(.458)		(1.748)	
III		4.285**	.904***	-.505**	1.466**	-.19	2.296***	-.298	.869***		.854
		(2.379)	(.154)	(.228)	(.702)	(.655)	(.864)	(.371)	(.302)		
IV		6.969***	.958***	-.507***	2.014***	1.054**	1.74***	-.813***			.918
		(1.469)	(.088)	(.14)	(.366)	(.421)	(.543)	(.222)			
V		10.916***	.986***	-.385**	2.52***	1.592***	2.225***	-.881***		-1.218	.921
		(3.45)	(.089)	(.168)	(.539)	(.594)	(.658)	(.225)		(.967)	
VI		8.211	.866***	-.835***	1.511***	.799**	1.503***	-.613***	.341**		.929
		(1.525)	(.096)	(.207)	(.436)	(.416)	(.522)	(.143)	(.184)		

Note: Standard errors between brackets; (*), (**) and (***) indicate that the estimate is statistically different from zero at margins of error of 0.1, 0.05 and 0.01, respectively, after performing a two-tail test.

From the correlation matrix we may conclude that Portugal tends to export more to countries where import structures fit well with the Portuguese export structure. However the estimated coefficients presented in Table C 3 fail to present evidence of a significantly positive effect of trade-composition within the general explanatory model. Instead, the introduction of SM is responsible for a substantial increase of the remaining variables'

standard deviations, which is a clear sign of the presence of multi-collinearity associated to SM. The increase in standard deviations is particularly high in the case of the three preference variables (cf. their correlation coefficients). This result confirms the dominantly inter-industry pattern of trade between Portugal and the members of EFTA and the EEC. Therefore, the separate estimation of the effects of preferential arrangements and the commodity-composition of trade is not possible to carry out under the present model structure.

On the other hand, the estimated coefficients of K fully confirm expectations derived from the correlation table, as they show positive sign and significant size in both periods. Moreover, there are no signs of the presence of K being responsible for multicollinearity. Instead, it added explanatory power to the regression equation in both periods as shown by the increase in size of the adjusted coefficient of determination and the change in size of the coefficients of distance and of the preference variable as between equations I and III (IV and VI). Not adding K would bias the estimated effects of preferences upwards as these would absorb some of the effects of the overall K -abundance of EEC and EFTA members.

Having justified the inclusion of K (but not of SM) into the export equations, we proceed to the import model. The simple correlation matrix in Table C 4 suggests that some problems may arise due to the strong co-rrelation between the size of foreign manufactured supply on one side, and capital-labour ratios and commodity-composition of trade, on the other. This result confirms the direct implication of the factor-proportions theory of trade: the most capital abundant economies tend to be the largest exporters of manufactured goods (capital-intensive in relation to food, raw materials and semi-processed materials), and these in turn tend to have exports concentrated in more capital-intensive varieties (those that Portugal imports most). Moreover, we observe that between 1971/73 and 1980/82 the relation between K and X became weaker, which may be a result of a progressively more-skilled-intensive nature of manufactured goods.

Table C 4

Simple correlation coefficients - Imports

	P_{efta}	P_{eec}	P_{uk}	X	D	CX	SX	K	A
P_{efta}	1	-.3321	-.1715	-.0315 (-.0879)	-.0834	-.3165 (.1158)	-.0302	.3446	.1469 (.0593)
P_{eec}		1	-.1936	.3564 (.372)	-.4264	.2016 (-.016)	.3755	.0986	.3079 (.4232)
P_{uk}			1	.1074 (.0629)	-.1376	-.2863 (-.2977)	.2248	.0124	.2012 (.1598)
X				1	-.182 (-.2204)	-.1404 (-.112)	.7876 (.7541)	.5144 (.3971)	.9049 (.8966)
D					1	.325 (.149)	-.284	.1012	-.182 (-.5269)
CX						1	-.0683 (-.0232)	.1371 (.0449)	-.4003 (-.2464)
SX							1	.4628	.7772 (.7954)
K								1	.4553 (.4261)
A									1

Note: Figures between brackets refer to period 1980/82.

