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AN EXAMINATION OF THE METHODS AND EFFECTS OF RESTRICTING EXTERNAL TRADE WITH PARTICULAR REFERENCE TO THE NEW ZEALAND EXPERIENCE (1938-68).

by

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Chapter 1

Introduction

A notable feature of economic activity since the second world war has been the growth of international trade, which has tended to increase relative dependence on trade, thus placing a larger section of the national economy outside the control of normal monetary and fiscal policy. Thus, between 1960 and 1970, the real G.N.P. of the Industrial Nations of the world increased by just over a half; during the same period the volume of trade of these nations increased by 119%. One of the features of this growth in trade has been an increasing specialisation, especially among industrial nations - making exports dependent on a narrower range of goods, more sensitive to market changes. At the same time, a much wider range of importable goods has become available, making a larger section of the internal economy sensitive to the winds of foreign competition.

New Zealand has been something of an exception to this rule. Since the war, she has become somewhat less dependent on trade. Her relative dependence, measured as $\frac{\text{Exports + Imports}}{\text{Gross Dom. Prod.}}$ (current prices, Imports at C.D.V.) was 46.3% in 1950/51, gradually falling to 41.8% in 1960/61, and 36.7% in 1970/71. This is insufficient evidence on which to make too sweeping a generalisation, but it is significant that those nations which had the more liberal trade policies - Japan, Germany, Sweden - experienced pro-trade biased growth, while a country like New Zealand

with stringent control policies, had anti-trade biased growth. And economic growth itself was somewhat slower in New Zealand, averaging about 1.5% in real terms during the 1950s, 1.3% in the 1960s.

The external threat to internal stability takes two forms.

1. Balance of payments disequilibrium - surplus or deficit - can disturb the steady growth of an economy. For example, Britain's post war growth policies have suffered from the 'stop-go' alternation of rapid expansion and relative stagnation largely as a result of the constraints imposed on the economy by the serious deficits which occur after each period of expansion. On the other side, West Germany's major economic goal - price stability - has been constantly threatened by the inflationary pressures of recurring surpluses. Changes in the flow of foreign payments lead to changes in internal monetary volume, changes in levels of real and monetary demand, re-distribution of income and re-adjustment of production. The causes of disequilibrium can be structural market changes like changing foreign taste or new products; or they can be random events like distant wars or the political decisions of foreign governments. A national government, particularly in the small country case which is assumed throughout this work, can hope to offset the effects of external events, but has little control over the events themselves.

2. Industries engaged in the production of goods which compete with imports can be severely affected by changes in international prices and by the appearance of new substitute products in the world market. In an established industry, the sudden appearance of competitive foreign products can bring loss of income, unemployment to a sector of the economy and possible economic decline to a region. An infant industry, trying to establish itself in a world dominated by large international corporations, may face insuperable obstacles.

The imposition of restraints on external trade can have one or both of the aims - to maintain balance of payments equilibrium and to protect internal industry. But both intentions arise from the desire to insulate an internal economy from the effects of external, uncontrollable events.

The forms of trade restraint are almost innumerable, but can be reduced to a few broad categories.

1. Tariff or Subsidy. A tax can be levied on imported goods to divert demand to the home produced goods in order to reduce expenditure on imports and/or protect the home producer. A similar balance of payments result is achieved by granting a direct subsidy to the home producer, if that subsidy reduces the price of the commodity on the home market. On the export side, balance of payments may be improved (if the relevant elasticities are favourable) if producers' exportable goods are subsidised. The tariff or subsidy may be ad valorem or specific, it may vary with the quantity of imports/exports or with fluctuations in foreign or home price levels; it may be confined to

selected products, varied in severity over a range of products, or be a general rate on all imports/exports. Variation in methods of application have marginally different results, but for the purpose of theoretical analysis a given (specific or ad valorem) tariff on a product or range of products is sufficient to show the general effect of a tariff system. The common feature of all tariff/subsidy methods is that they attempt to influence demand and supply through manipulation of the price mechanism, making the internally produced commodity relatively cheap.

2. Quantitive Controls. The obvious alternative to tariff is a restraint on the quantity of selected commodities or total imports. This manipulates the market by adjusting volume of supply, with price changes (implicit tariff) occuring as a side effect of the policy. Again, there is a wide variation in the method of administering controls. Licences to import can be issued in terms of quantity or value, with permitted items specified or in respect of a range of geeds, Licences may be in the hands of foreign supplier, domestic importing agent or domestic end-user. Origin of imports may be specified by countries or currencies, or licences issued on a global basis. The implicit tariff may be collected in form of tariff or licence fee; alternatively, resale prices may be controlled to prevent importers from obtaining monopoly profits. Clearly, depending on the administrative procedure, effects will vary, but from the point of view of theoretical analysis, it is sufficient to examine the general effects arising from a reduction in the availability of imports, and especially the demand/supply gap created by such reductions.

3. Non-Tariff Barriers. The 1969 Report of the G.A.T.T. Committee for trade in Industrial products listed some 800 non-tariff devices for impeding trade. They were grouped in thirty categories, of wiich the six most important - or perhaps the six most easily identifiable were:-

(a) 'Voluntary' quotas affecting the volume of exports by supplier nations.

(b) Customs valuation methods and procedures e.g. the American Selling Price system.

(c) Anti-dumping and countervailing duties.

(d) Public procurement policies and practices.

(e) Government aids to industry, such as regional policies, subsidies, adjustment assistance to import competition and so on.

(f) Industrial standards, including technical, health and safety requirements.

Such measures are often introduced for purposes other than trade restraint - to provide employment in depressed areas, protect the health of the consumer, prevent foreign domination of the home economy etc.; sometimes they are deliberate evasions of the spirit of G.A.T.T. rules, substitutes for the tariffs and quota controls, banned under G.A.T.T. agreements. During the last few years, especially since the two Kennedy rounds of tariff reduction, they have been under increasing scrutiny both by economists and administrators in international agencies. In terms of theoretical analysis, however, they can be regarded as having the same intent and effect as tariff or quota. They result in giving a direct price advantage to the home producer, or make it

administratively so difficult and time-consuming to obtain import clearances as to reduce the quantity of goods available.

4. Exchange Rate Adjustment Perhaps the most obvious, most direct and most effective method of correcting external imbalance is to allow the national currency to adjust its value vis-a-vis other currencies. As the International Monetary system came under increasing destabilising pressure following the return to full convertability in 1958, each year witnessed more and more demands for greater flexibility in exchange rates.

However, while exchange rate policy can be defined as a useful corrective measure in terms of balance of payments, it cannot be regarded as a policy in restraint of trade, if it is not subject to destabilising fluctuations, or used as a trade-war 'weapon' as it was in the 1930's. The purpose of the policy is to help reduce a monetary surplus and deficit, to increase international liquidity and free-up the exchange of goods and services; it is essentially a liberal trade policy. It has, for example, no function as a device for protection of specific industries. Where a devaluation takes place, some tariff-like advantage accrues to all industries competing against imports and to all export-oriented production; otherwise no protective element enters into the policy.

This thesis largely confines itself to an examination of the impact of the use of the first two measures listed above - tariff and quota, Chapter 2 surveys some standard trade theory, and Chapter 3 extends this to consider the protective nature of controls in small-market count-

ries such as New Zealand. Both chapters adopt the normal one or two commodity approach. Chapter 4 introduces a third commodity - the non-traded commodity. Most theory avoids the use of three commodities for a number of reasons:-

1. Definition of what constitutes an import, export, or non-traded good is almost impossible, (This difficulty is shelved until Chapter 9.)

2. Diagrammatically it is very difficult to handle more than two commodities and this is also left until Chapter 9.

3. The inter-relationships of three sectors makes it difficult to construct a model which is simple enough to allow for rigorous theoretical treatment, yet realistic enough to have a policy application.

Chapters 5,6,7 and 8, take the theoretical model, allot to the various sectors values which approximate to their importance in the N.Z. economy. The chapters then process a simple computer simulation model of the effects of different policies on each of the sectors under a variety of conditions - the parametric conditions being represented by elaticities of supply and demand in each sector.

Chapter 9 attempts to take the theory a stage further and examine the kind of external imbalance that can arise naturally as a result of a nation's normal economic growth, and the three commodity analysis is incorporated into a set of diagrams. There is an important departure from the normal three commodity

approach. Most theoretical analysis assumes the existence of three (or two) goods, or bundles of goods, produced for three markets. The goods are thus labelled Exports, Non-tradable and Import goods. Chapter 9 is more concerned with the market than with the product. A few goods can be clearly defined as almost exclusively produced for a specific market; e.g. in New Zealand car-repairs are generally non-traded; tea and jet aircraft are imported. But some commodities belong to two or three markets. Beef is produced both for home and foreign consumption, glassware may be imported, exported or non-traded and so on. Thus, changing market conditions can induce two reactions from producers.

(a) An alteration of production patterns to produce different commodities - the reaction of traditional theory.

(b) A re-direction of existing product towards a more attractive market.

Especially in the short run, it is the second reaction which is the more important and which allows supply to be relatively elastic. Thus, the Transformation Curves used in the diagrams of Chapter 9 might more accurately be renamed Transference/Transformation Curves, indicating that exactly the same result is evident whether an old product is re-directed or a new product introduced.

Although the main purpose of this thesis is to develop theoritical models, any examination of such a controversial topic is incomplete without some empirical work. Good theory should stand the test of practical

application and should lead broadly to the same conclusions as a study of a particular case. The case study is in many ways a much more difficult exercise because it is impossible to select from the events of a dynamic economy those which are relevant and those which are not. In a situation where many changes were taking place simultaneously, it is impossible to isolate the effects of one set of policy measures on International trade. The emergence of new technology, products, markets and nations, the efforts of International Organisations, the natural growth of New Zealand herself, were all far more important factors in the determination of New Zealand's economic destiny and trading patterns than were the, by comparison, puny efforts of legislators to manipulate our external economy. Decisions made in Washington, London, Brussels and Tokyo were in many ways more important than those made in Wellington.

In examining 'evidence' about New Zealand's Import Control policy, there is considerable conflict. Some producers, politicians and economists praised the system and some damned it. One could quite easily select evidence to 'prove' that import control had been a total success; equally one could 'prove' its failure.

In spite of these difficulties, Chapters 10 - 17 attempt to summarise the effect of quantitative controls in New Zealand. They do not pretend to present a full analysis but rather act as a test piece to see if the conclusions of the theory can be confirmed or discredited by events. The system itself is examined historically,

its motivation explained; there is a summary of the reaction of contemporary writers and commentators to methods of administration of controls and allocation of imports. For thirty years there have been periodic outbursts of criticism of import control, both of the failings of the administration and of the economic effects; comment, both pro and anti, has covered both current events, and long term assessment. Two major difficulties occur in making an historical survey.

1. Most of the comment is made by interested groups - traders, manufacturers, politicians and economists, and much of it biased by a particular viewpoint. The most important group of all - the consumers - is quite silent.

2. There is so much comment, much of it repetitious, that it is difficult to select a representative sample without danger of selecting that which supports the theoretical conclusion and discarding that which contradicts it.

Finally, the last chapter examines relevent statistical information and processes it to see if there is any evidence to show whether or not import control in New Zealand has significantly helped or hampered industrial growth, in general or in protected sectors. The general conclusion tries to tie up the results of all three approaches - theoretical, historical and empirical.

Throughout the thesis are a number of questions which keep recurring. Some - e.g. Question 3 (chapter 9) - are explicitly the concern of a particular chapter or

chapters. Others form a continuous background to which constant reference is directly or implicitly made. A list of these questions might form a useful starting point.

1. Balance of Payments. Do tariff and/or quantitative controls improve balance of payments? Are these improvements short or long term? Can trade restraints, imposed for short term adjustment, have lasting effects after they are removed?

2. Sectoral Benefit. Which groups benefit and which lose out as a result of controls? Is any (Scitovsky-type) compensation arrangement possible - e.g. by collection and reallocation of implicit tariff? To what degree are controls imposed for non-economic reasons as the result of political pressure exerted by vociferous benefitting groups?

3. If controls are to be used, which gives the most satisfactory form of protection - tariff or quota? In particular, which gives the greatest assistance to the expansion of efficient industry? Or is freer trade, with or without flexible exchange rates, a more satisfactory alternative?

4. Why are restraints on imports generally preferred to subsidies on exports or import substitutes? Theory would suggest no significant difference in economic effects.

5. If import restrictions are selective, do they have distorting effects? For example, if import licences are issued only for 'essential' commodities

such as producer goods, is internal manufacturing diverted away from 'desirable' products with high forward linkage (e.g. textiles, steel machinery) into 'luxury' products with high, (imported) backward linkage (e.g. pleasure boats, lawn-mowers and toys).

6. In a full-employment economy can the expansion of an import competing sector take place without harmful effects on others, especially export, sectors?

7. Is a nation justified in solving its own problems by policies which may harm others - i.e. by 'beggar-my-neighbour' policies? Is it likely that, especially in the long term, similar policies by foreign governments cancel out the benefits?

The study of trade restraint covers such a wide field that it is necessary to restrict the examination to a relatively narrow field. Although reference will be made to a number of important issues, it is not possible to develop them fully. Among the issues ignored are;

1. The Income distribution effects of different policies. For example, tariff and subsidy are treated as being the same policy, because their effects on balance of payments and producer protection are similar, although, through taxation and transfer payments, their effects on internal income and consumption may be very different.

2. Exchange rate adjustments is perhaps the most direct and effective means of adjustment, especially of trade imbalance and capital movements. However, from 1944 until 1968, under the post-war Bretton-Woods system, variations in rates were generally regarded as undesirable.

Smaller countries tended to 'tie' their currencies to one of the larger currencies. Over long periods of time, the rates could be assumed fixed.

3. Capital Controls. Most nations operated some control over capital movements - to adjust balance of payments, to encourage or discourage foreign investment, to counter speculation etc. Generally however, these controls were not specifically aimed at trade control, except where exchange controls were necessary as concomitant measures in support of export and import control regulations.

This study is primarily concerned with the relative merits of a free trade policy on the one hand, and a restraining policy on the other. The restraints considered are the alternatives of Tariff and Quantitative Control.

In developing the theory of trade restraint a number of general assumptions will be made, conforming to the small-country case, and particularly to the New Zealand situation in the 1939-68 period. Thus it is generally assumed that external supply is competitive - that price is given in terms of foreign currency, consequently in terms of the home currency with fixed exchange rates, and that supply at that price is infinitely elastic. This is a reasonable assumption, as the only field in which there is evidence of monopoly is in the provision of freight, insurance and financial services which have never been, and cannot be, subject to quota resrtictions. Even if supply were subject to manipulation

by the foreigner, there would be no action open to New Zealand which could influence that supply - i.e. price could still be given.

It must be acknowledged that there are exceptions to the general assumption. As a small market, New Zealand is open to the dumping of foods by large companies wishing to develop or preserve a market, or to dispose of surplus stocks. If such a dumping is of a permanent nature as may, for instance, be possible with machine tools, there is a strong argument for welcoming what is in effect, a permanent subsidy by a foreigner to the New Zealand user. Similarly, a temporary dumping may be accepted as a windfall gain, analogous to the consumer gain from periodic retail store sales, conferring a real income benefit to the recipient country, without having any serious effect on production.

Clearly, each case of apparent dumping requires separate consideration. Counteraction can be:

(a) A matching subsidy to internal producers to help them compete with the foreign product.

(b) A temporary tariff to counter the dumping.

(c) A combination of tariff on the foreign commodity, whose revenue is used to subsidise the home producer.

(d) A ban of the foreign good.

Chapter 2

The Standard Theory of Trade Control

The simplest model, developed first by Haffner and reproduced in various forms in most text-books illustrates the effect of controls on one commodity in a static competitive situation. (See Figure 2.1).

O' O represents transport cost.

Countries I and II represent importing and exporting countries respectively. Free trade equilibrium is when imports B C equal exports E F at price level O P.

If B'C' is imposed as import quota limit, competitive conditions will depress price in the exporting country to O H, and raise price in the importing country to O G.

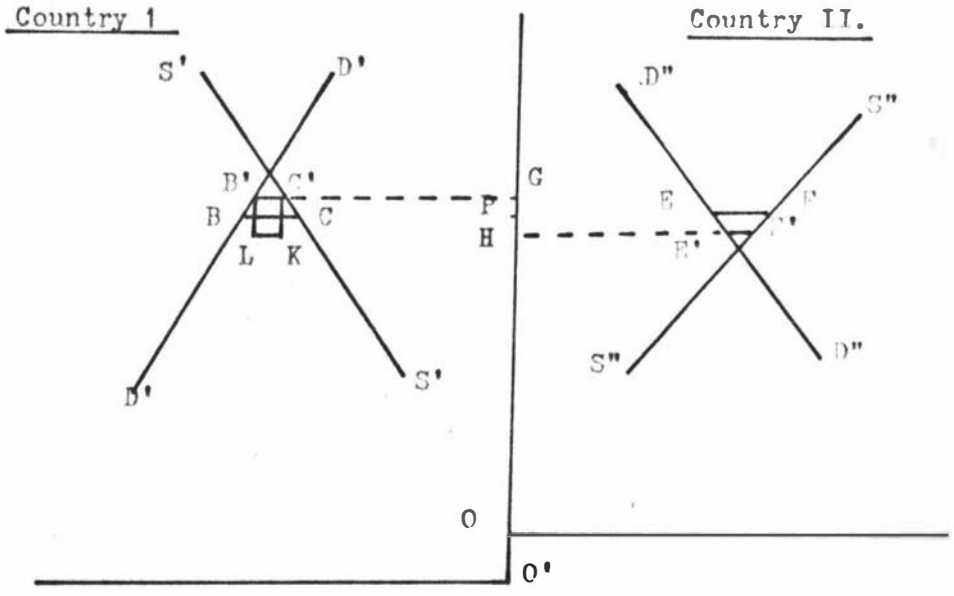
(i) Consumers in Country I move to a lower level of satisfaction as a result of a rise in price unless the income effect of reduced import payments increases real incomes sufficiently to offset price effect.

(ii) Consumers in Country II move to a higher level of satisfaction as a result of a fall in price, unless the income effect of loss of export earnings reduces real income sufficiently to offset price effect.

(iii) Foreign suppliers lose income (P F x O P - H F' x O H).

If price elasticity of demand for the commodity in Country II is less than unity, the country II producer may lose further income. The release of non-exported goods

FIG. 2.1 :



S' S' D' D'	-	Country I supply and demand
S" S"	-	Country II supply and demand
O' O	-	transport cost
O P	-	free trade price
B C = E F	-	free trade quantity
H G	-	tariff
O G (+ O O_1)	-	Country I post tariff price
O H	-	Country II post tariff price
B' C' = L K = E' F'	-	post tariff quantity

on the Country II market will reduce his income in that country. If demand elasticity is greater than unity, the Country II producer may, to some degree, offset his losses in the Country I market, by increasing sales revenue in Country II.

If Country II represents the "rest of the world", the situation is that of the availability of alternative markets for the producer. Assuming that Country I conforms to Corden's "small country case" definition, the likelihood is that supplier (Country II) faces a world demand curve of high elasticity. In such a case, the incidence of tariff would fall on the country I consumer. i.e. the terms of trade effect of tariff would be negligible.

(iv) Home producers gain income, (C' G x O G minus C P x O P) which may help to offset the consumer loss of effect (i).

(v) Holders of import licences, buying at H and selling at G, make extra profit B'C' L K. Some or all of this profit may be transferred to government by the imposition of a suitable tariff or licence fee.

This simple analysis underlines one of the most important reasons for the imposition and maintenance of controls. The people most likely to gain from control - importers and home producers - normally form a distinctive unified group within a community able to voice their opinions strongly and to influence policy decisions. Potential losers are either disunited, as with home consumers, or lacking influence, as foreign producers.

This basic model of Haffner is adapted by Heuser

(Control of International Trade, 1938) to a variety of situations. Those of significance in New Zealand are :

1. Where there is no domestic product and licences are controlled by one importer or importing group, giving monopoly in the import side.

2. Where monopoly exists in internal production and control is designed to give total or partial protection to internal producers. Heuser argues that, particularly in a small country with a relatively small market unable to support more than a few producers, a monopolistic market is likely to develop after control, even if none existed in the pre-control period.

Case 1 is illustrated in Figure 2.2.

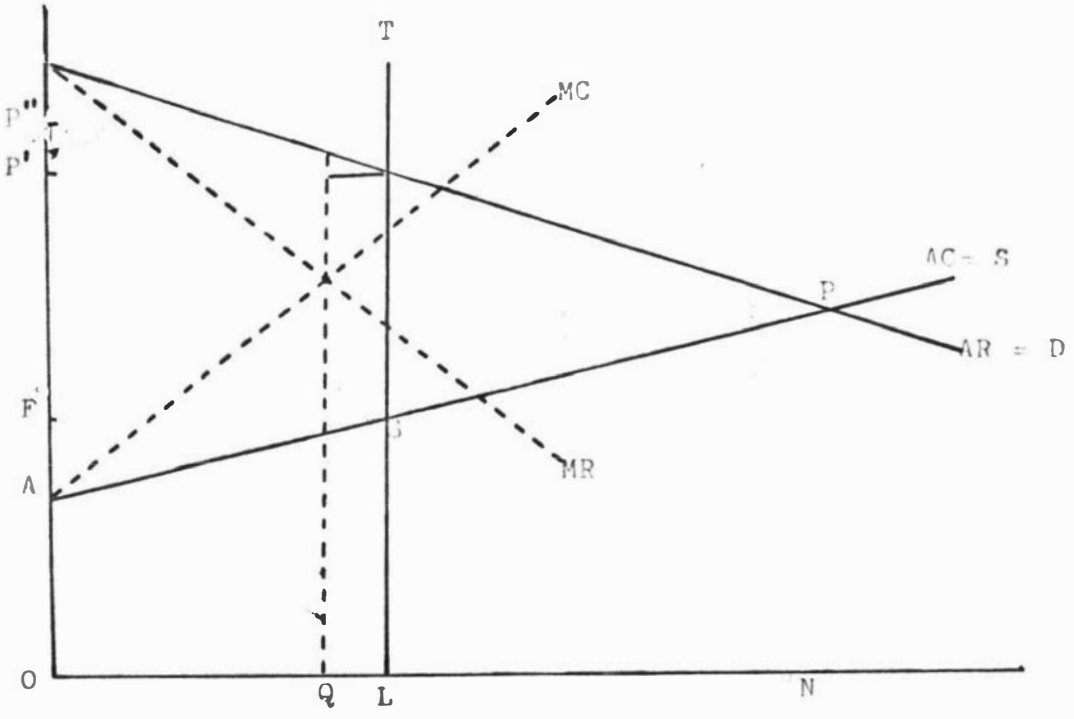
A R and M R are the demand and marginal revenue curves.

A C and M C represent the foreign supply and importer's marginal cost.

O N, O P, represent free trade quantity/ price equilibrium. If any quota, such as O L, is fixed, the new supply curve becomes A S T and, with competition among importers, price could rise to P', with P' F representing the difference between price paid to the foreign supplier and price paid by internal consumer - i.e. importer's profit or implicit tariff.

Should a monopolist control import licences and the M R/M C intersection lie to the right of L T, there would be no additional monopoly producer profit; price would remain at P_1. However, if the M R/M C intersection lay

FIG. 2.2 :



AR , MR	=	Average revenue + marginal revenue
AC = S	=	Foreign supply = importers' average cost
AMC	=	Importers marginal cost.
P	=	free, competitive equilibrium
O L	=	quota restriction
A S T	=	post quota supply
O P'	=	post quota price with full quota use
F P'	=	implicit tariff
O Q	=	possible quantity with less than full quota use
O P''	=	price with less than full quota use

to the left of L T, the monopolist would reduce imports below the permitted level (to O Q) and price would rise to P''.

It can be argued that this is not a situation peculiar to the control of imports, but a monopolistic situation which can arise whether or not control of trade exists. However, in the absence of trade-licensing, with free entry into trade, the factor most conducive to monopoly growth would not exist and monopoly would be much less likely to occur.

This model may help to explain the variation of the "wastage" of licences (see page 265) from year to year in New Zealand. Relaxing and tightening controls - moving L T right or left - seems to have had as one of its effects an increase or decrease in the amount of unused licences.

Case 2 : Heuser compares tariff and quota as alternative methods of protection to show their different effects. The tariff is illustrated in Figure 2.3.

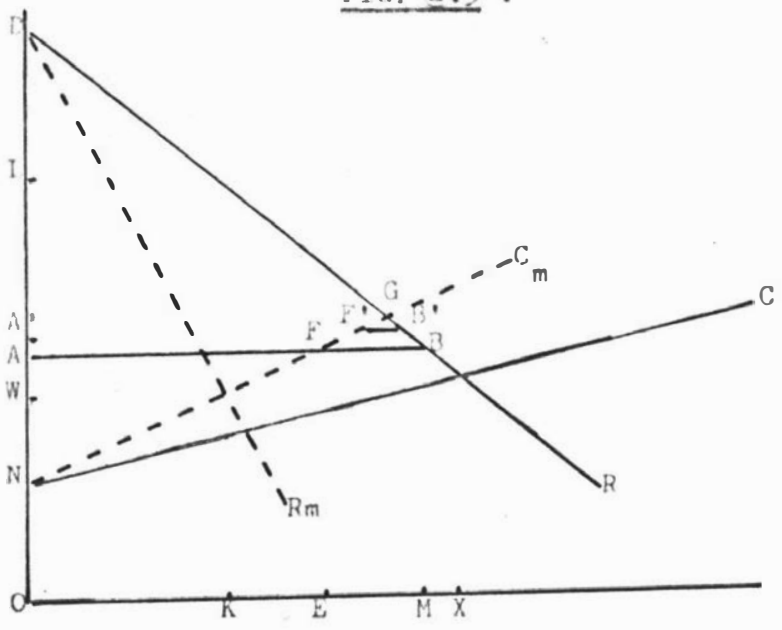
D R and D R_m are demand and M.R. curves.

N C and N C_m are cost and M.C. curves of the internal monopoly producer.

In the absence of foreign competition (or if foreign price were above O W) and with pure competition internally, O W and O X would be the market equilibrium price/quantity. With monopoly and no foreign competition price/quantity would be O L/O K.

If foreign produced goods are available at some price, like O A, above the free competition price O W, but below

FIG. 2.3 :



DR, DR_m	=	average + marginal revenue curves.
NC, NC_m	=	internal producer's cost and marg. cost.
O X, O W	=	no trade, competitive quantity, price
O K, O L	=	no trade, monopoly quantity, price
A B	=	foreign supply
O E = A F	=	internal production after trade
FB = EM	=	imports
A A'	=	tariff
A' F', F' B'	=	post-tariff internal product + imports
G	=	prohibitive tariff point.

the monopoly price O L, the effect of foreign trade is to alter the demand curve facing the monopolist to A B R, the section A B also representing marginal revenue. The monopolist's production would <u>increase</u> to A F (=O E) and the quantity F B = E M would be imported.

This situation could lead to political lobbying by the monopolistic group, asking for some form of protection. A tariff protection (of A A') raising price to O A', would further increase the internal production to A' F', reducing imports to F' B'. Above point G the tariff becomes prohibitive in the sense that there are no imports. It still performs a function, however, in that it sets a constraint above which home price may not rise without inviting foreign competition. The tariff penalises consumers in that a smaller quantity is available at a higher price, but does provide extra employment at home at the expense of the foreign supplier.

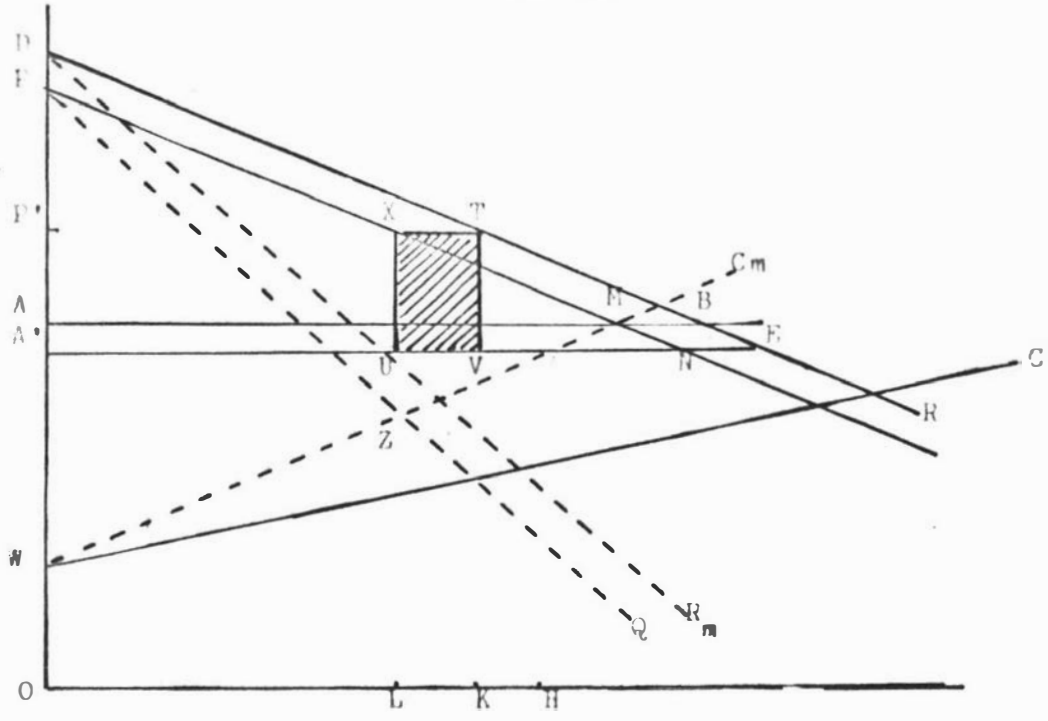
The use of a quota to protect the internal monopolist has a much different effect, illustrated in Figure 2.4.

This model attempts to trace the logical sequence of a series of events.

Initially, with foreign price O A, the monopolist produces quantity A M and quantity M B is imported. Monopoly profits are represented by the area A M W. i.e. Total Revenue (A M X A O) minus Total Cost (Area under O W M)

Assume that foreign price falls to O A', increasing imports to F E; monopoly output is reduced to A' F, and monopoly profit to A' F W. Although there has been some

FIG. 2.4 :



DR DRM	=	Average and marginal revenue
WC WCM	=	Internal producer cost and marginal cost
A M B	=	initial foreign supply
A M	=	initial internal product
M B	=	initial imports
O A	=	initial price
	=	new foreign supply
	=	new internal product
F E	=	new import quantity
	=	new price
M B = N E = L K	=	imposed quota
FNE, PQ	=	post quota average + marg. revenue
Z	=	monopoly equilibrium
P'	=	post quota price
U V T X	=	implicit tariff revenue to licence holders

consumer gain, three disadvantages may accrue to the importing nation.

(1) Producers lose some income.

(2) There may be unemployment in that sector.

(3) Balance of payments may show a deficit.

The next step is that successful lobbying causes imports to be "frozen" by quota at the original quantity M B (= N E).

The demand curve facing the monopolist changes dramatically to the line P N E R. Marginal revenue is P Q (Broken thereafter). Results are :

(1) Internal product is O L

(2) Imports are L K (= N E), unless the monopolist also holds the licences in which case they may be less than L K.

(3) Internal price is K T, foreign price K V.

(4) Monopoly profit is P Z W.

(5) Importer's profit is U V T X (shaded area).

An interesting result may be that, if the internal producer's M R and M C intersect at a point below world price, it may pay him to increase output to A F, exporting the quantity U F (= L H) at world prices. The country may thus become a net exporter.

The model, of course, ignores the likely reaction of foreign governments.

A further point ot note is that; of the quota restriction forces down world price; the internal monopolist and internal price remain unaffected. The importer

increases his profit. Internal producer's export potential is reduced.

There have been many variations and modifications of Heuser's basic model in post-war literature, notably by Fleming, Johnson, Kindleberger and Meade.

One of the most recent and most sophisticated is the analysis of J. Bhaghwati in his article "More in the Equivalence of Tariff and Quota" (American Economic Review, March, 1968) from which the notation of the following is taken. Clearly, the price effect of tariff or quota is dependent on the relative slopes of the supply and demand curves, the slopes being determined by the price elasticities of supply and demand. Three situations are analysed, it being assumed that most, if not all, markets affected by Import Control in New Zealand fall into one or other of the three categories outlined.

The following notation is used :

S_f = foreign supply.

S_d = domestic supply

P_f = foreign price

P_d = domestic price

C = Total cost of domestic product

D = Total domestic demand

D_d = That part of demand available to domestic producers.

Case 1 : Assume that there is a competitive supply from abroad, monopoly in domestic production and competition among quota holders.

t = tariff rate (actual or implicit), assumed ad valorem.

The system is built up on the following functions:

$$S_f = S_f\ (P_f) \qquad (1)$$

Foreign supply is a function of foreign price

$$D = D\ (P_d) \qquad (2)$$

Demand is a function of internal price

$$D_d = D\ (P_d) - S_f\ (P_f) \qquad (3)$$

Demand facing domestic producer is total demand less foreign supply

$$D_d = S_d \qquad (4)$$

Domestic demand equals domestic supply

$$C = C\ (S_d) \qquad (5)$$

Total cost is a function of quantity produced.

$$\frac{\delta\ (P_d\ S_d)}{\delta\ S_d} = \frac{\delta\ C}{\delta\ S_d} \qquad (6)$$

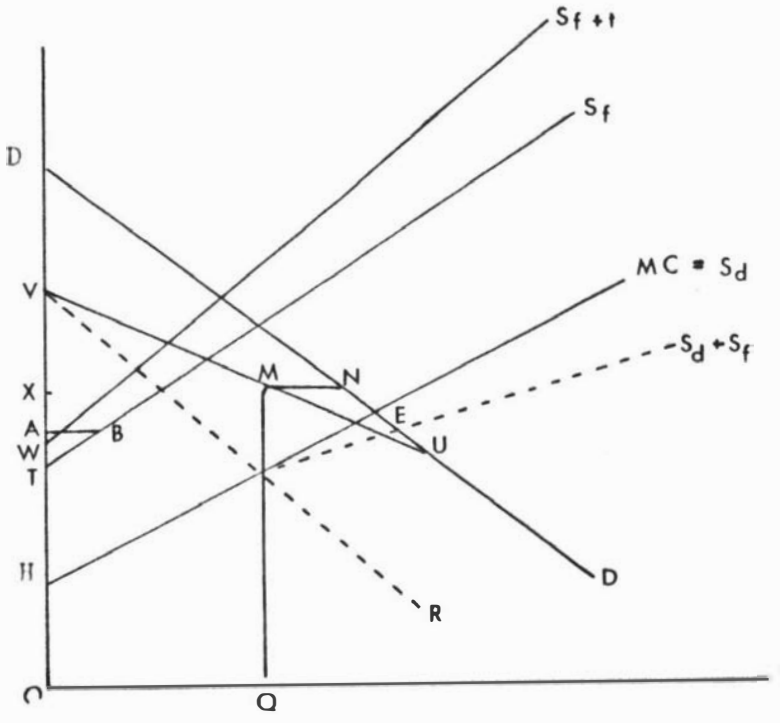
Marginal revenue is equated to marginal cost

$$P_f\ (\ 1 + t\ ) = P_d \qquad (7)$$

Foreign price is lower than domestic price by the amount of the tariff.

There are seven equations and eight unknowns. Using a tariff as an instrument of control, one unknown (t) is given and the system can be solved. The result is illustrated in Figure 2.5.

FIG. 2.5.



DD	=	Total demand, average revenue.
H MC = S_d	=	Domestic supply
T S_f	=	foreign supply
H $S_d + S_f$	=	Combined domestic and foreign supply
V U D	=	Domestic demand less foreign supply
V R	=	marginal revenue of residual demand (VUD)
E	=	free trade equilibrium (A B imported, B E home produced)
O A	=	free trade price
$\frac{W\ T}{T\ O}$	=	tariff (ad valorem)
W $S_f + t$	=	Foreign post-tariff supply
O X	=	post tariff price
X M= O Q	=	post tariff domestic product
M N	=	post tariff imports

With no trade barriers, but with internal monopoly, equilibrium is at E, where the total supply ($S_d + S_f$) curve meets the total demand. A B is imported, the rest home produced and both foreign and domestic price are equal at O A.

The imposition of an ad valorem tariff $\frac{WT}{TC}$ raises the foreign supply curve and presents the internal monopolist with a changed demand curve V U D, wich is total demand less the foreign offer at varying price levels.

The results are consistent with Heuser's model.

1. Internal price rises to OX.
2. The internal monopolist reduces product to X M (= O Q).
3. Imports are M N.

The alternative policy of import quota, equal to the MN quantity resulting from tariff, has a different effect.

The system is :

$$D = D(P_d) \qquad (1)$$

$$S_f = S_f(P_f) \qquad (2)$$

$$D_d = D(P_d) - S_f(P_f) \qquad (3)$$

$$D_d = S_d \qquad (4)$$

$$C = C(S_d) \qquad (5)$$

$$\frac{\partial (P_d S_d)}{\partial S_d} = \frac{\partial C}{\partial S_d} \qquad (6)$$

$$P_f (1 + t) = P_d \qquad (7)$$

Which is a set of equations identical to the tariff system.

Equation (6) however, can be re-expressed in two different ways.

(i) With tariff :

$$\frac{\delta (P_d S_d)}{\delta S_d} = P_d \frac{\delta D}{\delta S_d} + D \frac{\delta P_d}{\delta S_d} - P_d \frac{\delta S_f}{\delta S_d} - S_f \frac{\delta P_d}{\delta S_d}$$

(ii) With quota, S_f is fixed (at least at maximum) and therefore $P_d \frac{\delta S_f}{\delta S_d} = 0$

Thus :

$$\frac{\delta (P_d S_d)}{\delta S_d} = P_d \frac{\delta D}{\delta S_d} + D \frac{\delta P_d}{\delta S_d} - 0 - S_f \frac{\delta P_d}{\delta S_d}$$

i.e. foreign supply does not vary with the price level once the quota has been filled.

The different effect of a quota is illustrated in Figure 2.6.

$D_d D_d$ is equal to total demand less the fixed foreign supply. The consequent M R curve is much steeper than under tariff, monopoly product much reduced and price significantly higher. OB = P_f

OA = P_d

Case 2 : Assume perfect competition among internal producers, monopoly holding of import quotas. A tariff analysis is irrelevant. The quota system is :

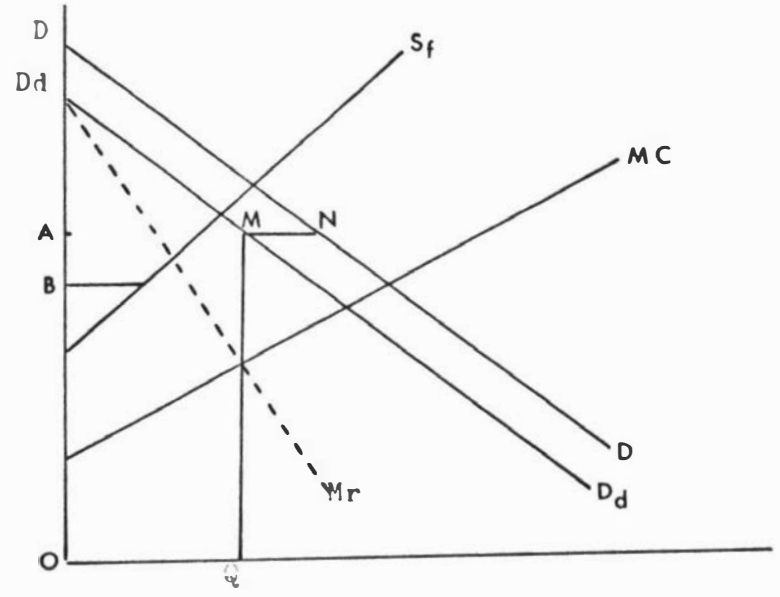
$$D = D(P_d) \quad (1)$$

$$S_f = D(P_d) - S_d(P_d) \quad (2)$$

$$S_d = S_d(P_d) \quad (3)$$

$$S_f = S_f(P_f) \quad (4)$$

FIG. 2.6.



Sf = foreign supply

MC = domestic supply

D D = total demand - average revenue

D_d D_d = total demand less quota.

D_d M_r = marginal revenue

M N = B F = quota

O Q = A M = internal product

O B = foreign price

O A = domestic price

$$P_d = P_f (1 + t) \qquad (5)$$

$$\frac{\delta (P_d - P_f) S_f}{\delta S_f} \leq 0 \qquad (6)$$

t represents the implicit tariff $(P_d - P_f)$ of a quota. The odd equation is (6). If profit maximisation equilibrium is determined at an import quantity equal to or less than the permitted quota maximum the equals sign holds. If not, then at maximum permitted import levels, marginal profit is still positive.

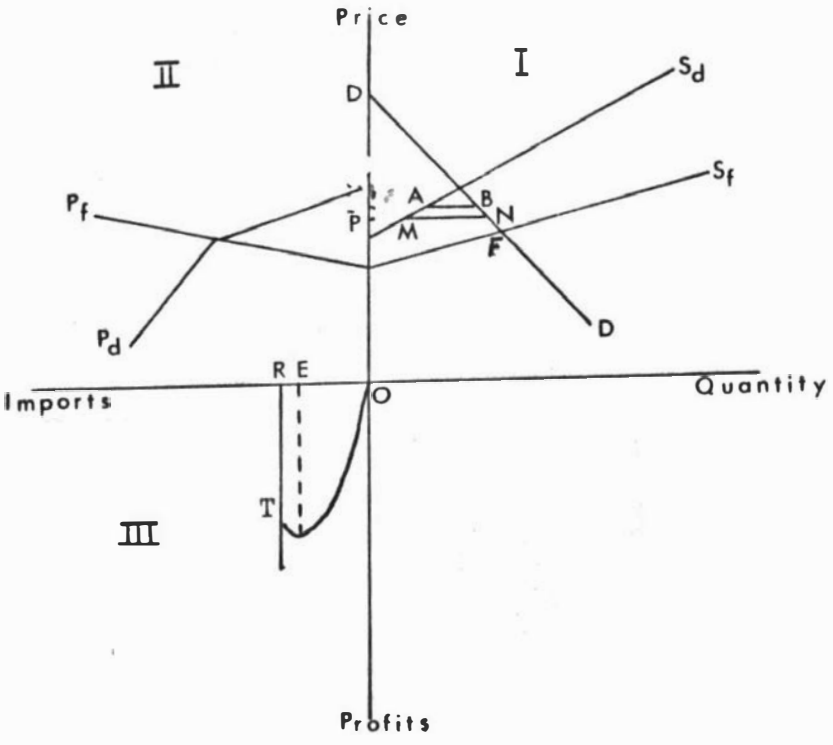
The illustration uses the three quadrants of Figure 2.7

For ease of analysis , the illustration presents a simplified situation; alternative situations give the same result, but require a more complex diagram.

S_f is shown as more competitive than S_d. Free trade equilibrium is shown at the intersection of S_f and DD in Quadrant I where total demand is met by imports. Quadrant I shows the function of equations (1), (3), (4) and the horizontal gap between $S_d$and S_f makes up equation (2).

Quadrant II illustrates equation (5) showing the gap between foreign and domestic prices at varying import levels, the gap between them representing the tariff required to preserve some of the market for the internal producer. Both axes are positive. O R = M N = quota, arbitrarily selected at any quantity less than the free trade equilibrium and greater than zero.

FIG. 2. 7.



Quadrant I :

Sf	=	foreign supply
Sd	=	domestic supply
D D	=	demand
F	=	Free trade equilibrium
M N = D R	=	quota
O P	=	full quota price
O P'	=	less than full quota price

Quadrant II :

Pf	=	foreign price at varying import levels
Pd	=	dom. price at varying import levels

Quadrant III :

O T	=	total profit to importer
O R	=	maximum quota
O E	=	profit max. import level.

Quadrant III, also positive on both axes, shows the profit level of which equation (6) is the derivative. If profit is still rising at import cut-off level R the derivative is greater than zero for all import levels. If it is falling, then at some level less than maximum quota, the derivative is zero.

Beginning with the "free trade" equilibrium of Quadrant I, quota M N (= O R) is imposed. If the full quota is imported, price is O P. However, the monopolist quota holder may find it more profitable to use less than his full allowance, import only A B (= O E) in which case price will be still higher at O P'.

Case 3 : Monopoly in domestic production and monopoly of quota-holding. This is, in effect, a duopoly situation with the indeterminate solution of duopoly analysis. The solution depends on the relative strength of the suppliers, on their anticipations of each others acts and their reaction to each other. It is reasonable to suppose that there will be some degree of collusion, at least in the long run, which will approach the extreme case of the monopoly of both sectors coming under single control. This is then monopoly with two sources of supply.

The system is :-

$$D = D(P_d)$$

$$S_f + S_d = D$$

$$S_f = S_f(P_f)$$

$$C = C(S_d)$$

$$P_f\ (1 + t) = (P_d)$$

$$\frac{\delta\ (P_f\ S_f)}{\delta\ S_f} = \frac{\delta\ C}{\delta\ S_d} = \frac{\delta\ (P_d\ D)}{\delta\ D}$$

$$\text{i.e. } M\ C_f = M\ C_d = M\ R$$

This is illustrated in Figure 2.8.

T M C represents producer marginal cost and C M the marginal cost of imports, the line T V A_{mc} being the combined marginal cost with two supply sources.

N M is permitted import quota.

Actual imports are limited to U G (= S R) and total supply is O Q. Foreign price is O U, domestic price is O E.