As shown in Table C 5, the regression estimates for the period 1971/73 do not reveal a clear positive effect of either variable, which, together with the increase in standard deviations, especially apparent when comparing equations I and III, confirms the presence of multicollinearity. Between the first and the last period,this presence is likely to become weaker, as both correlations between K and X, and between SX and X, decrease. Therefore, the separate influence of these two variables upon the distribution of imports is allowed to be picked up more strongly. The roles of the capital-labour ratio and the commodity-composition of trade are not strickly identical, however (cf equations V and VI). On the basis of its more general use (mainly in disaggregated equations) we preferred the inclusion of K into the general model.

Table C.5

Preliminary regressions with the import model

	Constant	X	D	P_{efta}	P_{eec}	P_{uk}	CX	K	SX	$\bar{R}^2$
I	7.642***	1.337***	-.923***	.828*	-.469	.463	-.781**			.97
	(1.585)	(.078)	(.181)	(.474)	(.543)	(.668)	(.32)			
II	5.745**	1.232***	-.892***	.745*	-.559	.213	-.856***		.657	.97
	(2.234)	(.117)	(.18)	(.473)	(.541)	(.691)	(.322)		(.553)	
III	7.592***	1.34***	-.92***	.848*	-.464	.474	-.773**	-.015		.97
	(1.871)	(.1)	(.195)	(.611)	(.572)	(.72)	(.361)	(.269)		
IV	5.529**	1.274***	-.774***	1.215**	.509	.894	-.53*			.92
	(2.065)	(.102)	(.2)	(.542)	(.607)	(.781)	(.308)			
V	2.778	1.068***	-.77***	1.009**	.194	.268	-.65**		1.22**	.941
	(2.259)	(.134)	(.18)	(.497)	(.565)	(.761)	(.282)		(.571)	
VI	6.887***	1.189***	-.932***	.607	.145	.547	-.553**	.468**		.938
	(2.036)	(.105)	(.203)	(.595)	(.592)	(.744)	(.284)	(.247)		

See note in Table C.3.

IV) <u>Tests for heteroscedasticity - Glejser method</u>

Table C.6

OLS Regressions of absolute residuals on distance

		Intercept	D
Aggregate Imports	1971/73	- .514 (.479)	.116* (.063)
	1974/76	-1.424** (.533)	.243*** (.07)
	1977/79	- .182 (.596)	.0629 (.0783)
	1980/82	- .351 (.602)	.0929 (.0791)
Chemical Imports	1971/73	-2.51 *** (.777)	.391*** (.102)
	1980/82	-1.242 (.746)	.224** (.098)
Textile Imports	1971/73	.805 (1.215)	-.0285 .16
	1980/82	-4.596*** (1.481)	.72 *** (.195)
Miscel. Imports	1971/73	-2.165 (1.344)	.369** (.177)
	1980/82	- .135 (1.08)	.0826 (.142)

<u>Final note</u>: All regressions were run with a Shazam Package (Version 4.5). Use was made of the subproblem commands "Ordinary Least Squares", "Generalized Least Squares" and "Hypothesis Test".

A P P E N D I X   D

DEFINITION OF VARIABLES, SOURCES, DATA AND STATISTICAL TESTS USED IN
THE TIME-SERIES REGRESSION MODEL OF TRADE PRESENTED IN CHAPTER 10

(I) DEFINITION OF VARIABLES

i = W, P, N, EEC, EFTA, UK, SP and ROW

W = All countries in the world

P = "Preferred" countries, sum of EEC, EFTA and UK

N = "Non-preferred" countries, sum of SP and ROW

EEC = Belgium-Luxembourg, France, Germany, Italy and Netherlands

EFTA = Austria, Finland, Norway, Sweden and Switzerland

UK = United Kingdom and Denmark

SP = Spain

ROW = Rest of the world

P_i = Average index of export unit value, in US dollars, of the ith source of import, 1975 = 1.00