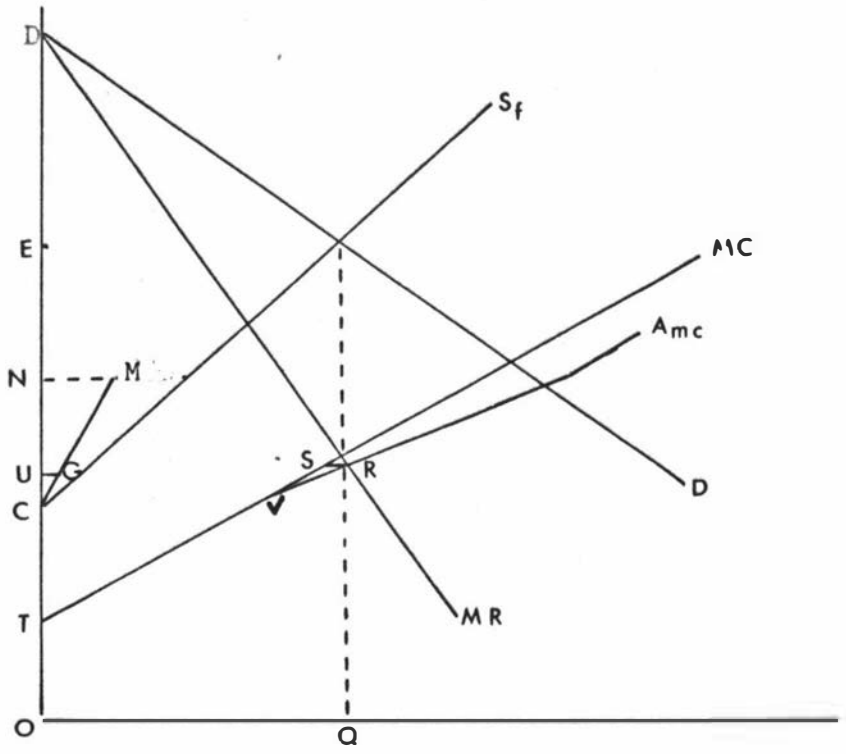
In every case, the use of quota rather than tariff results in :

(a) A price level not lower than and possibly higher than that under tariff.

(b) A reduced level of imports, unless there is no monopolistic holding of licences.

(c) Reduced internally produced quantity available to consumers.

FIG.2.8.



D D_1 D M R	=	demand marginal revenue
C S_f	=	foreign supply
C M	=	marginal cost to monopoly importer
T M C	=	Marginal cost/supply of internal producer
T V A_{mc}	=	combined marginal cost of importer/producer
N M	=	quota
O Q	=	profit maximising quantity.
O E	=	price
S r = U G	=	imports.

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Chapter 3.

Long Run Falling Cost and Protection of Growing Industry.

Any pure theory analysis of trade control is almost bound to result in the conclusion that free trade is the ideal system and that any interference with the natural mechanism represents a 'second-best' set of policies. This result is primarily because the normal assumptions of free competition, mobility of goods and factors, zero transport costs etc., do not recognise that adjustment may be only partial and may take a long time to work. Meanwhile the social and political cost of change may be unacceptable. In effect, pure theory tends to deal with a world which, ideally, ought to exist, to which policy makers ought to aspire. Thus any policy which directs activity further away is to be condemned.

This chapter begins with the assumption that, for good or ill, some form of protection is required, either for balance of payments adjustment or for protection of infant industry. It does not suggest that protection is desirable, but simply acknowledges its existence. The immediate problem is that posed in question 3 at the end of Chapter 1 - which form of control, tariff or quota, is most likely to achieve the desired combination of economic, political and social goals?

What ever may be the reasons for the initial imposition of controls, the argument for their retention is almost entirely based on the need to protect industry and employment which has grown up during a control period, or on the need to insulate certain infant industries during their growth poriod. The firm is operating on a relatively high cost structure; with sufficient help and encouragement this infant will grow to enjoy economies of scale and be able to compete with foreign rivals. This chapter attempts to examine the possible results of providing protection to such a firm.

It is often argued that price control legislation can be used to counter possible monopoly exploitation of protected internal markets and that there need be no difference between tariff and quota in their internal effects; quota is therefore preferable because its trade and balance of payments effect are predictable and immediate. In fact, the internal effects are likely to be very different and the effectiveness of any price control policy very questionable.

In New Zealand, two kinds of firm are concerned - one producing entirely for the home market, the other enjoying conditions of imperfect competition in the home market with some residual product for the competitive international market. The situation is the same for both firms, but the dual market firm is of greater interest.

The main argument for the existence of, and for the protection of such a firm is that the internal market is

so small that it does not warrant the establishment of a production unit on a sufficiently large scale to compete with overseas producers. In terms of micro-theory, the demand curve (PAR of Fig. 3.1) intercepts the long run average cost curve to the left of minimum.

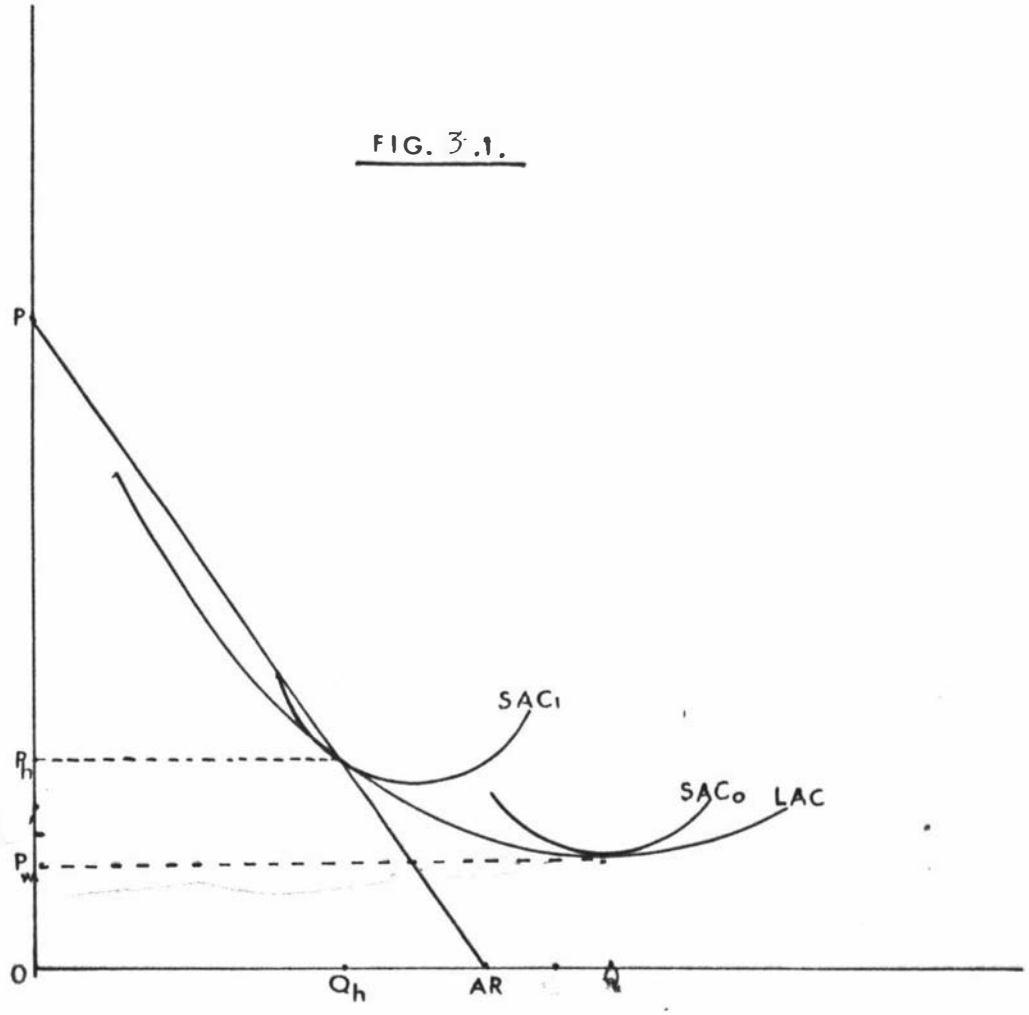
We are thus concerned with a variety of cost curves. The long run (average and marginal) curve is downward sloping over the relevant product range. Inside the long run envelope curve are a number of shortrun curves corresponding to a different plant sizes. The optimum size plant, tangent to minimum point on L A C is too large to operate for the small internal market.

The analysis thus deals with two possibilities :-

1. In the long run, if it is profitable for the firm, it is possible to increase plant size (i.e. vary 'fixed' costs) to take advantage of decreasing economies of scale.
2. In the short run, operating with a given plant, output increase is subject to rising marginal cost.

In Figure 3.1 the optimum production unit (SAC_o) produces OQ units and it can be assumed that the world competitive price is at or about OP_w, there being many producers operating in conditions sufficiently competitive to keep prices at minimum level. Even if some degree of collusion prevails in world markets, prices will not be significantly above P_w. From the point of view of the home producer, P_w is the given world price. The maximum

FIG. 3.1.



AR = Demand in domestic market

LAC = long-run average cost curve.

SAC_0 = short-run average cost of optimum firm

SAC_1 = short-run average cost of policy 'optimum' firm

Pw = world price

Ph = policy desired domestic price

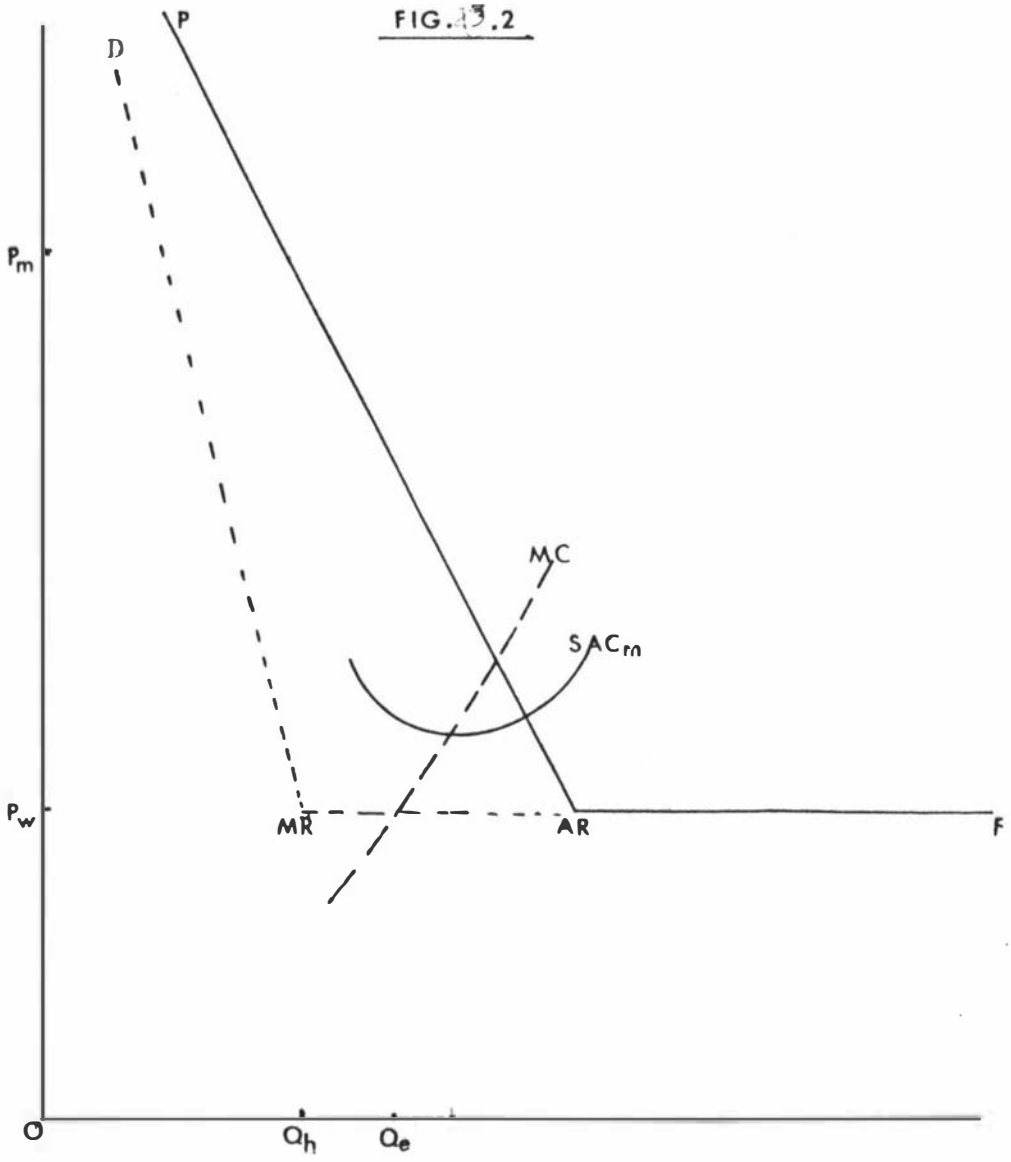
volume of sales a home producer can aspire to in a protected internal market is O Q_h, using a less than optimum size unit, making no excess profit, and producing at a higher price with plant size S A C_1. Protection is granted the producer with the expectation that the internal price/quantity will be O P_h, O Q_h. The somewhat higher price is regarded as acceptable in order to encourage domestic producers, provide employment, develop potential exports, save imports, etc.

There is, in addition, the long term prospect that, as the economy grows, demand will increase, shifting the A R curve to the right and permitting further product expansion until, in time, the home producer will be able to operate at optimum level.

In New Zealand such industries as timber processing, building materials, some electrical appliances, food processing, light metal and hardware industries are among those enjoying this form of protection.

In the absence of competition from foreign suppliers in the internal market, the producer who wishes to increase profits can discriminate between the two markets. The combined domestic and foreign outlets for his product give him an average revenue curve PARF in Fig. 3.2, and a marginal revenue curve DMRF. Maximum profits are obtained with a plant of smaller size than the optimum SAC_o, and the protected profit maximising plant is SAC_m of Fig. 3.2, which could well be smaller than the SAC_1 of Fig. 3.1. The new SAC_m plant will sell OQ_h at price P_m on the home

FIG. 3.2



P A R = domestic demand

D M R = marginal revenue

P_w ARF = world price = supply = AR = MR

P A R F = total demand

D MR ARF = marginal revenue

SAC_m = monopoly average cost.

MC = short run marginal cost

Pm = monopoly price

market and export Q_h Q_e at competitive world prices. If M C cuts M R where M R is falling, i.e. above horizontal P_w level there will be no exports and total product will be for the home market. In either event, domestic price will be higher than the P_h of Fig. 3.1, and O Q_h will be a smaller quantity than the O Q_h of Fig3.1.

Current thinking in political circles seems to favour some form of price restraint on the home market - i.e. that price should be set at a legal maximum at some point below P_m. Such a policy involves a number of difficulties which might lead to distortions of greater magnitude than the original distortion which price control is designed to cure.

1. Price Fixing : Price would presumably be fixed with some regard to production costs. Unfortunately the only way in which costs can be assessed is by asking the producer, or rather, by examining the books which he and his accountant have produced. The possibility of a government servant making an accurate assessment of costs in an industry with which he is not familiar is remote; the time and effort required to make such an assessment would be considerable and reassessment would be necessary at frequent intervals.

2. Administration : All controls involve additional bureaucracy. Price control requires an inspectorate, complex legislation, careful policing, arbitration or prprosecution; all involve extra cost, create irritation and annoyance, and have doubtful effectiveness. An

example will illustrate. The price of a tin of fruit can be fixed. Can the quality of the fruit, the relative fruit/syrup content, quality of packaging, etc., be equally well controlled? With larger items credit allowances, delivery conditions, guarantees, after sales service, installation charges, etc., are all variables which can be adjusted to compensate for unfavourable price legislation. To block the loop-holes would be likely to involve the consumer in more cost through taxation to pay for administration than he saved through price reduction.

3. Market Distortion : There is always a danger that, in setting a price below "equilibrium", the supplier will be discouraged and will, if possible, switch some of his attention to alternative non-controlled items. By contrast, the consumer is attracted away from substitute goods to the lower priced item. This could easily lead to the necessity for further somewhat arbitrary price control regulations - a process which can continue ad infinitum.

It appears that a much more effective and easily administered method of control is to remove the conditions under which monopoly pricing is possible - that is, to modify the import control policy in a manner which will reduce the internal/external price discrepancies to a minimum, at the same time preserving, as far as possible, the internal market for the internal producer.

The first question a policy maker must ask is what measure of protection, in terms of price, is a community prepared to pay for the privilege of having home-

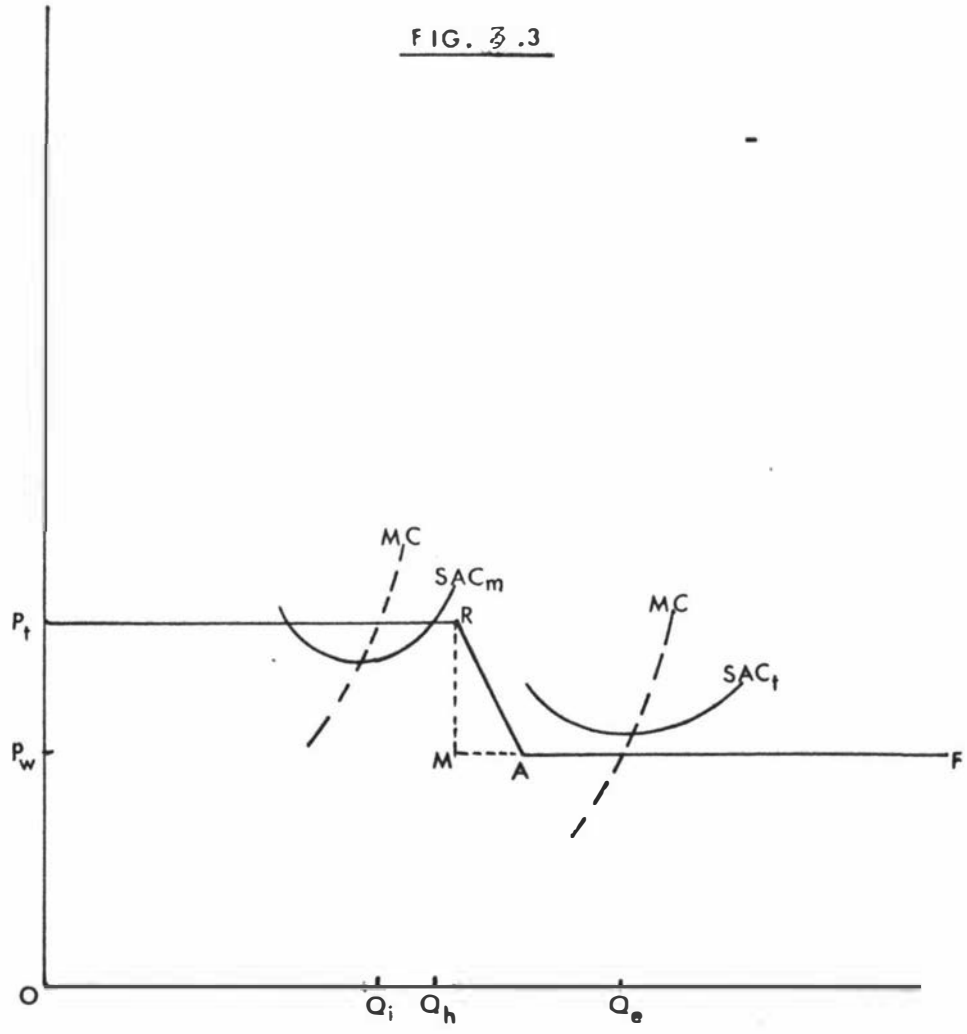
produced goods; this may well vary from one industry to another. Let us assume that the community is prepared to accept a 25% (t) difference between home and foreign price. If the home producer is unable to compete on these terms, the general opinion is that he is not worthy of assistance. At the price P_w + t, foreign goods are permitted free entry.

In terms of Fig. 3.3, the internal producer now faces a quite different demand curve. At OP_t ($=P_w$ +t) he is in direct competition on the home market with foreign competitors, but enjoys a price advantage. Between OP_t and OP_w he enjoys monopoly at home. At OP_w his price is given on world markets, where he will sell any product not saleable at home at the higher (OP_t) price. Demand (Average Revenue) is shown by the line P_t RAF. Marginal Revenue is shown by P_t RMF.

The initial effect of the tariff while plant size remains as it was before the tariff at SAC_m, is likely to be that the balance between what the internal producer is prepared to produce at that price (OQ_i) and the quantity demanded at that price (OQ_h) will be supplied from overseas

This has the possible real disadvantage of imposing some temporary strain on the balance of payments. This strain can be eased either by having a larger tariff level at the cost of higher prices or by reaching the required tariff level by stages in order to permit the internal producer time to adjust to new circumstances.

FIG. 3.3



P_t R = Maximum price = AR = MR with tariff

P_w A F = World price

P_t R A F = Combined average revenue

P_t R M A F = Marginal revenue

S A C_m = monopoly SAC (from Fig. 2.2)

S A C_t = short run av. cost after growth.

O Q_i = initial quantity

O Q_h = final domestic quantity supplied

O Q_e = final total quantity supplied

A possible longer term result is that, in fact, the producer will use that area of monopoly he enjoys. Given time, a larger plant, SAC_t will supply the home market with OQ_h of product at an internal price P_t, above P_w, with an additional output $Q_h Q_e$ available for export at world prices at a profit level greater than that enjoyed at interim output Q_i.

The final position is indeterminate. Four situations are possible, depending on the relationship between demand and LAC, and the rate of tariff (price discrepancy) which home consumers are willing to accept.

(a) If the local market is so small in relation to the optimum production unit, or the tariff in not sufficiently high, the size of the production plant supplying the home market would be too small; in terms of Fig. 3.3 SAC_m would be above P_t at all points; there would be no home production. This is an acceptable situation from the point of view of the policy maker. The cost of protection, measured by the tariff is the limit beyond which the policy maker is not willing to go, although consideration might be given to the temporary imposition of a higher tariff to give the producer time to adjust.

(b) If SAC_m lies in such a position that some part of it lies below P_t and MC cuts MR between P_t andR, the internal market will be shared between internal and foreign suppliers.

(c) If MC intercepts MR in the "monopoly" area shown by the broken line RM, the internal market will be wholly supplied by the internal producer and no foreign trade will take place; price will be P_t, i.e. greater than P_w.

(d) If MC intercepts MR to the right of M some quantity in excess of home demand will be produced, the excess being exported at world price. If this position is reached there is a strong case for a further reduction of the tariff level.

Conclusion (d) is an important one. If a situation arises where an industry, protected in the internal market, is able to export on a 'marginal cost' basis, the likelihood is that the level of protection is unnecessarily high. The higher price paid by the internal consumer is a form of subsidy to the producer, part of which is passed on to the foreign consumer. A lowering of the tariff should have the effect of transferring some of the exported product to the home market at a lower (internal) price.

The benefits of tariff as opposed to a combination of quota restraint and price control are numerous :-

1. <u>It is costless</u> : The prime motive is not to collect tariff revenue, although some revenue may accrue to Government. Administrative costs, policing, etc., are negligible. Some saving is made in dismantling the administration of any existing quantitative control.

2. <u>It is effective</u> Price cannot rise above $P_w + t$.

Export sales should not be lost. To the extent that the internal producer expands he does, in fact, become more nearly competitive with the foreign producer.

3. Competitive quality ; Not only will the price of the home produced article closely match the world price, but the quality must also be made to match goods which are readily available.

4. Excessive monopoly profits are minimised.

5. Quantity available is increased.

6. If production expands full employment and growth are maintained.

Sector and Industry Growth.