PD = Wholesale price index of Portugal, home goods only, converted into US dollars, 1975 = 1.00

T_i = Index of average tariff (including surcharge) applied to the ith source of import, 1975 = 1.00

$R_i = \frac{P_i}{PD} \cdot T_i$ = Average index of relative price of imports from the ith source, inclusive of tariffs, 1975 = 1.00

$\bar{M}_i$ = Portuguese imports of manufactured products from the ith source, current CIF prices, thousand US dollars

$M_i = \bar{M}_i / P_i$

$S_p = M_p / M_w$ = Share of "preferred" countries in total imports

$S_n = M_n / M_w$ = Share of "non-preferred" countries in total imports

$S_{eec} = M_{eec} / M_p$ = Share of the EEC (6) in imports from "preferred" countries

$S_{efta} = M_{efta} / M_p$ = Share of EFTA in imports from "preferred" countries

$S_{uk} = M_{uk} / M_p$ = Share of U.K. and Denmark in imports from "preferred" countries

$S_{sp} = M_{sp} / M_n$ = Share of Spain in imports from "non-preferred" countries

$S_{row} = M_{row} / M_n$ = Share of the "rest of the world" in imports from "non-preferred" countries

Y = Portugal's GDP in constant prices and exchange rates, million US dollars, base 1975

$Q = \log \left(\frac{I}{I^*} \right) \times 100$ = Pressure of demand variable, where I is the

actual index of industrial production and I^*
is its semi-logarithmic trend value

D = Dummy variable, accounting for the increased presence of non-tariff barriers after 1975. It takes value 1 until 1974 (inclusive) and zero afterwards

(II) DETAILS ABOUT THE CONSTRUCTION OF VARIABLES:

a) Prices

Individual countries' indices of export unit value, in US dollars, were obtained from the International Financial Statistics Supplement on Trade Statistics, IMF, 1982. Individual prices were averaged, by means of trade weights, in order to provide values for the variables P_{eec}, P_{efta}, P_{uk}, P_{sp} and P_{row}. These in turn were successively averaged in order to construct variables P_p, P_n and P_w.

The weights reflect the share of each country or area in Portuguese manufactured imports, in 1972.

Table D - 1

Trade weights used for averaging

			X_i		Z_i
Switzerland	.456	EFTA	.168	P	.815
Austria	.141				
Finland	.04				
Norway	.038				
Sweden	.325				
United Kingdom	.949	UK	.262		
Denmark	.051				
Belgium	.077	EEC	.57		
France	.191				
Germany	.488				
Italy	.178				
Netherlands	.066				
Spain		SP	.298		
U.S.A.	.5	ROW	.702	N	.185
Japan	.5				

b) Tariffs

The tariff index in year t is:

$$T_{it} = \frac{1 + \theta_{it}}{1 + \theta_{i0}}$$

where θ_i is the average tariff rate (including surcharge) levied on manu-factured imports from source i and 0 is the base year (1975).

Direct calculation of the average tariff rate in manufactured products could not be made for every year. Instead, direct averages were computed for the years 1959, 1970, 1978 and 1980 (2nd semester), which are presented at the 2 -digit SITC level in Appendix B, and estimates were done for the intermediate years by indirect means.

Unweighted arithmetic averaging was used in each of the direct calculations, according to an uniform procedure. The middle point between the two extreme rates within a specified 4 -digit BTN group served as the average rate for that group. These rates were in turn averaged in order to produce 3 -digit SITC product rates, and finally, these were averaged in order to produce the overall rate.

Until July 1980, the Portuguese Tariff contained a large number of specific duties for manufactured products. Their conversion into "ad valorem" rates was achieved by dividing the Escudo value of the duty applying to a particular commodity by its unit value in Escudos. Import unit values were obtained from the "Estatísticas do Comércio Externo", INE, Lisbon.

For performing this task, considerable help was obtained in the following publications: Political and Economic Planning (1962) for the 1959 tariff rates and GEBEI (1970-4) for the 1970 rates.