It is not enough merely to examine the effects of tariff/quota controls on the firm or industry directly concerned. Two other aspects must be considered.

(a) The effects of control on the relative growth of various sectors.

(b) The effects on separate firms (or industries) inside the protected industry (sector).

The first problem can be illustrated using three main sectors - exportables (X), importables (I) and non-traded goods, (N) - the outputs of the three sectors making up total product, which equals total real income (Y)

$$Y = X + I + N$$

Total expenditure (E) is on imports (M) importables (I) and non-traded goods (N). For convenience, that portion of exportables retained for home-consumption can,

in this context be classified with non-traded goods. (This method of classification is discussed more fully at the beginning of Chapter 9)

$$E = M + I + N$$

In equilibrium $Y = E$ and $X = M$.

An important reason for the imposition of import controls, at least initially, is to correct a balance of payments disequilibrium - i.e. when $X < M$, M is arbitrarily reduced to equate with X. Unless Government is prepared to reduce expenditure levels, unsatisfied demand is re-directed from imports towards internally produced goods - most demand going to importables (which by definition are the nearest substitutes to the imports whose supply has been reduced), some to non-traded goods and some to exportables. Demand pressures force up prices in the two internal sectors; this results in a flow of resources away from the export sector into the two internal sectors. In a period of growth there need not be a movement of factors from one sector to another; adjustment is by the allocation of new factors created by the growth process. If a relatively large proportion of growth is directed into importables and non-traded commodity production, the result is the same as if there had in fact been a physical transfer of factors from the export sector. In the long run, in a full employment economy, the relative size of the export sector must decline. The need for import control can thus become self-perpetuating; a fall in export revenue

leads to increasing shift of factors to non-export growth, which leads to decreasing exports, recurring payments deficits, and the need for further control of imports. Ultimately this may lead to the anomalous situation where it is necessary to subsidise some exports in order to provide producers with satisfactory returns. The home consumer pays in two directions; higher prices are required for his internally produced goods and, through taxation, he pays part of the internal cost of producing exports in order that foreign consumers enjoy low world price.

The relative expansion of firms and industries within the protected importable sector can best be illustrated diagrammatically by considering two firms facing similar demand schedules but with different elasticities of supply.

Fig. 3.4 (a) and 3.4 (b) show identical demand curves for producers of two commodities (or for two firms with different cost structures in the same industry). The producer in (a) has a relatively inelastic supply curve, the producer in (b) an elastic supply.

The initial position is with world price at P_w. With free trade, internal price cannot rise above this level and the market is supplied with OQ_h by the internal producer and $Q_h Q_f$ by the foreign supplier. The important point is that, in the initial market situation, the two firms (industries) are indistinguishable; the prices of the two commodities are the same and each producer has a similar share of his respective market. Unless the

FIG. 3.4.a.

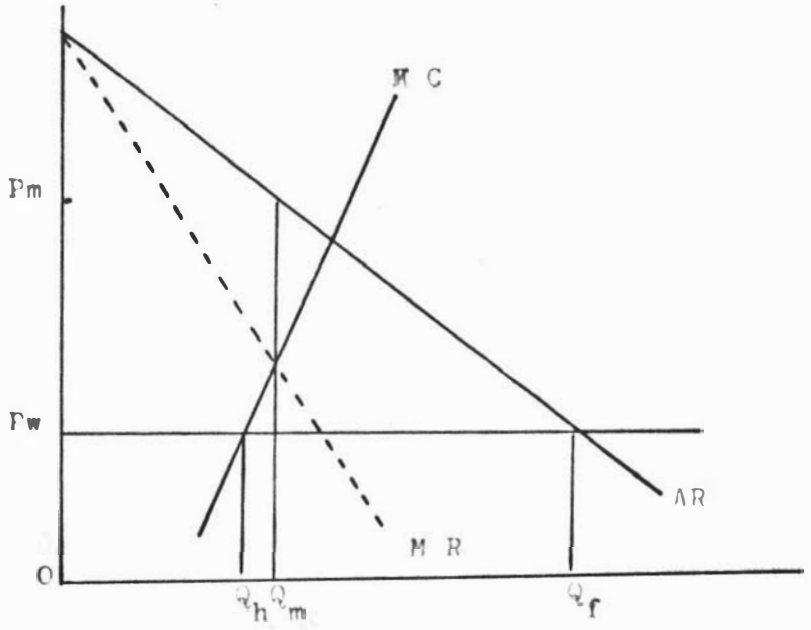
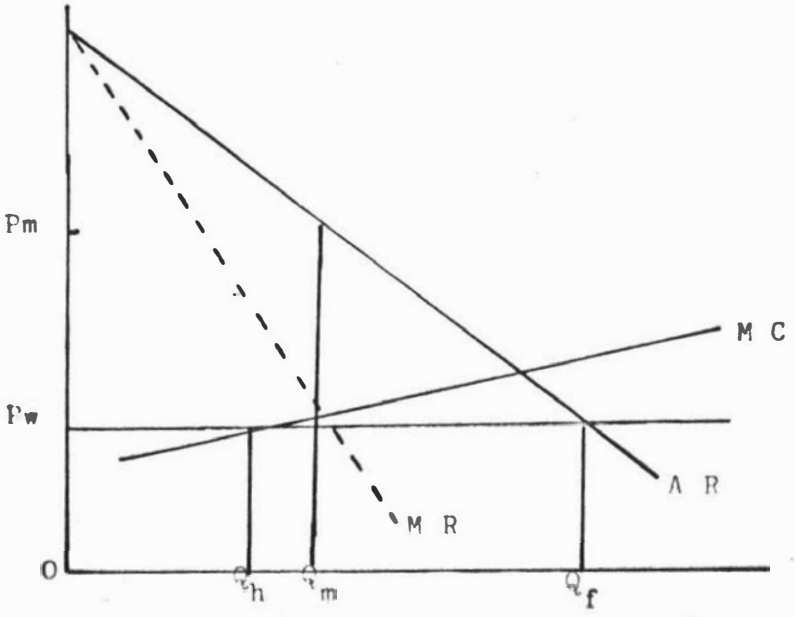


FIG. 3.4.b.



O Tw - world price
O Qf - free trade quantity
O Qh - home produced quantity
QhQf - imported quantity
O Pm - post-control price
O Qm - post-control quantity

policy maker has complete knowledge of both firms (industries) he cannot assess the expansion and price effect of excluding foreign goods.

The result of a ban on foreign goods is that both firms (industries) expand. If free market conditions remain, expansion is to the intersection of MC and AR; in the more likely event of monopoly control of the internal market, expansion will be much less; total quantity supplied will be OQ_m. The industry with inelastic supply will expand less and price will rise higher.

It should be noted that import control need not exclude goods, but only limit them; this simply modifies the results. In Fig. 3.4 the AR line is shifted left to allow for imports and to represent the residual demand available to the internal producer.

Figures 3.5 (a) and 3.5 (b) show a somewhat unusual but quite possible situation. Conditions are the same as in Fig. 3.4 except that world price is higher. In the initial free trade situation the firm with elastic supply has a much larger share of its market than does the firm with inelastic supply. The result of controls in that Firm A expands slightly from OQ_h to OQ_m (Fig. 3.5 (a)) but Firm B is induced to <u>reduce</u> output from OQ_h to OQ_m Fig. 3.5 (b)).

Both diagrams indicate one of the major disadvantages of import control as a policy weapon. Policy should aim at encouraging the growth of efficient industries which can expand rapidly. Controls make little or no

FIG. 3.5. a.

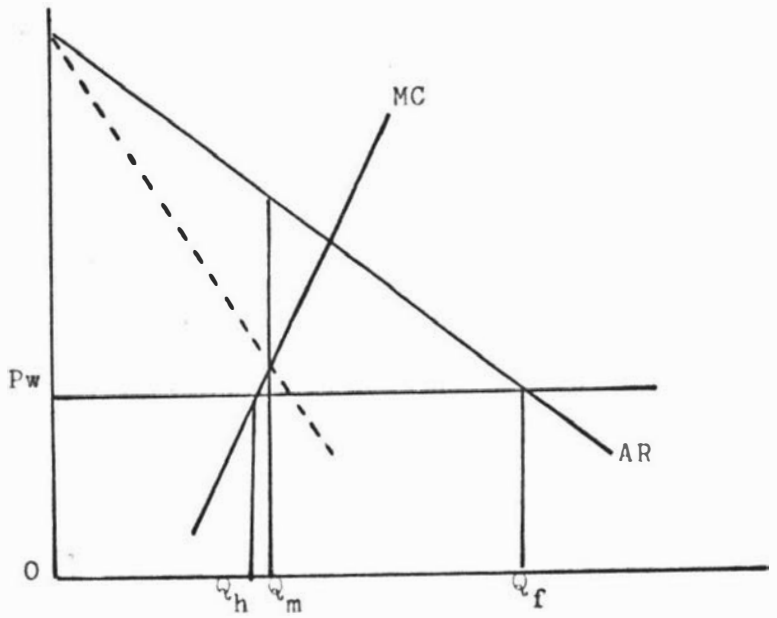
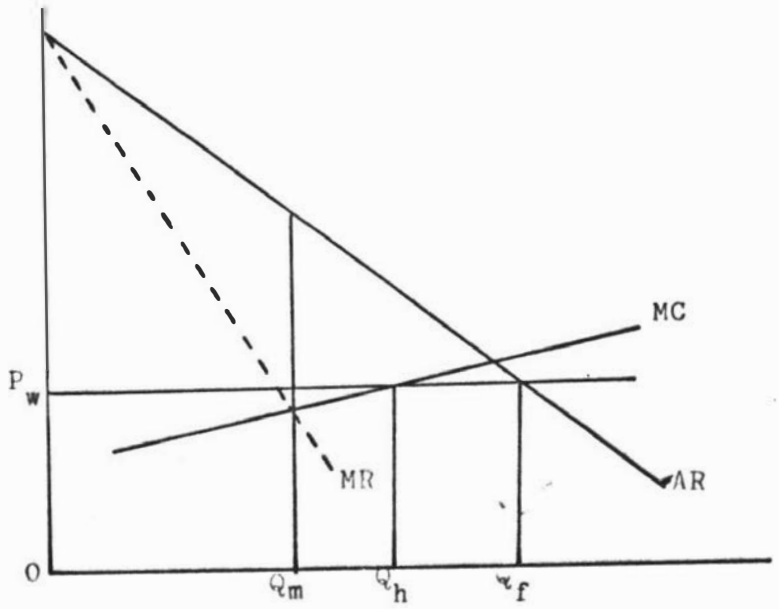


FIG. 3.5.b.



OPW - World price
OQ - Free trade quantity
OQ_h - home produced quantity
$Q_h Q_f$ - imported quantity
OQm - post control quantity.

distinction between industries but create conditions under which all industry expands.

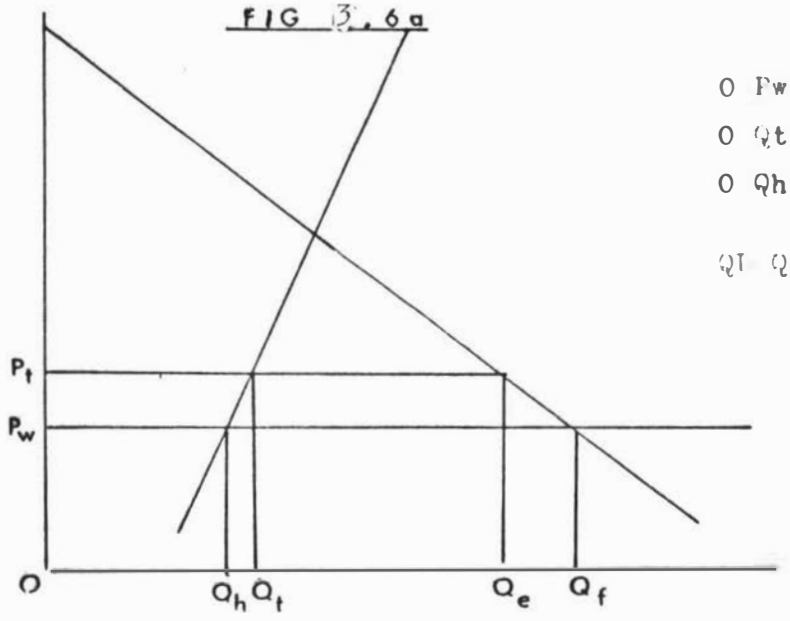
Figures 3.6 (a) and (b) show the quite different effect of tariff. Tariff is still restrictive of imports, raises price and reduces consumer satisfaction. However, it encourages expansion of industry B and gives little aid to industry A. If Figure 3.6 (a) the world price is raised by tariff to P_t, which represents maximum price and virtually excludes the possibility of monopoly. Total quantity sold is reduced from OQ_f to OQ_e, and the internal producer's share is OQ_t, little more than his original OQ_h.

In figure 3.6 (b) however, the producer expands to capture almost the whole of the post-tariff market. In terms both of expansion of employment opportunities and in increased output at lower prices the tariff produces more satisfactory results than direct quantitative control.

A point of interest is that even a high prohibitive tariff, sufficient to bring price up to the MC/MR intersection and effectively preserving the whole of the internal market for the home producer, is still preferable to quota control. It prevents monopolistic marginal costing by setting a ceiling above which internal price cannot rise.

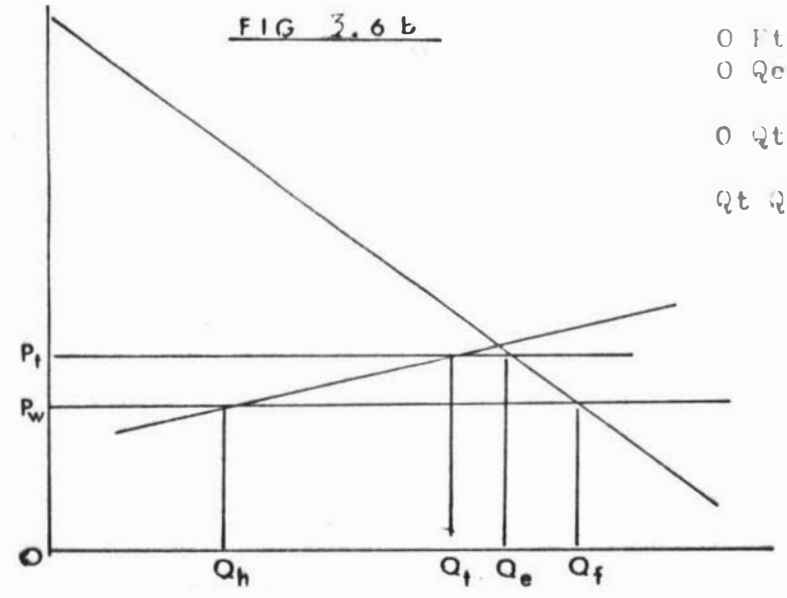
Figures 3.4, 3.5 and 3.6 illustrate in a simple manner the popular fallacy which leads to protection. The initial situation of a market shared between home and foreign producers is the equilibrium position. Home producers justly claim equal efficiency with the foreigner, but

FIG 3.6a



O Pw - world price
O Qt - free trade quantity
O Qh - home produced quantity
Qt Qf - imported quantity

FIG 3.6b



O Pt - post tariff price
O Qe - post tariff quantity
O Qt - post tariff home-produced quantity
Qt Qe - post tariff imported quantity

resent sharing the market at relatively low profit levels. They argue that a tariff would preserve the market for the home producer. The analysis of this Chapter tries to demonstrate

1. If the home producer is on a long run falling L A C curve and still able to compete with the foreigner, tariff is unnecessary. He has a strong profit incentive to reduce cost and expand sales at current world prices. A tariff is in this situation, a movement away from equilibrium.

2. If the home producer is unable to compete with the foreigner because of small plant size, high internal cost structure, tariff or quantitative restraints may be used as protective devices to sustain a disequilibrium situation.

3. Quantitative restraints are likely to be more distortive than tariff.

Chapter 4.

A Three Sector Model

The traditional type of analysis used in Chapters 2 and 3 has two serious weaknesses :

1. Athough direction of price change is indicated and size of change is clearly related to supply and demand elasticities, few attempts have been made to measure the likely size of the price change.
2. Most theory analysis is in terms of a two country, two commodity model and, although mention is frequently made of a third, non-traded commodity, the third commodity is seldom built into the model. or clearly defined.

J. Bhagwati, in his article 'International Trade and Economic Expansion' uses a model which tries to express some quantitative relationship between elasticities and price change. Bhagwati is concerned only with external (terms of trade) price effects and confines himself to a two commodity model. Furthermore, Bhagwati analyses growth and tariff effects and does not mention quantitative control. However, his notation is adopted here and extended to embrace a third commodity, and quantitative controls.

The following model assumes that there are three

commodity types, all produced at home :

I.....home produced importables.

X.....exportables

N.....non-traded goods.

A more elaborate definition of the three sectors is left until Chapter 9. It is sufficient for the model of this chapter to recognise three groups of goods produced at home.

Importables (I) are identical to, or close substitutes for goods which may also be supplied from foreign sources. They are all consumed internally, but their market is closely related to the external sector, and is sensitive to changes in foreign supply conditions. In New Zealand they include a wide range of goods including clothing, footwear, carpets, hardware, light machinery, consumer durables etc.

Exportables (X) are produced both for home and foreign markets and changes in the demand conditions in one market can affect production or quantity supplied, and price required in the other. For some, e.g. in New Zealand meat and dairy products, timber, pulp and wool, the foreign market is dominant and price is largelydetermined by overseas conditions . For some - e.g. leather, building materials, petroleum products. pottery and glassware - the home market is more important with a small surplus being exported when foreign market conditions are favourable.

Thus this group could be subdivided into

(a) Commodities produced by industries which are export oriented, producing primarily for the foreign market with surplus product sold at home at prices determined abroad.

(b) Commodities produced by industries which are internally oriented, with prices determined by internal demand.

Non-traded goods (N) - e.g. electricity, services, construction - are primarily produced for internal consumption and are not directly affected by market conditions overseas.

It must be acknowledged that the division of goods into these three categories is no less arbitrary than their division into two. Indeed to the extent that such 'nontraded' items as electricity, hotel accommodation, housing, car repairs etc. are inputs into exportable and import-competing commodities, they are just as much tradeable commodities (in changed form) as butter or wool, which may find a market at home or abroad. The justification for introducing the non-traded good is to recognise that a very large proportion of economic activity is directed to the internal market, is not aware of (or does not react to) changes in the external sector, andreceives only secondary repercussion effects from price and quantity changes in external trade and incomes.

In addition to the three groups of commodities

produced at home, there is a fourth group labelled Imports (M). These are goods supplied from foreign sources and include some goods not available at home - tea, sugar, railway engines and cargo ships; some which supplement an inadequate home product - tobacco, citrus friut and chemical fertilisers; and some which compete with the importables defined above.

This model attempts to examine the effect of general economic expansion on the demand for and supply of each group, and their interaction on each other.

Assumptions :

(a) Prices are expressed in terms of the numeraire commodity (M) thus :

P_x (price exports) = $\frac{P_x}{P_m}$ in base year

(b) The base year, period 0, is assumed to be a position of external balance..

$P_x \cdot X_f = P_m \cdot M$

i.e. the value of foreign sales of exportables equals the value of imports.

(c) National Income (Y) is assumed to be the output of fully employed productive capacity. An increase in Y is the result of expanding capacity. No increase in output can be made by use of excess capacity, unemployed resources , etc.

(c) Initially it will be assumed that there

are no barriers to trade and equilibrium is attained by relative price adjustments.

Notation :

Y = Total output capacity of the economy at the beginning of a time period.

dY = Increment to capacity during a time period.

$\overline{Y} = \frac{dY}{Y}$ = Relative growth in capacity.

I = Output capacity of home Importables sector at beginning of time period.

Di = Demand for importables at the beginning of a time period

Pi = Price of importables

$Ei = \left(\frac{Pi}{Di} \cdot \frac{\delta Di}{\delta Pi} \right)$ = Price Elasticity of demand for importables

$Eiy = \left(\frac{Y}{Di} \cdot \frac{\delta Di}{\delta Y} \right)$ = Income Elasticity of demand for importables

$\eta i = \left(\frac{Pi}{I} \cdot \frac{\delta I}{\delta P_i} \right)$ = Price Elasticity of supply of importables.

$\eta iy = \left(\frac{Y}{I} \cdot \frac{\delta I}{\delta} \right)$ = Growth Elasticity of supply of importables.

Dm = Demand for Imports.

Pm = Price of Imports.

$Emy = \left(\frac{Y}{Dm} \cdot \frac{\delta Dm}{\delta Y} \right)$ = Income elasticity of demand for imports.

Em = Price elasticity of demand for imports.

X = Output capacity of Export Sector

Dxh = Home demand for exportables.

Dxf = Foreign demand for exports.

Px = Price of exports.

$Exh = \left(\frac{Px}{Dxh} \cdot \frac{\delta Dxh}{\delta Px}\right)$ = Price elasticity of home demand for Exportables.

$Exf = \left(\frac{Bx}{Dxf} \cdot \frac{\delta Dxf}{\delta Px}\right)$ = Price elasticity of foreign demand for exports.

$Exy = \left(\frac{Y}{Dxh} \cdot \frac{\delta Dxh}{\delta Y}\right)$ = Income elasticity of home demand for exportables.

$\eta x = \left(\frac{Px}{X} \cdot \frac{\delta X}{\delta Px}\right)$ = Price elasticity of supply of exportables

$\eta xy = \left(\frac{Y}{X} \cdot \frac{\delta X}{\delta Y}\right)$ = Growth elasticity of supply of exportables

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N = Output capacity of non-traded sector.

D_n = Demand for non-traded goods

P_n = Price of non-traded goods

$E_n = \left(\frac{Pn}{Dn} \cdot \frac{\delta Dn}{\delta P}\right)$ = Price elasticity of demand for non-traded goods.

$Eny = \left(\frac{Y}{D_n} \cdot \frac{\delta Dn}{\delta Y}\right)$ = Income elastitity of demand for non-traded goods.

$\eta n = \left(\frac{Pn}{N} \cdot \frac{\delta N}{\delta P_n}\right)$ = Price elasticity of supply of non-traded goods.

$\eta ny = \left(\frac{Y}{N} \cdot \frac{\delta N}{\delta Y}\right)$ = Growth elasticity of supply of non-traded goods.

Effects of Growth on I :

1. As a result of growth, there will be a change in the output of I.

$$\frac{\delta I}{\delta Y} \cdot dY = I \cdot \left(\frac{Y}{I} \cdot \frac{\delta I}{\delta Y}\right) \cdot \frac{dY}{Y}$$

i.e. The marginal increase in capacity output of importables ($\frac{\delta I}{\delta Y}$) multiplied by the measured change in productive capacity (dY) is dependent on the present output level (I) times the growth elasticity of supply of I ($\frac{Y}{I} \cdot \frac{\delta I}{\delta Y}$) times the relative growth in total capacity ($\frac{dY}{Y}$).

If growth elasticity of supply is written η_{iy} and relative growth as $\bar{Y}$, the right hand side of the equation can be re-expressed.

$$I \cdot \eta_{iy} \cdot \bar{Y} \qquad (1.I)$$

The value of this expression can be assumed positive - i.e. growth in capacity would normally lead to increased output of importables.

2. Growth, leading to increased income, will change the demand for I.

$$\frac{\delta D_i}{\delta Y} \cdot dY = D_i \cdot \left(\frac{Y}{D_i} \cdot \frac{\delta D_i}{\delta Y}\right) \cdot \frac{dY}{Y} \quad \ldots$$

The right hand side can be rewritten:

$$D_i \cdot E_{iy} \cdot \bar{Y} \qquad (2.I.)$$

Where E_{iy} = Income elasticity of demand for I

The value of this expression will be positive unless I is an inferior good.

3. Any price change will lead to a change in the demand for I.

$$\frac{\delta D_i}{\delta P_i} \cdot dP_i = D_i \cdot \left(\frac{P_i}{D_i} \cdot \frac{\delta D_i}{\delta P_i} \right) \cdot \frac{dP_i}{P_i}$$

The right hand side can be rewritten :

$$D_I \cdot E_i \cdot \frac{dP_i}{P_i} \qquad (3.I)$$

Where E_i is price elasticity of demand for I.

Because E_i would normally be negative, this expression cam be expected to have a negative value.

4. The price change will induce a changed supply if I.

$$\frac{\delta I}{\delta P_i} \cdot dP_i = I \cdot \left(\frac{P_i}{I} \cdot \frac{\delta I}{\delta P} \right) \cdot \frac{dP_i}{P_i}$$

If price elasticity of supply is written η_i, the right-hand side is re-expressed :

$$I \cdot \eta_i \cdot \frac{dP}{P_i} \qquad (4.I)$$

This expression will normally be positive.

To maintain balanced growth in the Importables sector it is necessary that the two supply functions shall match the two demand functions;

i.e. (1) + (4) = (2) + (3)

$$\text{or } \left(I.\eta_{iy} \cdot \bar{Y} \right) + \left(I.\eta_i \cdot \frac{dP_i}{P_i} \right) = \left(D_i \cdot E_{iy} \cdot \bar{Y} \right) + \left(D_i \cdot E_i \cdot \frac{dP_i}{P_i} \right)$$

Isolating the price change :-

$$\frac{dP_i}{P_i} = \left[\frac{(D_i \cdot E_{iy}) - (I \cdot \eta_{iy})}{(I \cdot \eta_i) - (D_i \cdot E_i)} \right] \bar{Y} \qquad (I)$$

This, the first expression of the model, measures in

terms of demand, supply, price and income elasticities, the price adjustment required to balance the supply of and demand for, importables.

Effects of Growth on Imports (M) :

A convenient and realistic assumption is that the supply function of imports is of infinite elasticity. Certainly it is not going to be significantly affected by growth within the importing country. -i.e. we can assume that the growth of New Zealand demand is not going to have any significant effect on world prices. Any price change as a result of increased demand, and export induced growth abroad is likely to be negligible.

The only significant impact on imports will arise from increased demand generated by increased income.

$$\frac{\delta D_m}{\delta Y} \cdot dY = D_m \cdot \left(\frac{Y}{D_m} \cdot \frac{\delta D_m}{\delta Y} \cdot \frac{dY}{Y} \right)$$

or $D_m \cdot E_{my} \cdot \bar{Y}$ (M)

when E_{my} is growth elasticity of demand for imports,

and $\frac{dP_m}{P_m} = 0.$

This, the second expression in the model, measures import growth.

Effects of Growth on Exports (X) :

1. The output of X will increase as National Product grows.

$$\frac{\delta X}{\delta Y} \cdot dY = X \cdot \left(\frac{Y}{X} \cdot \frac{\delta X}{\delta Y} \right) \cdot \frac{dY}{Y}$$

or $X \cdot \eta_{xy} \cdot \bar{Y}$ (1.X)

where η_{xy} is growth elasticity of supply of X and $\bar{Y}$ = relative growth = $\frac{dY}{Y}$

2. The internal demand for X will change with increased income, normally positively.

$$\frac{\delta D_{xh}}{\delta Y} \cdot dY = D_{xh} \cdot \left(\frac{Y}{D_{xh}} \cdot \frac{\delta D_{xh}}{\delta Y} \cdot \frac{dY}{Y}\right)$$

or $$= D_{xh} \cdot E_{xy} \cdot \bar{Y}$$

3. Any price change will exert a (negative) pressure on internal demand for X.

$$\frac{\delta D_{xh}}{\delta P_x} \cdot dP_x = D_{xh} \cdot \left(\frac{P_x}{D_{xh}} \cdot \frac{\delta D_{xh}}{\delta P_x}\right) \cdot \frac{dP_x}{P_x}$$

or $$= D_{xh} \cdot E_{xh} \cdot \frac{dP_x}{P_x} \qquad (3.X)$$

4. The price change will also negatively affect foreign demand for X.

$$\frac{\delta D_{xf}}{\delta P_x} \cdot dP_x = D_{xf} \cdot \left(\frac{P_x}{D_{xf}} \cdot \frac{\delta D_{xf}}{\delta P}\right) \cdot \frac{dP_x}{P_x}$$

or $$D_{xf} \cdot E_{xf} \cdot \frac{dP_x}{P_x} \qquad (4.X)$$

Thus, the increases resulting from growth, reflected in (1.X) and (2.X) will be partly offset by decreased demand resulting from price increase (3.X) and (4.X).

5. The price change will positively affect the supply of X.

$$\frac{\delta X}{\delta P_x} \cdot dP_x = X \cdot \left(\frac{Px}{X} \cdot \frac{oX}{\delta P_x}\right)$$

or $$= X \cdot \eta_x \frac{dP_x}{P_x} \qquad (5.X)$$

For balanced growth, supply (1.X) + (5.X) must equal demand (2.X) + (3.X) + (4.X)

$$(X \cdot \eta_{xy} \cdot \bar{Y}) + (X \cdot \eta_{x} \frac{dP_x}{P_x}) =$$

$$(D_{xh} \cdot E_{xy} \cdot \bar{Y}) + (D_{xh} \cdot E_{xh} \cdot \frac{dP_x}{P_x}) + (D_{xf} \cdot E_{fx} \cdot \frac{dP_x}{P_x})$$

Isolating the required price adjustment

$$\frac{dP_x}{P_x} = \frac{\left[(X \cdot \eta_{xy}) - (D_{xh} \cdot E_{xy})\right] \bar{Y}}{(D_{xh} \cdot E_{xh}) + (D_{xf} \cdot E_{xf}) - (X \cdot \eta_{x})} \qquad (X)$$

Equation (X) is the third expression in the model and summarises growth of the export sector.

Effects of Growth in Non-traded Goods :

1. The output of N will increase :

$$\frac{\delta N}{\delta Y} \cdot dY = N \left(\frac{Y}{N} \cdot \frac{\delta N}{\delta Y} \right) \cdot \frac{dY}{Y}$$

or $$= N \cdot \eta_{ny} \cdot \bar{Y} \qquad (1.N)$$

where η_{ny} is growth elasticity of supply of N.

2. The demand for N will increase as Y increases

$$\frac{\delta D_n}{\delta Y} \cdot dY = D_n \cdot \left(\frac{Y}{D_n} \cdot \frac{\delta D_n}{\delta Y} \right) \cdot \frac{dY}{Y}$$

or $$= D_n \cdot E_{ny} \cdot \bar{Y} \qquad (2.N)$$

Where E_{ny} is growth elasticity of demand for N.

3. Any price asjustment will (negatively) affect demand for N.

$$\frac{\delta D_n}{\delta P_n} \cdot dP_n = D_n \left(\frac{P_n}{D_n} \cdot \frac{\delta D_n}{\delta P_n} \cdot \frac{dP_n}{P_n} \right)$$

or $$D_n \cdot E_n \cdot \frac{dP_n}{P_n} \qquad (3.N)$$

where E_n is price elasticity of demand for N

This is analogous to (3.X). We would expect the expansion resulting from (1.N) and (2.N) to be partly offset by the influence of negative price elasticity.

4. The price adjustment will (positively) affect supply of N.

$$\frac{\delta N}{\delta P_n} \cdot dP_n = N \left(\frac{P_n}{N} \cdot \frac{\delta N}{\delta P_n} \right) \frac{dP_n}{P_n}$$

or $$N \eta_n \cdot \frac{dP_n}{P_n} \qquad (4.N)$$

where η_n is price elasticity of supply of N

For equilibrium growth (1) + (4) must equal (2) + (3)

$$(N \cdot \eta_{ny} \cdot \bar{Y}) + (N \cdot \eta_n \cdot \frac{dP_n}{Pn}) = (D_n \cdot E_{ny} \cdot \bar{Y}) + (D_n \cdot E_n \cdot \frac{dP_n}{P_n})$$

isolating the price adjustment

$$\frac{dP_n}{P_n} = \frac{\left[(D_n E_{ny}) - (N \cdot \eta_{ny}) \right] \bar{Y}}{(N \cdot \eta_n) - (D_n \cdot E_n)} \qquad (N)$$

This fourth expression measures growth in the non-traded sector.

Combined Effects :-

It is worthwhile tracing the effects of growth in the various sectors with different elasticities of demand and supply.

In a closed economy, in the unlikely event of all elasticities being equal to unity (supply, income demand positive, and price demand negative), no price changes

are required and each sector would develop maintaining the same relative size with full employment maintained and all markets cleared.

With the economy open, however, even with unit elasticity in all demand and supply sectors, growth leads to imbalance.

The system is most easily followed by using simple numerical examples. Assume initial equilibrium in all sectors, with Y = 100 (index). The relative sizes of the sectors are assumed as follows, the sizes roughly corresponding with the relative importance of these sectors in New Zealand. The effect of a 5% growth is traced.

$$Y = 100$$

$$dY = 5 \quad \bar{Y} = \frac{dY}{Y} = 0.05$$

$$D_i = I = 20$$

$$\left.\begin{matrix} D_{xh} = 10 \\ D_{xf} = 20 \end{matrix}\right) = X = 30$$

$$D_n = N = 50$$

$$D_m = M = 20$$

$$\frac{P_x}{P_m} = 1$$

$$M \cdot P_m = X \cdot P_x \quad \text{.....external balance requirement.}$$

All sectors, internal and external, are balanced and all factors fully employed.

Case A : All elasticities equal to unity, except import supply $= \infty$

The effects of a 5% growth in capacity, balancing each sector would be : *

		After 1 year :	After 20 years :
Importables :	$\frac{dP_i}{P_i}$	= 0	0
	$d\ D_i$	= dI = 1.0	33.065
Import :	$\frac{dP_m}{P_m}$	= 0	0.00
	$d\ D_m$	= dM = 1.0	33.065
Non-Traded :	$\frac{dP_n}{P_n}$	= 0	0
	$d\ D_n$	= dN = 2.5	82.664
Export :	$\frac{dP_x}{P_x}$	= -0.017	- 0.269
	$d\ X$	= 1.0	30.923
	$d\ D_{xf}$	= 0.33	6.830
	$d\ D_{xh}$	= 0.66	31.372
Trade Balance :	$XP_x - M.P_m$	= -1.013	-33.45
Internal Balance :		0.5 = 0.4%	

* The Computer Programme used is shown in Appendix A.

Internal Balance is the amount of unused capacity in the economy, expressed in units and as a percentage of available productive capacity. The positive result represents unemployed factors; a negative result would indicate excess demand for internally produced goods.

In Case A, all resources of production for the home market are fully used and any excess demand is allowed to spill over into imports. With supply growing in all sectors at constant rates, the additional product arising

from internal growth is absorbed by internal demand, but potential export expansion meets falling prices and unemployment, because there has been no income growth in demand abroad. The (0.33) increase in output of exportables in excess of home requirements, can only be sold overseas at lower price, The overseas price and internal price are linked, affecting supply and demand reaction at home and abroad. All of the 7% unemployed factors in the above analysis are in the export sector. As a result, deficit on trade grows from year to year.

$M \cdot P_m = 21 \quad X \cdot P_x = 19.987$ after one year.

It is this kind of situation which creates the political climate favourable to the imposition of full-employment and restrictive trade policies. Case A shows the most "balanced" growth path imaginable, with demand and supply growth as a linear extension of existing patterns, will still cause internal imbalances as a result of external forces. Over a long time period the situation grows steadily worse. After twenty years, 7% of existing capacity is unemployed and the external trade gap ($X.P_x - M.P_m$) reaches - 33.45 in the twentieth year.

It is not suggested that, in fact, such an imbalance would be sustained for twenty years. One can assume that the income loss in trade, working through the multiplier, would reduce growth rate. The model assumes expenditure at capacity product/income whereas the unemployed sector represents less than capacity product/expenditure potential.

As a result, over twenty year cycle, it can be assumed that elasticities (particularly growth elasticities) would become less than unity, dampening down expansionary forces.

In addition, one can expect that there would be some growth in the foreign demand, which would reduce, eliminate, or reverse the deficit. Failing this, some imbalance would remain. This exercise deals with the situation in which the home economy is expansionary relative to foreign growth, leading to deficit.

However, policical and social pressures are so strong as not to tolerate the delay involved in waiting upon the working of natural economic forces. There is a strong temptation to institute policy measures to hasten or thwart the equilibrating economic forces.

Case B : It can be argued that, in New Zealand, the income elasticity of demand for imports is considerably in excess of unity. The major imports - motor vehicles, manufactured consumer goods, investment equipment, etc., represent those commodities for which increasing prosperity creates increasing demand. By contrast, the income elasticity of demand for exportables is relatively low because our traditional exports of dairy produce, meat, wool, etc., represent commodities, the consumption of which grows little with increasing prosperity. Such elasticities would, clearly, aggravate external imbalance.

The price inelasticity of home demand for imports may to some extent be offset if the foreign demand for

exports is price elastic, and it is difficult to assess in advance what these elasticities are likely to be. The traditional markets of a small country like New Zealand are not sensitive to supply offer price changes especially if export (foreign import) quantities are controlled by quota arrangements. Prices are determined on the foreign market, and the home producer is likely to be a price-taker, unable to influence sales volume by price adjustment. There are, however, two areas which are likely to be highly sensitive to price changes.

(a) Potential markets, especially those in low-income developing countries, are those approaching income levels where protein goods are becoming an increasing part of the diet. A small reduction in the prices of some of New Zealand's standard meat and dairy exports might well lead to a large increase in quantity sold.

(b) A range of 'new' export products in the manufacturing sector, currently produced for the internal market at prices marginally above world prices, might add new commodities to the exportable group.

Income elasticity of demand for non-traded goods is also likely to be greater than unity, again because the tertiary sector, which it largely represents, is that which tends to grow most rapidly with increasing prosperity. Rising income increases demand for roads, education facilities, internal communications, power, entertainment, holidays, housing, etc. Some of this will be imported, but most will be supplied from internal resources.

Case B assumes the following elasticities, i.e. with increasing incomes, price demand elasticities, are low, income demand elasticities are high for imports, importables and non-traded goods, low for exportables; foreign price elasticity of demand is high. All supply elasticities are unitary, except for the supply of imports, which is infinity.

Supply			Demand		
η_i	=	1	E_i	=	-0.5
η_{iy}	=	1	E_{iy}	=	1.5
η_x	=	1	E_{xh}	=	-0.5
η_{xy}	=	1	E_{xy}	=	0.5
η_m	=	∞	E_m	=	-0.5
η_n	=	1	E_n	=	-0.5
η_{ny}	=	1	E_{my}	=	1.5
			E_{ny}	=	1.5
			E_{xt}	=	-1.5

The result of balancing each sector by price adjustment leads to the following :

Importables:	After One Year:	After 20 Years:
$\frac{dP_i}{P_i}$ =	+ 0.016	0.333
$dI = dD_i$ =	1.333	52.711
Imports:		
$\frac{dP_m}{P_m}$ =	0	0
$dD_m = M$ =	1.5	64.957

Exports:			
$\frac{dP_x}{P_x}$	=	-0.02	-0.384
dX	=	0.923	25.032
dD_{xf}	=	0.576	15.238
dD_{xh}	=	0.346	9.744
Non-Traded:			
$\frac{dP_n}{P_n}$	=	+0.166	0.333
$dD_n = dN$	=	3.333	121.779
External Balance:		-1.318	-63.218
Internal Balance:		-0.589	-44.194

Required increase in output is in excess of total increased capacity, and is likely to cause a situation of over-full employment with consequent inflationary tendencies.

The external and internal imbalances shown in this case are, of course, unrealistic. They show the excess demand which would be generated if incomes are permitted to exceed full capacity level. In real terms there cannot exist such an internal imbalance; the value (-44.944) shown indicates a level of demand which must remain unsatisfied and illustrates the kind of demand pressures which can be generated by growth when increased income induces a desire in a community for commodities beyond their means :- i.e. it represents an extreme case in which marginal propensity to comsume out of increased

income is greater than one. The case is perhaps typical of a developing country where a small income increase above subsistance level brings about an awareness of hitherto unknown consumer goods and generates an excessively high (and inflationary) level of demand. However, it is not unrealistic in terms of a developed country such as New Zealand where a desire to reach unattainable improvements in the standard of living induces a readiness to meet present demand out of future income by credit purchase. The presence of full employment, security, expectations of prosperity, and the desire for improved living standards can well lead to a 'spending spree' period when MPC approaches or exceeds unity. It is unrealistic, however, to assume that such a phenomenon is likely to continue over a long period. The kind of elasticities in Case B may occur over one or two time periods, but not over twenty.

It would be tedious and unnecessary to enumerate all possible cases.* A composite table showing the effects of different elasticities should be sufficiently illustrative. (See Table 3.1).

The possible combinations of these elasticities is almost endless. (40776×10^{94} !). However, they can be reduced by the following arguments.

1. Growth elasticities are much stronger than price elasticities in determining trends resulting from national income growth. The effect of price elasticities is to

* A list of results from selected elasticities is shown on pages 96 - 103.

modify the general trend. If therefore, price elasticities are assumed equal to unity, there should be little distortion of the final result. In New Zealand, the wage structure which ties income closely to price increases effectively turns any overall price increase into income growth.

2. The exception to this rule is in the field of export demand. Prices are determined by foreign market conditions and cannot be related to internal growth. Unless the foreign demand is increasing with increasing prosperity, the market is likely to be sensitive to price changes. As world prosperity increases the demand for manufactured goods expands relatively faster than that for the primary products which form New Zealand's staple exports. It is reasonable, therefore, to assume that foreign price elasticity of demand for exports is greater than unity.

3. Supply elasticities are likely to vary over time. New Zealand's importables and non-traded goods are dependent for growth on investment and new construction, not only of production units but of public works such as transport, power, training and education. In the short run, growth elasticity is likely to be low. In the long-run with the growth of a large internal market, large-scale investment may produce economies of scale which provide greater elasticity of supply. However, trade restraints are normally inspired by short-run imbalances to correct sudden adverse movements in foreign trade. They tend to remain for long periods.

By contrast, primary products can be expanded relatively more easily in the short run, by exploitation of existing stock-forest, farm and mine - by labour saving methods, by increasing stock per acre, etc. Long run expansion, in contrast to manufacturing, may well show lower growth elasticity than short-run expansion.

The actual values one gives to elasticities is purely arbitrary; varying the values simply exaggerates or modifies a tendency. Case C substitutes in to the model the value ($\pm$) 1.5 for elasticities assumed greater than unity and 0.5 for elasticities less than unity.

Case C :

Thus, all elasticities are ($\pm$) 1 except :

$$\eta_{iy} = 0.5$$

$$\eta_{ny} = 0.5$$

$$E_{iy} = 1.5$$

$$E_{ny} = 1.5$$

$$E_{xy} = 0.5$$

$$E_{my} = 1.5$$

$$E_{xf} = 1.5$$

The results are :

		After One Year:	After Twenty Years:
Importables :	$\frac{dP_i}{P_i}$	0.025	0.499
	$dD_i = dI$	1	33
Imports :	$dM = dD_m$	1.5	64.957
Exports :	$\frac{dP_x}{P_x}$	-0.018	-0.353
	dX	0.964	26.742
	dD_{xf}	0.535	13.699
	dD_{xh}	0.428	13.042
Non-Traded :	$\frac{dP_n}{P_n}$	0.025	0.5
	$dN = dD_n$	2.5	72.664
External Balance :		-1.33	-63.133
Internal Balance :		0.535	22.856

Thus, because of the leakage into imports, growth leads to deficit and unemployment.

(a) there is still some unemployment. Using $\frac{1}{100}$ of original 100 capacity output as a unit of productive resources 0.54 units are unused.

(b) Inflationary excessive demand is apparent. Using $\frac{1}{100}$ of original 100 full employment income as a unit of demand, excess demand equals 0.42 units more than full employment income or 0.96 units more than real income (= actual product).

(c) Price rises threaten to make the import-

competing sector non-competitive against imported goods.

(d) There is a deficit on foreign payments.

The results after 20 years of such growth are:

Capacity Output=Full Employment real income=265.3dM-64.9

Capacity Output=Full Employment real income=265.3=165%growth

Imports	=	84.90	=325% "
Exports (Volume)	=	56.74	=183% "
(Value)	=	36.71	=84% "
Importables (Volume)	=	53.07	=165% "
(Value)	=	79.54	=298% "
Exportables (Volume)	=	23.04	=130% "
(Home consumed)(Value)	=	14.19	=49% "
Non-traded (Volume)	=	132.66	=165% "
(Value)	=	199.0	=298% "

$$= \frac{dP_i}{P_i} = 0.5$$

$$\frac{dP_x}{P_x} = 0.353$$

$$\frac{dP_n}{P_n} = 0.5$$

$$dP_m = 0.0$$

This kind of analysis goes some way towards explaining the limiting and somewhat inconsistent conclusions arrived at by the use of traditional two-country, two-commodity analysis to which trade theory is largely confined.

For example, I.F. Pearce, "International Trade" (MacMillan, 1970), Chapter 10, one of the most recent and comprehensive texts in Trade Theory, concludes that some of the benefits of growth will be lost as a result of demand changes adversely affecting terms of trade. The change in welfare is primarily dependent on demand elasticities *

$$dw = 1 + \frac{C_2}{E'_{11} + E_{22} + 1} P_1 \, dO_1$$

Where dW = change in welfare

C_2 = Home marginal propensity to consume foreign product.

E'_{11} = Foreign elasticity of demand for price of home commodity.

E_{22} = Home elasticity of demand for price of foreign commodity.

P_1 = Price of home commodity

O_1 = Full employment home output

$P_1 \, dO_1$ = Change in income where P_1 is constant (numeraire)

The results of such and oversimplified model show that $dW < P_1 dO$, i.e. that, assuming Marshall-Lerner stability conditions ($E'_{11} + E_{22} + 1 < 0$) and C_2 positive, only part of increased welfare due to growth accrues to the home country, because terms of trade tend to move against the growing country.

This conclusion is not supported by empirical observation; since World War II, terms of trade movements have tended to favour those countries with the highest growth rates, especially where growth is in manufacturing - e.g. Germany, Japan.

The normal two-commodity, two country conclusion is modified when the third, internal, commodity is introduced, under any of the following conditions.

(a) When the internal sector is very large relative to the external sector - e.g. U.S.A. where marginal propensity to import is 0.04, the loss in welfare due to any possible shift in terms of trade is negligible ; import prices are not likely to rise significantly.