Duty exemptions and reductions other than those related to the preferential trade agreements were not considered, both for difficulties in obtaining the correspondent data, and because the exemptions and reductions are often granted 2 or 3 years after the actual import has been taken place.

Once calculated the average rates for the reference years, one has estimated the rates for the intermediate years, according to two different groups of trends:

-the trends resulting from the tariff cuts programmed in the Stockholm Convention and the 1972 Trade Agreement, as well as in their subsequent amendments;

-the "autonomous" trend of changes in the "ad valorem" equivalents of specific duties that result from price and product-mix variations.

For each intermediate year and each bloc (EFTA, EEC or MFN countries) the average tariff rate was calculated according to the formula:

$$\theta_t = S_t \left(\frac{\theta\alpha}{1 - S\alpha} \right) e^{gt}$$

$$\text{and } g = \frac{\ln \left(\frac{\theta w}{1 - Sw} \right) - \ln \left(\frac{\theta\alpha}{1 - S\alpha} \right)}{N}$$

where θ_t is the tariff rate in current year t.

$\theta\alpha$ is the tariff rate directly calculated for base year α.

θw is the tariff rate directly calculated for final year w.

S_t, S_α and S_w are weighted averages of rates of tariff reduction, that were scheduled for years t,α and w, respectively.

N is the number of years between α and w.

($S\alpha$ is zero in 1960, and all S are zero for m.fn. countries).

The surcharge rates were directly estimated for the years 1978 and 1980, according to an identical procedure to that used for tariffs. For the remaining years (after 1975) the computation of the average surcharge rate took into account the shares of the different rates in total imports, and its evolution.

Official sources were used for the computation of tariff and surcharge rates.

c) Imports

The nominal CIF import values were collected from the OEEC and OECD Statistics of Foreign Trade, in thousand US dollars. Manufactured trade was considered to include all products in SITC Sections 5 to 8, except product group 667 (Pearls and precious stones), 734 (Aircraft) and 735 (Ships and boats).

Nominal values of imports from each individual source at the more disaggregate level (i.e. EEC, EFTA, UK, Spain and Rest of the World) were deflated by the respective export price index. Real imports for more aggregate

sources (i.e., "preferred" countries, "non-preferred" countries and total) were obtained by simple summation of the respective elements.

Therefore, a slight difference is likely to occur as between the implicit price deflators for the aggregate sources and their respective average export price indices.

d) Other variables

The sources for data on GDP and industrial production was the IMF International Financial Statistics, 1982. The pressure of demand variable was constructed according to a formula suggested by Adams et al. (1969).

III) DATA

Table D.2

1] FIRST STAGE IMPORT EQUATION : 1960-80 : LINEAR

	YEAR-1	PW	PD	TW	X	PB/PD	RW	D	MW
5]	1961	.44	.362	1.088035	6625	1.171512	1.15905	.9710027	619510.
6]	1962	.443	.382	1.087287	7275	1.159685	1.272503	-4.04040	744616.3
7]	1963	.452	.391	1.089395	7639	1.156010	1.259352	-1.40845	786232.8
8]	1964	.456	.391	1.087642	8136	1.166240	1.268452	2.620087	923980.6
9]	1965	.465	.409	1.085889	8790	1.136919	1.234568	1.624016	1121905.
10]	1966	.476	.427	1.085889	9557	1.114754	1.210499	.1890759	1240957.
11]	1967	.48	.471	1.077125	9803	1.019109	1.097707	-1.58172	1238244.
12]	1968	.471	.507	1.077125	10668	.9289940	1.000643	1.307189	1402165.
13]	1969	.485	.533	1.076248	10872	.9099437	.9793259	3.343465	1580731.
14]	1970	.51	.542	1.067484	11885	.9409594	1.004459	6.082036	1838779.
15]	1971	.542	.551	1.049956	12668	.9836660	1.072806	-2.75952	2014214.
16]	1972	.6	.624	1.034180	13685	.9615384	.9944743	2.689485	2183074.
17]	1973	.717	.766		15215	.9361313	.9360313	-4.43696	2403613.
18]	1974	.992	.936	.9754601	15389	.9427976	.9151835	14.78571	2862235.
19]	1975	1	1		14722	1	1	-1.57480	1952573
20]	1976	.995	1.023	1.056091	15712	.9726295	1.027185	-4.84900	2294815.
21]	1977	1.096	1.041	1.102541	16620	1.052833	1.160793	-.42553	2543618.
22]	1978	1.267	1.273	1.082383	17149	.9921445	1.073881	-1.02929	2778299
23]	1979	1.47	1.509	1.006114	17524	.9741550	.9801314	-1.73567	2404451.
24]	1980	1.675	1.419	.9594829	18910	1.180408	1.167994	-3.42465	2590174.