(b) If growth is centred in the importable sector - i.e. supply (growth) elasticity of importables is high, additional import-type goods may be supplied from internal production with a possible quantity reduction in imports and negligible effect in import prices.

(c) If income (growth) elasticity of demand for exportables is high, and supply (growth and price) elasticities of supply are low, export prices are not likely to fall. If the foreign country is also growing (at a slower rate, but with high growth demand elasticity for home goods), export volume may increase even with constant or higher prices.

The most important reservation that must be borne in mind when considering the model is that it deals with the growth of the home economy relative to the growth of those foreign economies (the rest of the world) which are her trading partners. Trading imbalances of the kind indicated are not likely to occur if other economies are growing and, with growth, demand for home exports increases. What is emphasised is the interdependence of countries which depend on trade. No single country can sustain a growth rate which is out-of-line with general trends.

Table 4.1 **Effects of Various Elasticities on Growth**

On Sector				On Internal Growth	External Balance	Commodity Price	Barter Terms of Trade
η_{ny}	$>$	1	rapid expansion	Expansionary	-	reduction	-
η_{ny}	$<$	1	slow expansion	Dampening	-	slight reducing effect	-
η_{n}	$>$	1	rapid expansion	Expansionary	-	counteract increase possible reduction	-
η_{n}	$<$	1	slow expansion	Dampening	-	little effect	-
E_{ny}	$>$	1	rapidly increasing demand	Expansionary	-	increase	-
E_{ny}	$<$	1	slowly increasing demand	Slow Expansion	-	slight increase	-
E_{n}	$<$	-1	reduced expenditure	Dampening	Demand switch to Imports = worsened	counteract increase	-
E_{n}	$>$	-1	increased expenditure	Expansionary	Demand switch from Imports - improved	little influence	-
η_{xy}	$>$	1	rapid expansion	Expansionary	Increased X_f (volume)	reduction	adverse
η_{xy}	$<$	1	slow expansion	Dampening	small increase X_f	slight reduction	adverse
η_{x}	$>$	1	contraction	Dampening	Reduce X_f (volume)	counteract reduction	improved

Table 2.1

	On Sector	On Internal Growth	External Balance	Commodity Price	Barter Terms of Trade
$E_{xy} > 1$	Rapidly expanding demand	Expansionary	Slow X_f growth	increase	improved
$E_{xy} < 1$	slowly expanding demand	Dampening	Rapid X_f growth	reduction	adverse
$E_{xf} < -1$	increased f expenditure	Expansionary	Improved	Slight reduction	adverse
$E_{xf} > -1$	decreased f expenditure	Dampening	Worsened	Large reduction	adverse
$E_{xh} < -1$	increased expenditure	Expansionary	Reduce X growth (volume)	Slight reduction	adverse
$E_{xh} > -1$	decreased expenditure	Dampening	Increase X_f growth	Greater reduction	adverse
$E_{my} > 1$	Rapidly increasing demand	-	Worsened	negligible effect	-
$E_{my} < 1$	Slowly increasing demand	-	Worsened	negligible effect	-
$\eta_{iy} > 1$	Rapid growth	Expansionary	Improved	decrease	-
$\eta_{iy} < 1$	Slow growth	Dampening	slightly improved	small decrease	-
$\eta_i > 1$	Growth	Expansionary	improved	decrease	-
$\eta_i < 1$	Slow Growth	Dampening	slightly improved	decrease	-

Table 3.1

		On Sector	On Internal Growth	External Balance	Commodity Price	Barter Terms for Trade
ε_{iy}	> 1	Rapidly increasing demand	Expansionary	Improved	Increase	-
ε_{iy}	< 1	Slowly increasing demand	Dampening	Slightly improved	Increase	-
ε_{i}	< -1	Reduced demand Reduced expenditure	Dampening	Demand switch to imports - worsened	Decrease	-
ε_{i}	> -1	Reduced demand Increased expenditure	Dampening	Possible expenditure switch from imports	Decrease	-

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Chapter 5.

Effects of Policy Alternatives, With Given Growth Rates.

This section uses numerical values to illustrate the probable effects of alternative policies in different situations. It must be emphasised that, in themselves, the numerical values obtained have little significance. Their significance lies in comparing each set of results with the others, and recognising the relative effects of various measures in a given set of circumstances.

The results, a selection of which appears an the end of this chapter, were derived on the following assumptions:

1. Sector Size: The three internal supply sectors are given initial values of:

(Equivalent computer notation given in brackers)

I (XI)	=	Importables	= 20
X (ZX)	=	Exportables	= 30
N (ZN)	=	Non-traded	= 50

Demand sectors are given initial values

D_i (DI)	=	demand for importables	= 20
D_m (DM)	=	demand for imports	= 20
D_{xf} (DXF)	=	foreign demand for exportables	= 20
D_{xh} (DXH)	=	home demand for e exportables	= 10
D_n (DN)	=	demands for non-traded goods	= 50

Initially, all sectors, internal and external, have balanced supply/demand.

2. Prices: All prices are given a 1.00 (index) starting value.

3. Growth: Y (ZCap) = Product = I + X+ N = 100 in base time period, is assumed to grow at a constant rate of 5%. Thus, over twenty time-periods capacity Y grows from 100 to 265.4.

4.Elasticities: Fifteen elasticities are used.

$\eta iy\ \eta ny\ \eta xy$ (GIY, GNY, GXY) are growth supply elasticities for the three internal producing sectors. They are assumed to be positive and unity (1.000) throughout, representing 'balanced' growth potential; i.e. each sector expands potential output at 5% per time period. Using unit values is for convenience of computation. The model is concerned with measuring effects when other elasticities (supply price, demand growth and demand price) are less than, equal,to, or greater than growth of productive capacity.

Supply of imports is assumed infinitely elastic - i.e. price remains unchanged -- (unless tariff is imposed, affecting internal price only) and quantity supplied varies to meet demand. No elasticity value need be introduced into the model.

$\eta i\ \eta n\ \eta x$ (GI, GN, GX,) are price elasticities of supply. Three variations are used: 0.5, 1.0, 1.5, representing inelastic, unit and elastic values.

E_{iy} E_{ny} E_{xy} E_{my} (EIY, ENY, EXY, EMY,)are growth (income) elasticities of demand for the four demand sectors. They are varied through 0.5, 1.0, 1.5. Foreign demand is excluded as being not related to internal growth.

E_i E_n E_{xh} E_{xf} E_m (EI, EN, EXH, EXF, EM) are price elasticities of demand, assumed negative and varied through -0.5, -1.0, -1.5.

5. Process: The adjustment mechanism of Chapter 4 is processed to give the progressive results of a twenty-time period growth sequence showing the following results.

dD_i (DPI) = dI (DZI) In order to balance increased demand (dD_i) a matching increase in supply (dI) is required . dP_i (DPI) shows the required price adjustment.

dD_{xh}, dD_{xf} (DDXH, DDXF) show the changes in home and foreign demand for exportables and their sum represents required supply growth (dX).

dP_x (DPX) shows price adjustment, the same in both internal and foreign markets.

dD$_n$ (DDN) = dN (DZN) shows demand/supply balance requirement for non-traded goods.

dP_n (DPN) shows price adjustment.

dD_m (DDM) shows change in import demand.

dP_m (DPM) shows internal price change. External price remains unchanged at 1.00.

All these changes are shown in percentage terms.

External Balance: This is $dD_{xf} \cdot P_x - dD_m \cdot P_m$ where P_m = 1.0 (external price).

A negative value shows an external deficit and a positive value a surplus. Each value represents balances for the time period in question -- it is not cumulative.

Internal Balance: This is Total Internal Capacity minus Total Demand, i.e. $(100 \times 1.05^n) - (Di + Dxh + Dxf + Dn)$ where n is the number of years of growth. A negative value represents excess demand on resources and indicates relative strength of over-employment and inflationary pressures. A positive value indicates excess capacity and relative unemployment levels.

The two balance values are shown in absolute terms and must be related to current trade and capacity levels.

Sectoral Balance can be judged by comparing the required growth of the sector with the total capacity maximum.

6. Limitation of Model: The major limitation is that the model takes no account of variation in the foreign sector. In particular it must be recognised that, if one assumes that growth is taking place abroad and that there will be some autonomous growth in demand for exports and some autonomous change in priees of imports, the results can be considerably modified. Any such assumptions could readily be introduced of sufficient information were available for assessment of the foreign sectors.

7. Policies: It is assumed that any one of three policies can be followed:

(a) Free Trade Prices and quantities are allowed

to adjust with no interference from government.

(b) Tariff A 25% tariff is imposed, raising internal import price to 1.25 i.e. in calculation P_m (internal) has a value of 1.25 and demand for imports is adjusted. For external balance P_m retains a value of 1.00.

(c) Quantitative Control In each time period the level of imports is restricted to the value of exports of the previous period. Any excess demand for imports is assumed to be diverted to importables (two thirds of excess import demand) and non-traded goods (one-third of excess import demand). This allocation is arbitrary. It is assumed that any demand diverted from imports will largely be channelled into the closest substitutes (importables), some going into non-tradables, with a negligible (zero) amount going to exportables.

Adjustments to the model are thus:-

From previous time period.

$$D_m = D_{fx} \cdot P_x$$

Equation I becomes

$$\frac{dPI}{PI} = \frac{(D_i \cdot E_{iy} - I \cdot \eta_{iy})\ \bar{Y} + 0.66\ dD_m}{I \cdot \eta_i\ D_i \cdot E_i}$$

then

$$dD_i = D_i \cdot E_{iy} \cdot \bar{Y} + D_i \cdot E_i \cdot \frac{dP_i}{P_i} + 0.33\ dD_m$$

Equation (N) becomes

$$\frac{dP_n}{P_n} = \frac{(D_n \cdot E_{ny} \cdot -N \cdot \eta_{ny})\,\bar{Y} + 0.33\ dD_m}{N \cdot \eta_n - D_n \cdot E_n}$$

and

$$dD_n = D_n \cdot E_{ny} \cdot \bar{Y} + D_n \cdot E_n \cdot \frac{dP_n}{P_n} + 0.33\ dD_m$$

8. Results: Over 800 combinations of elasticities were processed, using three policy variations. The following tables show the results of time period 1 and 20 for 21 selected combinations and are sufficient to show the variety of problems which confront an economy during the growth process.

Interpretation The results shown on the next few pages must be interpreted very carefully. They do not pretend to prophesy what will happen under given policies and growth conditions; they take each sector in turn and produce the balance requirement for that sector under given growth rates, supply and demand elasticities, and the required price adjustment needed in that sector to bring about balance; the balance requirement may in fact represent an unattainable set of conditions.

Thus, Case 1 assumes all elasticities (except supply of imports) equal to unity - growth is as 'balanced' as possible. Under Free Trade the Importable (D_i = I) and Non-traded (D_n =N) sectors expand by 5% to match product (Tot. Cap.) growth and no price adjustment is required for sectoral balance. Demand for imports (Dm) also increases by 5%. However, in order to sell increased exportables

abroad it is necessary to reduce export price by 1.7%, which has the effect of reducing output of exportables slightly below full capacity. The final effect is that home demand for exportables rises rather more than 5% (by 6.6%) because of the price fall, but foreign demand rises only by 1.6%, because no increased demand is assumed as a result of growth in foreign incomes. Total demand for exportables is thus rather less than capacity with the result that Internal Balance, shown in the last column, is 0.5 units of idle capacity (i.e. 0.47% of new total capacity of 105 units). Increased foreign sales at the lower price result in increased foreign receipts which are not sufficient to match increased expenditure in imports. External Balance thus shows a deficit. Over a twenty year period the level of unemployment and the trade deficit grow to 18.7 (7% of total capacity) and 34.0 respectively.

Tariff is able to eliminate deficit in the short term and reduce it in the long term. By itself however, tariff does not correct the unemployment problem. This is because the assumption is that tariff works on imports only, absorbs the spending power represented by increased internal price of imports and does not divert demand to the internal sector. A changed assumption - e.g. that tariff revenue were re-directed to internal demand - would give results more like those for the control policy.

The control policy eliminates External Imbalance and stimulates sufficient activity to ensure full employment at the expense of higher prices in the Internal sectors.

EFFECTS OF VARIOUS POLICIES ON SECTOR EQUILIBRIUM - SELECTED ELASTICITIES

CASE 1.

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_y	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-1.0	-1.0	-1.0	-1.0	-1.0

% Change in:	Tot. Cap	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	5.0	0.0	6.6	1.6	-1.7	5.0	0.0	5.0	0.0	-1.0	0.5
Trade(20 t.p.	165.4	165.4	0.0	245.4	31.9	-27.9	165.4	0.0	165.4	0.0	-34,0	18.7
Tar- (1 t.p	5.0	5.0	0.0	6.6	1.6	-1.7	5.0	0.0	-20.0	25.0	3.9	0.5
iff (20 t.p	165.4	165.4	0.0	245.4	31.9	-27.9	165.4	0.0	102.1	25.0	-21.4	18.7
Con- (1 t.p.	5.0	5.8	0.8	6.6	1.6	-1.7	5.6	0.6	0.0	0.0	0.0	0.0
trol (20 t.p.	165.4	192.2	10.1	245.4	31.9	-27.9	186.8	8.2	-4.5	0.0	0.1	2.5

CASE 2.

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	-0.5	-0.5	-0.5	-0.5	-0.5

% Change in:	Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	3.3	-1.7	3.8	1.4	-2.8	3.3	-1.7	2.5	0.0	-0.8	2.0
Trade (20 t.p.	165.4	92.6	-33.3	112.6	30.6	-53.8	92.6	-33.3	63.8	0.0	-20.7	83.0
Tariff (1 t.p.	5.0	3.3	-1.7	3.8	1.4	-2.8	3.3	-1.7	-10.0	25.0	1.7	2.0
(20 t.p.	165.4	92.6	-33.3	112.6	30.6	-53.8	92.6	-33.3	43.9	25.0	-16.7	83.0
Con- (1 t.p.	5.0	3.8	-1.2	3.8	1.4	-2.8	3.8	-1.3	0.0	0.0	-0.2	1.6
trol (20 t.p.	165.4	105.7	-26.6	112.6	30.6	-53.8	103.1	-27.9	-37.0	0.0	-0.5	75.2

CASE 3.

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	-1.5	-1.5	-1.5	-1.5	-1.5

% Change in:	Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	6.0	1.0	9.0	1.5	-1.0	6.0	1.0	7.5	0.0	-1.4	-0.4
Trade (20 t.p.	165.4	220.7	20.0	389.3	16.4	-10.2	220.7	20.0	324.8	0.0	-64.0	-31.4
Tariff(1.t.p.	5.0	6.0	1.0	9.0	1.5	-1.0	6.0	1.0	-30.0	25.0	6.1	-0.4
(20 t.p.	165.4	220.7	20.0	389.3	16.4	-10.2	220.7	20.0	176.6	25.0	-34.4	-31.4
Con- (1.t.p.	5.0	7.0	1.9	9.0	1.5	-1.0	6.8	1.7	0.0	0.0	-0.1	-1.0
trol (20 t.p.	165.4	258.0	31.7	389.3	16.4	-10.2	304.6	29.4	4.5	0.0	0.0	-53.8

CASE 4:

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	0.5	0.5	0.5	1.0	1.0	1.0	1.0	-0.5	-0.5	-0.5	-0.5	-0.5

% Change in:	Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	5.0	0.0	6.6	1.6	-3.4	5.0	0.0	5.0	0.0	-1.3	0.5
Trade (20 t.p.	165.4	165.4	0.0	245.4	31.9	-55.8	165.4	0.0	165.4	0.0	-41.4	18.7
Tariff(1.t.p.	5.0	5.0	0.0	6.6	1.6	-3.4	5.0	0.0	-7.5	25.0	1.1	0.5
(20 t.p.	165.4	165.4	0.0	245.4	31.9	-55.8	165.4	0.0	133.7	25.0	-35.0	18.7
Con- (1 t.p.	5.0	5.8	1.6	6.6	1.6	-3.4	5.6	1.3	0.0	0.0	-0.3	0.0
trol (20 t.p.	165.4	188.4	17.5	245.4	31.9	-55.8	183.7	14.1	-39.4	0.0	-0.4	4.8

CASE 5

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	0.5	0.5	0.5	1.0	1.0	1.0	1.0	-1.5	-1.5	-1.5	-1.5	-1.5

% Change in:	Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	5.0	0.0	7.5	2.5	-1.7	5.0	0.0	5.0	0.0	-0.8	0.25
Trade (20 t.p.	165.4	165.4	0.0	293.8	51.4	-28.0	165.4	0.0	165.4	0.0	-31.2	9.9
Tariff(1 t.p.	5.0	5.0	0.0	7.5	2.5	-1.7	5.0	0.0	-32.5	25.0	6.6	0.2
(20 t.p.	165.4	165.4	0.0	293.8	51.4	-28.0	165.4	0.0	70.5	25.0	-12.3	9.9
Con- (1 t.p.	5.0	5.4	0.8	7.5	2.5	-1.7	5.3	0.6	0.0	0.0	0.1	0.0
Trol (20 t.p.	165.4	179.6	11.0	293.8	51.4	-28.0	176.7	8.8	5.4	0.0	0.0	1.4

CASE 6.

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	1.5	1.5	1.5	1.0	1.0	1.0	1.0	-1.5	-1.5	-1.5	-1.5	-1.5

% Change in	Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1t.p.	5.0	5.0	0.0	6.6	1.6	-1.2	5.0	0.0	5.0	0.0	-0.9	0.5
Trade (20t.p.	165.4	165.4	0.0	245.4	31.9	-18.6	165.4	0.0	165.4	0.0	-31.6	18.7
Tariff(1 t.p.	5.0	5.0	0.0	6.6	1.6	-1.2	5.0	0.0	-32.5	25.0	6.6	0.5
(20 t.p.	165.4	165.4	0.0	245.4	31.9	-18.6	165.4	0.0	70.5	25.0	-12.6	18.6
Con- (1 t.p.	5.0	5.8	0.5	6.6	1.6	-1.2	5.6	0.4	0.0	0.0	0.1	0.0
trol (20 t.p.	165.4	193.5	7.0	245.4	31.9	-18.6	187.9	5.7	2.9	0.0	0.0	1.7

CASE 7

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	1.5	1.5	1.5	1.0	1.0	1.0	1.0	-0.5	-0.5	-0.5	-0.5	-0.5

% Change In:	Tot. Cap.	$D_i=I$	P_i	D_{xh}	D_{xf}	P_x	$D_n=N$	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	5.0	0.0	5.8	0.8	-1.7	5.0	0.0	5.0	0.0	-1.2	0.7
Trade (20t.p.	165.4	165.4	0.0	202.8	14.9	-27.9	165.4	0.0	165.4	0.0	-36.5	26.3
Tariff(1 t.p.	5.0	5.0	0.0	5.8	0.8	-1.7	5.0	0.0	-7.5	25.0	0.7	1.3
(20 t.p.	165.4	165.4	0.0	202.8	14.8	-27.9	165.4	0.0	133.7	25.0	-30.2	26.3
Con- (1 t.p.	5.0	6.2	0.8	5.8	0.8	-1.7	6.0	0.6	0.0	0.0	-0.2	0.0
trol 20 t.p.	165.4	203.4	9.4	202.8	14.8	-27.9	195.8	7.6	-16.3	0.0	-0.2	3.5

CASE 8.

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-0.5	-0.5	-0.5	-0.5	-0.5

% Change in:	Tot. Cap.	$D_i=I$	P_i	D_{xh}	D_{xf}	P_x	$D_n=N$	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	3.7	-2.5	4.6	2.1	-4.2	3.7	-2.5	2.5	0.0	-0.9	1.5
Trade (20 t.p.	165.4	108.8	-50.0	141.9	49.1	-80.0	108.8	-50.0	63.9	0.0	-27.0	65.1
Tariff(1 t.p.	5.0	3.7	-2.5	4.6	2.1	-4.2	3.7	-2.5	-10.0	25.0	1.5	1.5
(20 t.p.	165.4	108.8	-50.0	141.9	49.1	-80.7	108.8	-50.0	43.8	25.0	-23.0	65.1
Con- (1 t.p.	5.0	4.2	-1.7	4.6	2.1	-4.2	4.1	-1.9	0.0	0.0	-0.4	1.3
trol (20 t.p.	165.4	117.8	-41.2	141.9	49.1	-80.7	116.0	-43.0	-66.0	0.0	-1.0	59.7

CASE 9.

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	0.5	0.5	0.5	1.5	1.5	1.5	1.5	-0.5	-0.5	-0.5	-0.5	-0.5

% Changes in	Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1t.p.	5.0	6.2	2.5	8.7	1.2	-2.5	6.2	2.5	7.5	0.0	-1.8	-0.5
Trade (20t.p.	165.4	236.2	50.0	377.8	13.5	-25.5	236.2	50.0	324.8	0.0	-68.0	-40.5
Tariff (1t.p.	5.0	6.2	2.5	8.7	1.2	-2.5	6.2	2.5	-5.0	25.0	+0.7	- 0.5
(20t.p.	165.4	236.2	50.0	377.8	13.5	-25.5	236.2	50.0	275.4	25.0	-58.1	-40.5
Con- (1t.p.	5.0	7.5	4.9	8.7	1.2	-2.5	7.2	4.4	0.0	0.0	-0.2	-1.2
trol (20t.p.	165.4	279.2	75.7	377.8	13.5	-25.5	270.6	70.7	-15.3	0.0	0.0	-66.3

CASE 10.

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-1.5	-1.5	-1.5	-1.5	-1.5

% Change in:	TOT. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	4.4	-1.3	5.6	3.1	-2.1	4.4	-1.3	2.5	0.0	-0.3	0.7
Trade (20 t.p.	165.4	135.5	-25.0	193.2	81.5	-40.4	135.5	-25.0	63.9	0.0	-11.1	34.9
Tariff (1 t.p.	5.0	4.4	-1.3	5.6	3.1	-2.1	4.4	-1.3	-35.0	25.0	7.2	0.7
(20 t.p.	165.4	135.5	-25.0	193.2	81.5	-40.4	135.5	-25.0	3.9	25.0	0.8	34.8
Con- (1.t.p.	5.0	4.6	-0.9	5.6	3.1	-2.1	4.5	-1.0	0.0	0.0	0.2	0.6
trol (20 t.p.	165.4	142.2	-19.1	193.2	81.5	-40.4	140.9	-20.3	8.6	0.0	-0.1	30.8

CASE 11

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	0.5	0.5	0.5	1.5	1.5	1.5	1.5	-1.5	-1.5	-1.5	-1.5	-1.5

% Change in:	Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	$D_{n=N}$	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	5.6	1.2	9.3	1.9	-1.3	5.6	1.2	7.5	0.0	-1.4	-0.2
Trade (20 t.p.	165.4	198.7	24.9	407.0	20.9	-12.8	198.7	24.9	324.7	0.0	-63.8	-18.7
Tariff(1 t.p.	5.0	5.6	1.2	9.3	1.9	-1.3	5.6	1.2	-30.0	25.0	6.1	-0.2
(20 t.p.	165.4	198.7	24.9	407.0	20.9	-12.8	198.7	24.9	176.6	25.0	-34.2	-18.7
Con- (1 t.p.	5.0	6.2	2.4	9.3	1.9	-1.3	6.1	2.2	0.0	0.0	1.2	-0.6
trol (20 t.p.	165.4	221.3	40.4	407.0	20.9	-12.8	216.8	37.4	5.5	0.0	0.0	-32.2

CASE 12.

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	1.5	1.5	1.5	0.5	0.5	0.5	0.5	-0.5	-0.5	-0.5	-0.5	-0.5

% Change in:	Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	3.1	-1.3	3.5	1.0	-2.1	3.1	-1.3	2.5	0.0	-0.7	2.2
Trade (20 t.p.	165.4	85.0	-25.0	99.3	22.2	-40.4	85.0	-25.0	63.9	0.0	-18.2	91.4
Tariff(1.t.p.	5.0	3.1	-1.3	3.5	1.0	-2.1	3.1	-1.3	-10.0	25.0	1.8	2.2
(20 t.p.	165.4	85.0	-25.0	99.3	47.9	-40.4	198.7	24.9	43.8	25.0	-14.2	91.4
Con- (1 t.p.	5.0	3.7	-0.9	3.5	1.0	-2.1	3.6	-1.0	0.0	0.0	-0.2	1.8
trol (20 t.p.	165.4	100.1	-19.7	99.3	47.9	-40.4	97.1	-20.7	-25.4	0.0	-0.3	82.4

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CASE 13.

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-0.5	-0.5	-0.5	-0.5	-0.5

% Change in:	Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	6.8	1.2	8.1	0.6	-1.3	6.8	1.2	2.5	0.0	-1.6	-0.7
Trade (20 t.p.	165.4	278.0	24.9	350.5	5.2	-12.7	278.0	24.9	324.8	0.0	-66.3	-65.6
Tariff (1 t.p.	5.0	6.8	1.2	8.1	0.6	-1.3	6.8	1.2	-5.0	25.0	0.8	-0.7
(20 t.p.	165.4	278.0	24.9	350.5	5.2	-12.7	278.0	24.9	275.4	25.0	-56.4	-65.6
Con- (1 t.p.	5.0	8.7	2.4	8.1	0.6	-1.3	8.3	2.2	0.0	0.0	-0.1	-1.9
trol (20 t.p.	165.4	350.4	37.5	350.5	5.2	-12.7	335.9	35.1	-7.0	0.0	0.0	-109.1

CASE 14.

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	1.5	1.5	1.5	0.5	0.5	0.5	0.5	-1.5	-1.5	-1.5	-1.5	-1.5

% Change in:	Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	3.8	-1.0	4.5	2.1	-1.4	3.8	-1.0	2.5	0.0	-0.3	1.5
Trade (20 t.p.	165.4	108.8	-16.7	141.9	49.1	-26.9	108.8	-16.7	63.8	0.0	-10.9	65.1
Tariff (1 t.p.	5.0	3.8	-1.0	4.5	2.1	-1.4	3.8	-1.0	-35.0	25.0	7.1	1.5
(20 t.p.	165.4	108.8	-16.7	141.9	49.1	-26.9	108.8	-16.7	3.9	25.0	1.0	65.1
Con- (1 t.p.	5.0	4.2	-0.6	4.5	2.1	-1.4	4.1	-0.7	0.0	0.0	0.1	1.2
trol (20 t.p.	165.4	121.3	-22.7	141.9	49.1	-26.9	118.8	-13.5	8.8	0.0	0.0	57.6

CASE 15.

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-1.5	-1.5	-1.5	-1.5	-1.5

% Change in:		Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free Trade	(1 t.p.	5.0	6.2	0.1	8.7	1.2	-1.0	6.2	0.1	7.5	0.0	-1.4	-0.5
	(20 t.p.	165.4	236.1	16.6	377.8	13.4	-8.5	236.1	16.6	324.7	0.0	-40.4	-64.1
Tariff	(1 t.p.	5.0	6.2	0.1	8.7	1.2	-1.0	6.2	0.1	-30.0	25.0	6.1	-0.5
	(20 t.p.	165.4	236.1	16.6	377.8	13.4	-8.5	236.1	16.6	176.6	25.0	-34.5	-40.5
Con- trol	(1 t.p.	5.0	7.5	1.6	8.7	1.2	-1.0	7.2	1.4	0.0	0.0	0.1	-1.2
	(20 t.p.	165.4	283.9	26.1	377.8	13.4	-8.5	274.4	24.3	3.9	0.0	0.0	-69.1

CASE 16.

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-0.5	-0.5	-0.5	-0.5	-0.5

% Change in:		Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free Trade	(1 t.p.	5.0	6.8	1.2	3.3	2.3	-1.6	6.8	1.2	7.5	0.0	-1.3	-0.6
	(20t.p.	165.4	278.0	24.9	90.6	58.8	-31.2	278.0	24.9	324.7	0.0	-63.1	-50.0
Tariff	(1 t.p.	5.0	6.8	1.2	3.3	2.3	-1.6	6.8	1.2	-5.0	25.0	1.1	-0.6
	(20t.p.	165.4	278.0	24.9	90.6	58.8	-31.2	278.0	24.9	275.4	25.0	-53.2	-50.0
Con- trol	(1t.p.	5.0	8.7	2.4	3.3	2.3	-1.6	8.4	2.2	0.0	0.0	0.1	- 1.7
	(20t.p.	165.4	356.4	38.5	90.6	58.8	-31.2	340.8	35.9	9.4	0.0	0.0	-97.1

CASE 17.

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	0.5	1.5	-1.5	-1.5	-1.5	-1.5	-1.5

% Change in:	Tot. Cap.	$D_i=I$	P_i	D_{xh}	D_{xf}	P_x	$D_n=N$	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	6.2	0.8	4.6	2.1	-1.4	6.2	0.8	6.5	0.0	-1.3	-0.2
Trade (20 t.p.	165.4	236.1	16.6	141.9	49.1	-26.9	236.1	16.6	324.7	0.0	-63.1	-24.0
Tariff(1 t.p.	5.0	6.2	0.8	4.6	2.1	-1.4	6.2	0.8	-30.0	25.0	6.1	-0.2
(20 t.p.	165.4	236.1	16.6	141.9	49.1	-26.9	236.1	16.6	176.6	25.0	-33.5	-24.0
Con- (1 t.p.	5.0	7.5	1.6	4.6	2.1	-1.4	7.2	1.4	0.0	0.0	0.1	-1.0
Trol (20 t.p.	165.4	284.9	26.2	141.9	49.1	-26.9	275.2	24.4	8.8	0.0	0.2	-53.2

CASE 18.

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	1.0	1.0	1.0	0.5	0.5	0.5	1.5	1.5	0.5	1.5	-0.5	-0.5	-0.5	-1.5	-0.5

% Change in:	Tot. Cap.	$D_i=I$	P_i	D_{xh}	D_{xf}	P_x	$D_n=N$	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	6.2	2.5	3.7	3.7	-2.5	6.2	2.5	7.5	0.0	-1.2	-0.5
Trade (20 t.p.	165.4	236.1	50.0	108.8	108.8	-50.0	236.1	50.0	324.7	0.0	-64.1	-32.6
Tariff(1.t.p.	5.0	6.2	2.5	3.7	3.7	-2.5	6.2	2.5	-5.0	25.0	1.2	-0.5
(20 t.p.	165.4	236.1	50.0	108.8	108.8	-50.0	236.1	50.0	275.4	25.0	-54.2	-32.6
Con- (1 t.p.	5.0	7.5	4.9	3.7	3.7	-2.5	7.2	4.4	0.0	0.0	0.2	-1.2
trol (20 t.p.	165.4	285.5	79.2	108.8	108.8	-50.0	275.6	73.6	5.7	0.0	-0.2	-62.2

CASE 19

	η_{iy}	η_{ny}	η_{xy}	η_{i}	η_{n}	η_{x}	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_{i}	E_{n}	E_{xh}	E_{xf}	E_{m}
Elasticities	1.0	1.0	1.0	0.5	0.5	0.5	1.5	1.5	0.5	1.5	-1.5	-1.5	-1.5	-1.5	-1.5

% Change in:	Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	5.6	1.2	5.6	3.1	-2.1	5.6	1.2	7.5	0.0	-1.3	-0.1
Trade (20 t.p.	165.4	198.7	24.9	193.2	81.5	-40.4	198.7	24.9	324.7	0.0	-63.3	-9.4
Tariff (1 t.p.	5.0	5.6	1.2	5.6	3.1	-2.1	5.6	1.2	-30.0	25.0	6.2	-0.1
(20 t.p.	165.4	198.7	24.9	193.2	81.5	-40.4	198.7	24.9	176.6	25.0	-33.6	-9.4
Con- (1 t.p.	5.0	6.2	2.4	5.6	3.1	-2.1	6.1	2.2	0.0	0.0	-0.2	-0.5
trol (20 t.p.	165.4	221.8	40.7	193.2	81.5	-40.4	217.2	37.6	8.6	0.0	-0.1	-23.3

CASE 20

	η_{iy}	η_{ny}	η_{xy}	η_{i}	η_{n}	η_{x}	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_{i}	E_{n}	E_{xh}	E_{xf}	E_{m}
Elasticities	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	0.5	1.5	-0.5	-0.5	-0.5	-1.5	-0.5

% Change in:	Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free (1 t.p.	5.0	6.6	1.6	3.4	2.9	-2.0	6.6	1.6	7.5	0.0	-1.3	-0.5
Trade (20 t.p.	165.4	263.5	33.3	97.4	76.4	-38.4	263.5	33.3	324.7	0.0	-63.2	-44.2
Tariff (1 t.p.	5.0	6.6	1.6	3.4	2.9	-2.0	6.6	1.6	-5.0	25.0	1.2	-0.5
(20 t.p.	165.4	263.5	33.3	97.4	76.4	-38.4	263.5	33.3	275.4	25.0	-53.3	-44.2
Con- (1 t.p.	5.0	8.3	3.3	3.4	2.9	-2.0	7.9	2.9	0.0	0.0	0.2	-1.6
trol (20 t.p.	165.4	332.1	51.8	97.4	76.4	-38.4	318.4	48.3	8.9	0.0	0.0	-85.3

CASE 21

	η_{iy}	η_{ny}	η_{xy}	η_i	η_n	η_x	E_{iy}	E_{ny}	E_{xy}	E_{my}	E_i	E_n	E_{xh}	E_{xf}	E_m
Elasticities	0.5	0.5	1.0	1.0	1.0	1.0	1.5	1.5	0.5	1.5	-1.0	-1.0	-1.0	-1.5	-1.0

% Change in:		Tot. Cap.	D_i=I	P_i	D_{xh}	D_{xf}	P_x	D_n=N	P_n	D_m	P_m	Ext. Bal.	Int. Bal.
Free Trade	(1 t.p.	5.0	5.0	2.5	4.3	2.7	-1.8	5.0	2.5	7.5	0.0	-1.3	0.5
	(20 t.p.	165.4	165.4	50.0	130.4	68.5	-35.3	165.4	50.0	324.8	0.0	-61.9	22.8
Tariff	(1 t.p.	5.0	5.0	2.5	4.3	2.7	-1.8	5.0	2.5	-17.5	25.0	3.7	0.5
	(20 t.p.	165.4	165.4	50.0	130.4	68.5	-35.3	165.4	50.0	226.0	25.0	-43.4	22.8
Con- trol	(1 t.p.	5.0	6.2	3.7	4.3	2.7	-1.8	6.0	3.4	0.0	0.0	0.2	-0.2
	(20 t.p.	165.4	208.3	65.8	130.4	68.5	-35.3	199.7	62.8	9.2	0.0	0.0	-2.9

Chapter 6.

Analysis of Chapter 5 Results.

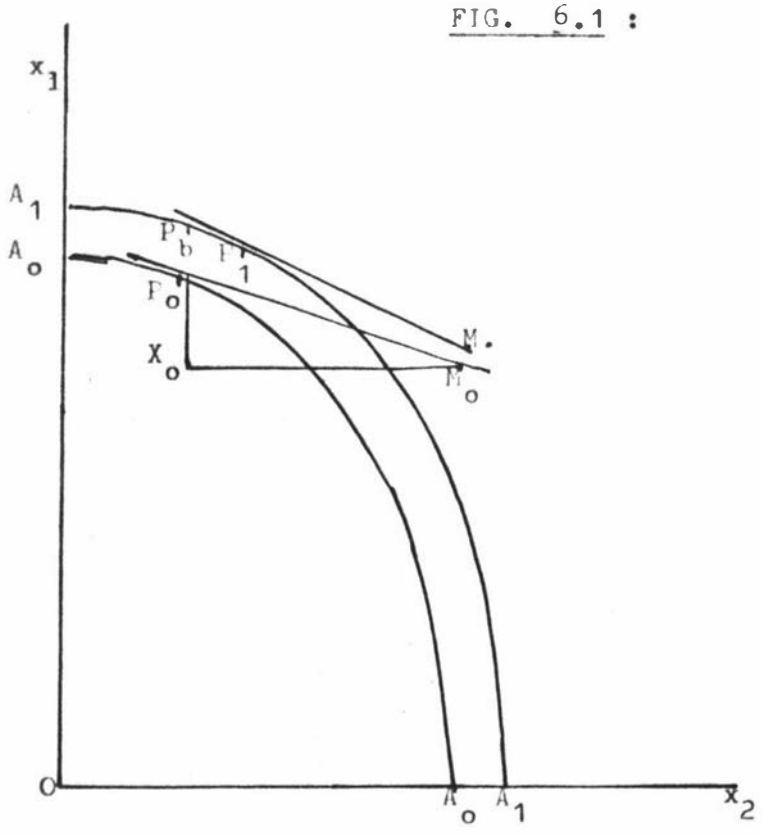
Free Trade: The attainment of external balance, with fixed exchange rates, is almost entirely dependent on conditions abroad. The effect of growth, in the absence of compensating growth overseas, is to bring about a deterioration in the terms of trade and a transfer of some part of increased welfare from the growing country to the foreigner. Unless there is an increase in demand for exports, continuous deficit is inevitable.

The result can be demonstrated diagrammatically and mathematically. The visual exposition (Figure 6.1.) is adapted from J. Bhagwati: "Growth, Terms of Trade and Comparative Advantage", and shows how balance can only be achieved by increasing dependence on trade.

Initial equilibrium is on Transformation Curve $A_o A_o$, with production at P_o and consumption at M_o, exporting $P_o X_o$ of commodity x_1 in exchange for $X_o M_o$ of commodity x_2 - at terms of trade $\frac{Px_2}{Px_1}$ shown by the tangent at P_o. The law of comparative advantage operates and welfare at M_o is greater than in a state of self-sufficiency.

The curve $A_1 A_1$ represents 'steady state' growth, when all factors of production receive relatively equal increments. If foreign (+ home) demand elasticities for x_1, the exportables, are lower than home elasticities for x_2, the importables, terms of trade will move unfavourably and growth will be biased away from the 'balanced'

FIG. 6.1 :



$A_o A_o$ - Initial transformation curve

P_o - production point

$P_o X_o$ - exports of x_1

$X_o M_o$ - imports of X_2

$A_1 A_1$ - transformation curve after growth

P_1 - production point

M_1 - consumption point after trade.

$P_o\ P_1'$ expansion line which is drawn through those points on the Transformation curves where the slopes would be equal (i.e. where $\left(\frac{Px_2}{Px_1}\right)_o$ would equal $\left(\frac{Px_2}{Px_1}\right)_1$).

Equilibrium will be at some point like P_1, where $\left(\frac{Px_2}{Px_1}\right)_1 > \left(\frac{Px_2}{Px_1}\right)_0$.

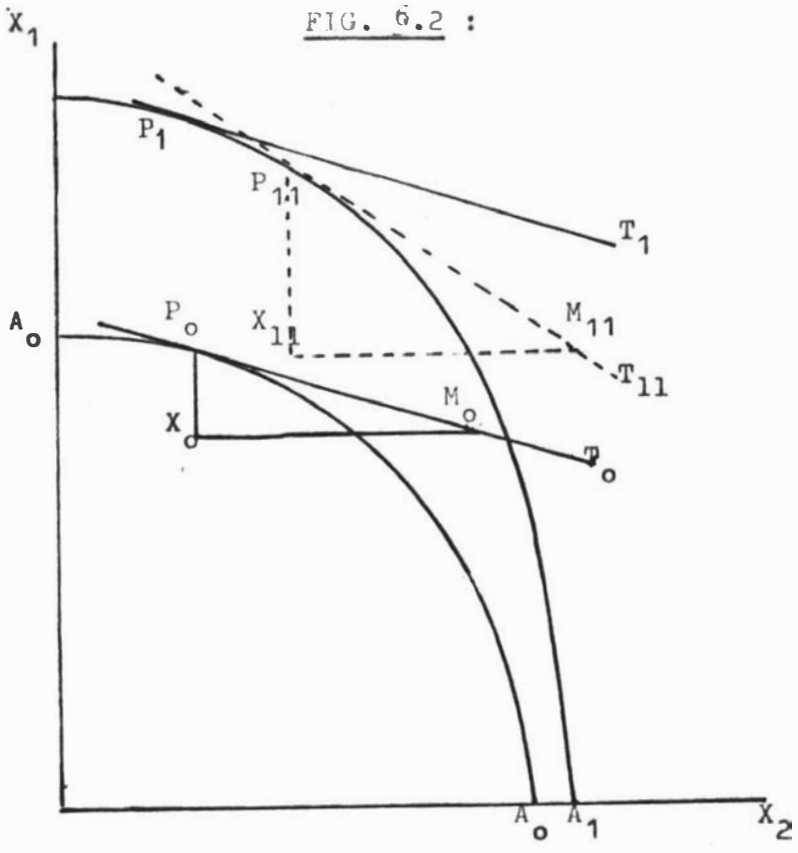
Two results are evident :

1. Growth is anti- trade biased, growth being diverted away from exportables towards importables.
2. Some of the benefits of growth are lost; the growth in welfare, as measured by the move from M_o to M_1.is less than that from P_o to P_1.

The situation is more serious if 'natural' growth is biased towards exportables, i.e. if accretion to factor endowment is greatest to those factors which are intensively used in the production of exportables. This is a major problem of developing nations where growth in population forces expansion into labour intensive production of primary products whose terms of trade move unfavourably. Fig. 6.2. illustrates this problem.

On initial Transformation Curve A_oA_o production is at P_o with quantity P_oX_o of commodity $x_1$being exported for $X_o\ M_o$ of $x_2$at terms of trade T_o. The growth represented by the new Transformation curve $A_1\ A_1$ is heavily biased towards increased specialisation on commodity X_1. If terms of trade remain unchanged (slope of $T_1$is the same as that of T_o), production will move to P_1 increasing

FIG. 6.2 :



$A_o\ A_o$ - initial transformation curve

T_o - terms of trade

P_o - production point

$P_o\ X_o$ - exports of x.

$X_o\ M_o$ - imports of x_2.

$A_1\ A_1$ - transformation curve after growth

$T_1 = T_o$ - unchanged terms of trade

P_1 - production with terms of trade $T_1 = T_o$

T_{11} - new terms of trade

P_{11} - new production point

$P_{11}\ T_{11}$ - export of x_1

$X_{11}\ M_{11} = X_o\ M_o$ - imports of x_2

dependence in the staple commodity. An unfavourable movement in terms of trade, shown by tangent T_{11} has both beneficial and disadvantageous results. The resulting product mix, shown at P_{11} is less biased towards the 'undesirable' x_1 commodity. Unfavourable terms of trade have thus forced a desirable adjustment of production. However, growth is still pro-trade biased. In order to obtain the same quantity of imports ($X_{11} M_{11} = X_o M_o$) a much larger volume of exports is required ($P_{11} X_{11} > P_o X_o$). As a result some of the benefits of growth are transferred to the foreigner.

This is the dilemma with which the growing nation is so often faced. Attempts to maintain favourable terms of trade by international commodity price agreements, overvalued exchange rates etc., directs expansion into increasing dependence on trade in commodities which may not be desirable in the long run. Allowing terms of trade to turn unfavourably may lose to the nation some of the welfare gains of growth, without reducing dependence on trade. The use of trade controls - tariff and quota - is an attempt to get the best of both worlds. As far as possible, external prices are kept constant by maintaining exchange rates, controlled marketing, international price agreements etc. Tariff or quota (carrying implicit tariff) make internal price less favourable for imports. In terms of Fig. 6.2., a line drawn through P_{11} parallel to T_1 would give external price ratio of the two commodities . The line T_{11} would show the internal price ratio, encour=

aging production shift towards commodity X_2.

This concept is more rigo rously defined by I.F. Pearce (page 276, 'International Trade'), who attempts to measure the change in welfare (dw) arising from growth (dY), His conclusion, adapted to the notation of our model is

$$dw = \left(1 + \frac{dM}{E_m + E_{xf} + 1}\right) P.dY$$

where P is the (unchanged) price of the numeraire commodity and dM is marginal propensity to import. The value of $\frac{dM}{E_m + E_{xf} + 1}$ is normally negative and less than one. Normally, then, increase in welfare will tend to be less than increase in output - some of the benefit of growth is lost. If elasticities are high dw will approach the value of P dY and little will be lost. If elasticities are low, then much welfare will accrue to foreigners; in fact, in an extreme case of very low elacticities, (e.g. $E_m + E_{xf} = -1.1$ and $dM = 0.2$), the expression in brackets could be negative, giving absolute loss in welfare.

Pearce himself expresses a very strong warning over this conclusion. Growth elasticity is ignored and only two commodities are used in the model. However, the conclusion that some of the benefits of growth move overseas is still a valid one.

Returning to the results on pages 96-106 only in two cases -- Case 5 and Case 1, is internal balance reasonably maintained. In case 5, unit growth elasticity of supply and demand, coupled with high price elasticities

on the demand side and low price elasticities on the supply side, result in moderate price changes - no price adjustment internally and falling export prices. There is a low level of unempolyment, all in the export sector as a result of foreign demand not matching growth in capacity. Case 19 has similar elasticities, except that growth elasticities of demand are greater than unity with the result that excess capacity in the export sector is counter-balanced by higher demand pressures in the internal sectors. Assuming factor mobility, the overall balance shows moderate negative internal balance, resulting from excessive demand. This is reflected in moderate rises in internal prices (1.2% per year) and substantial export price fall (2.1% per year). In all other cases internal imbalance occurs in varying degrees. Positive (excess capacity) imbalance occurs when low growth and price demand elasticities are combined with high supply price elasticities, the extreme example being Case 12, where the 20th time period witnesses an excess capacity level of 91.4 (34.4% of total capacity), accompanied by a fall in internal prices of 25.0%. Negative imbalance (excess demand) occurs when high growth demand elasticities combine with low price elasticities; the extreme example of this type is Case 13, which shows excess demand of 65.6 (24.7% beyond capacity) with internal prices rising by 24.9%.