Table D.3

```
1:SECOND STAGE IMPORT EQUATIONS - 1961-80
2:
3.  YEAR-1    Y         Sp        Sn        D    Rp(-1)  Rn(-1)
4:------------------------------------------------------------------
```

	YEAR-1	Y	Sp	Sn	D	Rp(-1)	Rn(-1)
5:	1961	.4615919	.8797368	.1202632	1	1.224	1.338
6:	1962	.4941584	.9048698	.0951302		1.251	1.332
7:	1963	.5188833	.8797536	.1202464		1.255	1.338
8:	1964	.5526423	.8633410	.1366590	1	1.247	1.316
9:	1965	.5743486	.8800019	.1199981	1	1.264	1.289
10:	1966	.6172395	.8893643	.1106357	1	1.228	1.267
11:	1967	.6658742	.8946111	.1053889	1	1.203	1.24
12:	1968	.7246298	.8874565	.1125435	1	1.082	1.158
13:	1969	.7384866	.8820656	.1179344	1	.984	1.066
14:	1970	.8072952	.8479055	.1520945	1	.965	1.029
15:	1971	.8604809	.8313083	.1686917		.993	1.056
16:	1972	.9295612	.8246722	.1753278		1.028	1.053
17:	1973	1.033487	.8192427	.1807573	1	.992	1.006
18:	1974	1.045238	.8117970	.1882030		.931	.954
19:	1975	1	.8012361	.1987639		.906	.978
20:	1976	1.068608	.8050244	.1949756		1	
21:	1977	1.128923	.7956812	.2043388	0	1.013	1.056
22:	1978	1.164855	.7905616	.2094384	0	1.151	1.201
23:	1979	1.217498	.7624122	.2375878	0	1.077	1.052
24:	1980	1.284472	.7275801	.2724199		.988	.936

Table D.4

```
1:THIRD STAGE IMPORT EQUATIONS : 1961-80
2:
3: YEAR-1  Seac     Suk      Sefta    Rsp     Srow     Reec(-1) Refta(-1) Ruk(-1) Rsp(-1) Rrow(-1)
4:------------------------------------------------------------------------------------------------------
```

	YEAR-1	Seac	Suk	Sefta	Rsp	Srow	Reec(-1)	Refta(-1)	Ruk(-1)	Rsp(-1)	Rrow(-1)
5:	1961	.6466607	.2184684	.1348708	.1341590	.8658410	1.196	1.094	1.372	1.253	1.373
6:	1962	.6129247	.2381168	.1489584	.1244237	.8755763	1.238	1.104	1.373	1.237	1.772
7:	1963	.6349496	.2223316	.1427187	.1211862	.8788136	1.243	1.098	1.384	1.355	1.33
8:	1964	.6301707	.2265035	.1433258	.1293786	.8706214	1.249	1.063	1.358	1.39	1.284
9:	1965	.6285651	.2225352	.1488997	.1642736	.8357264	1.263	1.102	1.371	1.321	1.276
10:	1966	.6034610	.2199108	.1765282	.1775641	.8224359	1.22	1.075	1.345	1.335	1.236
11:	1967	.6074523	.2310142	.1615335	.2266521	.7733479	1.189	1.047	1.333	1.334	1.291
12:	1968	.5941197	.2357047	.1601760	.2644690	.7355310	1.175	.942	1.182	1.246	1.121
13:	1969	.5926849	.2404660	.1655691	.2789361	.7210639	.994	.873	1.027	1.112	1.045
14:	1970	.5822177	.2444639	.172164	.2621695	.7378395	.922	.848	1.01	1.037	1.027
15:	1971	.5852862	.2375520	.1772118	.2859957	.7140043	1.003	.869	1.039	1.031	1.065
16:	1972	.5773809	.2429063	.1797128	.2963828	.7036172	1.033	.914	1.083	1.024	1.066
17:	1973	.5966201	.2202776	.1831023	.2823287	.7176713	1.001	.892	1.027	1.012	1.002
18:	1974	.6392067	.1979872	.1629041	.3031206	.6968794	.962	.863	.905	.966	.945
19:	1975	.6273446	.1549162	.2160442	.2673359	.7326650	.92	.672	.652	.483	.976
20:	1976	.6591711	.1949645	.1499694	.3369455	.6630545			1		
21:	1977	.6513513	.1729044	.1633523	.3201989	.6798011	1.005	1.049	1.006	1.067	.992
22:	1978	.6661539	.1915868	.1462073	.3786675	.6213315	1.126	1.164	1.197	1.234	1.187
23:	1979	.6831144	.1758199	.1408566	.3710416	.6289584	1.031	1.112	1.16	1.001	1.074
24:	1980	.6971735	.1619967	.1408708	.3315765	.6684235	.937	.995	1.107	.961	.925

IV — STATISTICAL TESTS

a) Hypothesis testing of linear restrictions on the parameters

Given the model described in equation (2), one wished to test the null hypothesis $\alpha_3 = \alpha_4$. To this purpose, two regressions were run: the first one is unconstrained, i.e., includes two separate variables, for tariffs and prices; the second one constrains the price and tariff variables to have the same coefficient.

Table D.5

	Constant	Y_t	Q_t	P_w/PD_{t-1}	$T_{w_{t-1}}$	$(P_w/PD)T_{w_{t-1}}$	RSS
1	.111*** (.0382)	1.2*** (.0946)	.0113** (.0048)	-.719** (.353	-.178 (.664)		.09757
2	.131*** (.0228)	1.2*** (.0929)	.0118** (.0046)			-.574** (.268)	.10035

The well known statistic

$$F^* = \frac{RSS_2 - RSS_1}{RSS_1 / (N-K)}$$

where N is the number of observations and K the number of explanatory variables, is compared to the value of the F distribution, with 1 and 16 degrees of freedom, for a 5% level of significance. As $F^* = .45588$ and $F_{0.05}(1,16) = 4.49$ we must conclude safely for the acceptance of our hypothesis, i.e., that $\alpha_3 = \alpha_4$.

b) Hypothesis testing of stability over time

Each of the equations described in (6) was regressed twice. All observations from 1961 to 1980 were included in regressions of type one, whereas those falling between 1975 and 1980 were excluded in regressions of type two. Table D shows their respective sums of squared residuals, which were used to compute the following statistic:

$$F^* = \frac{(RSS_1 - RSS_2) \, / \, 6}{RSS_2 \, / \, (14-K)}$$

where K stands for the number of explanatory variables in the equations.

Table D .6

Dep. variable	Stage	RSS_1	RSS_2	F^*
$\log M_w$	I	.10035	.04092	2.663
S_p	II	.0052	.00393	.5901
S_{eec}	III A	.00531	.00274	1.7264
S_{efta}	III A	.00338	.00152	2.2432
S_{uk}	III A	.00552	.00089	9.5386
S_{sp}	III B	.01613	.00759	2.061

As the value of $F_{0.05}(6,11)$ is 3.09, statistical evidence of instability of the regression parameters over time was found only in Stage III A, particularly in the regression describing the import share of UK and Denmark.