External balance is non-attainable unless there are compensatory forces acting abroad. In every case, the effect of growth, by itself, is to cause a fall in the

price of exports, together with an increase in demand for imports. Depending on foreign demand elasticity, the increase in quantity of exports only partly compensates for the increased level of imports. Unless there is an autonomous growth in demand for exports, a deficit is inevitable. The smallest deficit is Case 14 when growth elasticities of demand for imports and exportables are high. In spite of a sizeable (26.9%) fall in export prices, deficit is only -10.9 in the twentieth time period. It could be reasonably expected that concurrent growth abroad would turn such a figure into a substantial surplus. In a number of other cases - notably cases 1.2.5.6.and 7, the conditions are such that, assuming foreign growth, the deficit would, in fact, probably not eventuate. The extreme case is Case 9; a high growth elasticity of demand for imports coupled with a low foreign price elasticity of demand for exports, results in a twentieth time-period deficit of 68.0.

The results give a clear indication that a decision to permit the Free Trade mechanism to operate is not a decision to follow negative policies. It is rather a decision that policies shall be directed at adjusting the internal economy to balance it with the external position. Clearly, the severity of policy interference would largely depend on the change in external demand. Actual policies would depend on elasticities. Where price elasticity of demand is high, indirect taxation would clearly correct inflationary pressures while reduction of indirect tax

would stimulate demand. If growth elasticities of demand are high, direct taxation would be more effective. Similarly, production growth can be discouraged by profit tax on sectors whose price elasticities of supply are low, encouraged by tax concessions, investment allowances etc. for sectors where elasticities are high -i.e. where growth is most desirably directed.

Tariff : The model reflects the main weakness of tariff policy, which is that it is impossible in advance to assess what are the likely effects of tariff on the internal sector. To the extent that tariff increases import prices and acts as a tax absorbing spending power, it does not permit the transfer of demand to the internal sector, and the model assumes that the internal supply/demand pattern is no different with tariff than with free trade. This assumption is somewhat unrealistic because it is likely that the imposition of tariff will induce some change in the elasticities. In particular, growth elasticities of supply are likely to increase for importables and, to a lesser degree, for non-traded goods and to decline for exportables if expectations are that tariff is likely to provide long term benefits for producers in protected sectors. It is impossible to judge the magnitude of such change for a number of reasons; it will depend on:

1. The degree to which importables are substitutes for imports

2. The relative technological requirements of exports, importables and non-traded goods, determining the mobiltiy

of factors between sectors.

Both these causes would tend to increase elasticities over time :- i.e. short run elasticity would tend to be low, long run elasticity high.

3. If tariff revenue is withheld, internal demand will be little affected; if it is re-injected into the economy, it will increase demand.

4. Foreign reaction is not predictable. To the degree that exports are reduced by counter-tariff, internal incomes and supply patterns are affected. Broadly, however, it is reasonable to conclude that the internal problems are unlikely to be substantially different with tariff than with free trade. The same spending power will be available to satisfy similar demand patterns. Tariff works through the price mechanism and it is only the effects of price elasticities which are of importance.

The results of tariff from the model are what one would expect. In every case, the initial impact of a large tariff turns the deficit into a surplus. Over time the effect if increasing growth demand erodes the benefit of tariff and, in most cases, a deficit reappears. In only two cases, 10 and 14, where price elasticity of demand is high and growth elasticity low, does surplus endure for the full twenty time periods. However, in all cases, deficit is markedly less than with free trade.

Three important factors must be borne in mind when assessing probable results of tariff.

1. To the extent that foreign growth rates are likely to lead to increased export demand, the tariff will act as a permanent corrector of external deficit.

2. If retaliation occurs, the effects of tariff are cancelled by a comparable reduction in exports. The retaliation effect can be immediate if counter tariff is a direct imposition or delayed if retaliation is indirect - the final impact coming as a result of the circular flow of tariff reduction in a multilateral trading system. In the event of retaliation being of the delayed kind, some benefit, of a temporary nature, still accrues from the imposition of tariff.

3. If foreign supply has a price elasticity of less than infinity, some part of the tariff will be absorbed by the foreign producer and the effect of the tariff will be reduced.

4. If result 1. does not come about, then in order to maintain external balance, an increasing tariff may be required. The model does not lend itself easily to this assessment, because as tariff increases and we move further back along the foreign "offer curve", price elasticities tend to get lower, making each successive tariff increase less effective than the last, i.e. only the effects of marginal tariff adjustments can be estimated with given elasticities.

The 25% tariff used in the model was in every

case excessive. An alternative method would have been to assess the tariff requirement to maintain zero external balance; i.e. given the requirement

$$D_m \cdot E_m \cdot \frac{dP_m}{P_m} + D_m \cdot E_{my} \cdot \bar{Y} = (D_{xf} + dD_{xf})(P_x + dP_x)$$

simplifying and isolating for tariff requirement

$$\frac{dP_m}{P_m} = \frac{D_{xf} \cdot dP_x + dD_{xf} P_x + dD_{xf} \cdot dP_x - D_m \cdot E_{my} \cdot \bar{Y}}{D_m \cdot E_m}$$

Thus, in Case 1, a 5% tafiff would have been sufficient. The highest required tariff is in Case 9, where 17.6% is needed. However, an annual revision of tariff would then be required as increasing growth brought increasing deficit. Using a 25% tariff allows us to see how long the benefit of tariff will last, given different elasticity conditions.

The major disadvantage of tariff appears from the results. It is not an external policy which can be used as a substitute for internal policies. The internal problems which face a country as a result of growth in a free trade situation are still there after tariff, and it is still necessary to adopt a system of corrective measures to adjust the internal sectors. It is primarily for this reason; that, from political motives, tariffs are often less preferred than direct controls. The necesaary monetary and fiscal policies required internally are not politically popular and, especially when government is unstable, are avoided as far as posible.

The great advantage of tariff is also apparent. It grants the home country a breathing space during which internal balance policy can be implemented without undue concern about the maintenance of trading balance. This is particularly evident when internal balance is positive and the required policies are of a kind aimed at stimulating demand to increase the level of employment. In a free trade situation, such policies would lead to increased deficit; tariff gives a period of time during which such policies can be followed without consequent pressure on the balance of payments. The time period varies according to elasticities. As already mentioned, Cases 10 and 14, surplus is maintained for twenty time periods; other cases in which expansionary internal policies may be pursued, while tariff compensates for any effects on the external sector, are:-

Case	5	surplus	is	maintained	until	the 11th period.
"	6	"	"	"	"	10th "
Cases	1, 3	"	"	"	"	6th "
"	2, 12	"	"	"	"	4th "
"	7, 8	"	"	"	"	3rd "
Case	9	"	"	"	"	2nd "

In the first two of these cases (5 and 6) price elasticities of demand are greater than demand growth elasticities; as might be expected, tariff, working through the price mechanism, has its strongest effect. In cases 1, 3, 2, 12, and 8 demand price elasticities

are numerically equal to demand growth elasticities. Cases 7 and 4 are two marginal cases where demand growth elasticities numerically exceed demand price elasticities by 0.5; benefits of tariff become very temporary.

In all other cases where the internal problem is one of excess demand, the value of tariff as a policy weapon is questionable. The deflationary policies required to reduce general demand is certain to have the same effect (assuming similar growth elasticities) on import demand as on demand for internal goods. Deflationary policies are thus equally balancing for external and internal sectors.

In comparing the choice between Free Trade and Tariff as policies when growth incurs deficit, the following broad conclusions can be drawn.

1. When growth is likely to result in excessive demand - i.e. when growth elasticities of demand for internal goods is high, the policy requirements are to correct internal imbalance. Imposition of tariff may help external balance but will not cure the real trouble. If correct internal policies are followed, then the external deficit will be reduced or eliminated as a secondary result of such policies. Tariff would then be unnecessary. Indeed, the tariff might well be quite wrong in that an imbalance in the form of a trading surplus might cause further distortion.

2. When growth is likely to result in excessive supply - i.e. when growth elasticities of demand are low, the major policy requirements are still to correct internal distortion. However, on this situation, a tariff policy may have considerable value in that external balance can be maintained while internal adjustment is made.

3. Neither policy is sufficient by itself, except in the unlikely event of foreign changes in demand and supply and home changes in demand and supply combining to maintain overall balance.

Control : There are two essential differences between tariff and control

1. Control is determinate. External balance is maintained by the expedient of not permitting the entry of goods of value in excess of export receipts. Thus, in every case external balance is maintained.

2. Unless the community is prepared to save the money which it cannot spend on imported goods, the result of control is to effect a transfer of growth demand from external to internal sources. In this respect controls act as an internal as well as an external policy measure.

When growth is likely to lead to unemployment the advantages are obvious. Unemployed internal factors are brought into use and the level of unemployment is markedly reduced. Comparing results in the 20th time period, the notable cases are :

Table 6.1 :

Case	Free Trade : Excess Capacity % of Total :	Free Trade : Int. Price % Change	Control : Excess Capacity % of Total	Control : Int. Price % Change
1	5.9	0.0	0.9	10.1
4	7.0	0.0	1.8	17.5
5	3.7	0.0	0.5	11.0
6	7.0	0.0	0.6	7.0
7	9.9	0.0	1.3	9.4

In each of these cases the substantial levels of unemployment are removed; this achievement is at the expense of a rising internal price level but presumably this would be acceptable to most communities.

With threatened unemployment, therefore, the choice appears to be between the policies of tariff and control. If control of trade is used, other internal policies become unnecessary, but internal distortions of the kind discussed in the next chapter may develop; if control by tariff is employed, the policy makers are still faced with the problems of unpopular fiscal and monetary adjustment measures in the internal sector.

In the event of growth leading to excessive demand, the use of quantitative control of trade, while curing the external deficit, increases the internal problem. In all cases excess demand becomes greater

and prices rise higher. Comparing the 20th time period results, outstanding cases are :

Table 6.5.

	Free Trade		Control	
Case	Excess Demand % of Total Capacity.	Price % Change	Excess Demand % of Total Capacity	Price % Change
13	24.7	24.9	41.1	37.5
16	13.8	24.9	36.5	38.5
17.	9.0	16.6	20.0	26.6
18	12.2	50.0	23.6	79.2
20	16.6	33.3	32.1	51.8

Clearly, the imposition of Import Controls in a period of overfull employment can lead to excessive inflationary pressures requiring much more severe internal measures than would be necessary under free trade or tariff policy.

Chapter 7.

Alternative Policies :

The preceding analysis has assumed a basic policy of steady growth in all sectors, permitting a natural or imposed price adjustment to force adjustment to demand patterns. In fact, government may be concerned to achieve some other major goal.

Assume, for example, that the major constraint is that inflation shall be avoided. A price increase of, say, 3% per annum is the highest acceptable level of inflation. What kind of restraint does this place on the rate of internal expansion and what problems are met with in the external sector? the model of Chapter 4 can be re-expressed.

Importables:

$$\bar{Y}_i = \frac{(D_i \cdot E_i - I \cdot \eta_i)\,\bar{P}}{I \cdot \eta_{iy} - D_i E_{iy}} \qquad (I)$$

Where $\bar{Y}$ = required growth rate in importable sector

$\bar{P}$ = maximum permitted price increase (0.03)

Exportables:

$$\bar{Y}_x = \frac{(D_{xh} \cdot E_{xh} + D_{xf} - X_x)\,\bar{P}}{X \cdot \eta_{xy} - D_{xh} \cdot E_{xy}} \qquad (X)$$

Where $\bar{Y}_x$ = required growth rate in exportables.

Non-Traded:

$$\bar{Y}_n = \frac{(D_n E_n - N\eta_n)\,\bar{P}}{(N \cdot \eta_{ny} - D_n E_{ny})} \qquad (N)$$

Total Growth:

$$\bar{Y} = Y_i \cdot I + \bar{Y}_x \cdot X + \bar{Y}_n \cdot N$$

Imports:

$$dD_m = D_m \cdot E_{my} \cdot \bar{Y}$$

assuming no change in free-trade import prices.

Internal Balance: There is a physical limitation on the capacity of an economy to expand. Let it be assumed that the physical constraint (Y^*) is the 5% expansion rate of Chapter 5. It should also be assumed that factors of production are sufficiently mobile for any excessive ($>5\%$) growth which may be required in one sector to be achieved by transfer of resources from any sector where growth requirement is less than maximum possible ($<5\%$).

If total growth ($\bar{Y}$) is greater than Y^* the economy will suffer from expansionary pressures, and the policy price increase goal becomes unattainable unless demand can be restrained. If total growth rate is less than Y^*, then some stimulation of demand may be desirable. The sectoral balance of growth can be judged by comparing the required expansion of each of the three sector.

$$Y_b = \bar{Y} - Y^*$$

where Y_b = overall internal balance.

If Y_b is positive, requirements are over-expansionary, and there are inflationary pressures. If Y_b is negative, there is some excess capacity with deflationary tendencies.

External Balance :

$$dB = (D_{xf} + d\,D_{xf}) \cdot (1+\bar{P}) - (D_m + d\,D_m)$$

Where dB = change in trade balance

$$dD_{xf} = D_{xf} \cdot E_{xf} \cdot \bar{P}$$

$$dD_m = D_m \cdot E_{my} \cdot \bar{Y}$$

There are a number of key values in the model.

The relative sizes of supply and demand growth elasticities in each sector, forming the denominator of the R.H.S. of the (N) and (I) equations are the major determinants of the sectoral balance. If growth elasticity of supply is greater than demand elasticity, the denominator has a positive value. The numerator is a simplification of a commonly held concept that prices are managed and prices are primarily cost-determined. It is thus assumed that an expansionary internal monetary policy is followed, permitting a rate of 3% inflation (vis-a-vis the rest of the world) which is reflected throughout the economy in increased costs which are passed on in prices.

The problem is now the very familiar case, especially in a country like New Zealand, of internal cost pressures exerting upward pressures on prices which may not be recoverable on external markets. The results of some of the computations are shown in Table 7.1. and the computer prgramme in Appendix B. All values are shown as the first time period percentage change in each sector

$I = D_i$ - % change required to balance supply/demand in the Importables sector

$N = D_n$ - change required in the non-traded sector

$X = D_{xh} + D_{xf}$ - change required in the exportables sector

D_m - % increase (+) or decrease (-) in import demand

D_{xf} - % change in exports

Ext. Bal - % shrplus (+) or deficit (-) on external trade

$\bar{Y}_m$ - % increase (+) or decrease(-) in money te terms of total output.

$\bar{Y}_r$ - % change in real terms of total output

$\bar{T}_b$ - % tariff required to bring about balance of external payments.

in :	$I = \eta_i$:	$N = \eta_n$:	$X = \eta_{xh} + \eta_{xt}$:	D_m :	D_{xt} :	Ext. Bal :	$\bar{Y}_m$:	$\bar{Y}_r$:	Tb
Free Trade	8.0*	8.0*	-0.6	3.5	0.0	-3.5	+3.8	+0.8	
Tariff	8.0*	8.0*	-0.6	0.5	0.0	-0.5	+3.8	+0.8	5.C
Control	12.5	9.0	-0.6	0.0	0.0	0.0	+5.1	+2.1	
Free Trade	- 6.5	- 6.5	-2.6	-3.0	+1.0	+4.0	-5.2	-8.2	
Tariff	- 6.5	- 6.5	-2.6	-4.5	+1.0	+5.5	-5.2	-8.2	-
Control	- 6.5	- 6.5	-2.6	-3.0	+1.0	+4.0*	-5.2	-8.2	
Free Trade	18.0	18.0	-12.6	13.5	-2.0	-15.0	+9.1	+6.1	
Tariff	18.0	18.0	-12.6	9.0	-2.0	-10.5	+9.1	+6.1	10.(
Control	30.5	20.8	-12.6	-2.0	-2.0	0.0	+12.8	+9.8	
Free Trade	8.0*	8.0*	- 1.6	5.0	1.0	-3.5	+ 5.2	+2.2	
Tariff	8.0*	8.0*	- 1.6	3.5	1.0	-2.0	+ 5.2	+2.2	8.(
Control	12.5	9.0	- 1.6	1.0	1.0	0.0	+ 6.5	+3.5	
Free Trade	8.0*	8.0*	- 6.3	3.5	-2.0	-5.0	+ 3.8	+0.8	
Tariff	8.0*	8.0*	- 6.3	-1.0	-2.0	-1.0	+ 3.8	+0.8	5.(
Control	13.5	9.2	- 6.3	-2.0	-2.0	0.0	+ 5.4	+2.4	

% change in :		I = η_i :	N : η_n :	X = η_{xh} + η_{xb} :	D_m :	D_{xb} :	Ext. Bal :	$\bar{Y}_m$:	$\bar{Y}_p$:	Tb
Case 6	Free Trade	8.0*	8.0*	-11.0	2.0	-2.0	-4.0	+2.4	-0.6	
	Tariff	8.0*	8.0*	-11.0	-2.0	-2.0	0.0	+2.4	-0.6	3.0
	Control	11.5	9.0	-11.0	-2.0	-2.0	0.0	+3.8	+0.8	
Case 7	Free Trade	8.0*	8.0*	- 6.3	3.5	1.0	-2.5	+3.8	+0.8	
	Tariff	8.0*	8.0*	- 6.3	2.0	1.0	-1.0	+3.8	+0.8	5.0
	Control	11.5	9.0	- 6.3	1.0	1.0	0.0	+4.8	+1.8	
Case 8	Free Trade	-3.5	-3.5	- 1.0	-1.5	1.0	2.5	-2.5	-5.5	
	Tariff	-3.5	-3.5	- 1.0	-3.0	1.0	4.0	-2.5	-5.5	-
	Control	-3.5	-3.5	- 1.0	-1.5	1.0	2.5	-2.5	-5.5	
Case 9	Free Trade	9.0	9.0	- 3.3	8.0	1.0	-7.0	+5.4	+2.4	
	Tariff	9.0	9.0	- 3.3	6.5	1.0	-4.5	+5.4	+2.4	15.0
	Control	15.5	10.4	- 3.3	1.0	1.0	0.0	+7.4	+4.4	
Case 10	Free Trade	- 9.5	- 9.5	- 4.6	-4.0	-2.0	+2.0	-7.9	-10.9	
	Tariff	- 9.5	- 9.5	- 4.6	-8.5	-2.0	+6.5	-7.9	-10.9	
	Control	9.5	- 9.5	-4.6	-4.0	-2.0	+2.0	-7.9	-10.9	

% change in :		$I = \eta_i$:	$N = \eta_n$:	$X = \eta_{xh} + \eta_{xt}$:	Dm :	Dxt :	Ext. Bal :	$\bar{Y}_m$:	$\bar{Y}_r$:	Tb :
Case 11	Free Trade	15.0	15.0	- 9.7	11.5	- 2.0	- 13.5	+ 7.9	+ 4.9	
	Tariff	15.0	15.0	- 9.7	7.0	- 2.0	- 9.0	+ 7.9	+ 4.9	9.0
	Control	26.0	17.4	- 9.7	- 2.0	- 2.0	0.0	+11.2	+ 8.2	
Case 12	Free Trade	- 9.5	- 9.5	- 4.7	- 4.0	+ 1.0	+ 5.0	- 7.9	-10.9	
	Tariff	- 9.5	- 9.5	- 4.7	- 5.5	- 1.0	+ 6.5	- 7.9	-10.9	
	Control	- 9.5	- 9.5	- 4.7	- 4.0	+ 1.0	+ 5.0	- 7.9	-10.9	
Case 13	Free Trade	15.0	15.0	- 9.7	11.5	1.0	- 10.5	7.9	4.9	
	Tariff	15.0	15.0	- 9.7	10.0	1.0	- 9.0	7.9	4.9	21.0
	Control	24.0	17.0	- 9.7	1.0	1.0	0.0	10.6	7.6	
Case 14	Free Trade	-16.0	-16.0	- 8.3	- 7.0	+ 2.0	- 5.0	-13.4	-16.4	
	Tariff	-16.0	-16.0	- 8.3	-11.5	- 2.0	+ 9.5	-13.4	-16.4	
	Control	-16.0	-16.0	- 8.3	- 7.0	- 2.0	+ 5.0	-13.4	-16.4	
Case 15	Free Trade	21.5	21.5	-15.6	15.5	- 2.0	- 17.0	+10.4	+ 7.4	
	Tariff	21.5	21.5	-15.6	11.0	- 2.0	- 13.0	+10.4	+ 7.4	13.0
	Control	34.5	24.0	-15.6	- 2.0	- 2.0	0.0	+14.4	+11.4	

	$I = \eta_i$:	$N = \eta_{xh}$:	$X = \eta_{xh} + \eta_{xt}$:	D_m :	D_{xt} :	Ext. Bal :	Y_m :	Y_r :	Tb :
ree Trade	15.0	15.0	- 7.0	13.0	- 2.0	-15.0	+ 8.6	+ 5.6	
ariff	15.0	15.0	- 7.0	11.5	- 2.0	-13.5	+ 8.6	+ 5.6	29.0
ontrol	26.5	17.6	- 7.0	- 2.0	- 2.0	0.0	+12.1	+ 9.1	
ree Trade	21.5	21.5	- 8.3	18.5	- 2.0	-20.5	+12.6	+ 9.6	
ariff	21.5	21.5	- 8.3	14.0	- 2.0	-16.0	+12.6	+ 9.6	13.0
ontrol	37.0	24.6	- 8.3	- 2.0	- 2.0	0.0	+17.3	+14.3	
ree Trade	9.0	9.0	- 3.3	8.0	- 2.0	- 9.5	+ 5.4	+ 2.4	
ariff	9.0	9.0	- 3.3	6.5	- 2.0	- 8.0	+ 5.4	+ 2.4	21.0
ontrol	17.5	10.8	- 3.3	- 2.0	- 2.0	0.0	+ 8.0	+ 5.0	
ree Trade	15.0	15.0	- 4.6	14.0	- 2.0	-16.0	+ 9.4	+ 6.4	
ariff	15.0	15.0	- 4.6	9.0	- 2.0	-11.0	+ 9.4	+ 6.4	11.0
ontrol	27.5	17.8	- 4.6	- 2.0	- 2.0	0.0	+13.1	+10.1	
ree Trade	12.0	12.0	- 5.3	10.5	- 2.0	-12.5	+ 7.0	+ 4.0	
ariff	12.0	12.0	- 5.3	9.0	- 2.0	-11.0	+ 7.0	+ 4.0	25.0
ontrol	22.0	14.2	- 5.3	- 2.0	- 2.0	0.0	+10.1	+ 7.1	

% change in :		$I = \eta_i$:	$N = \eta_{xh}$:	$X = \eta_{xh} + \eta_{xt}$:	D_m :	D_{xt} :	Ext. Bal :	$\overline{Y}_m$:	$\overline{Y}_r$:	Tb :
Case 21	Free Trade	9.0	9.0	- 4.7	7.5	- 2.0	- 9.5	+ 5.1	+ 2.1	
	Tariff	9.0	9.0	- 4.7	7.5	- 2.0	- 9.5	+ 5.1	+ 2.1	N.A.
	Control	17.0	10.6	- 4.7	- 2.0	- 2.0	0.0	+ 7.5	+ 4.5	
Case 22	Free Trade	9.0	9.0	- 5.7	7.0	- 2.0	- 9.0	+ 4.7	+ 1.7	
	Tariff	9.0	9.0	- 5.7	4.0	- 2.0	- 6.0	+ 4.7	+ 1.7	9.0
	Control	16.5	10.6	- 5.7	- 2.0	- 2.0	0.0	+ 7.0	+ 4.0	

N.A. - not attainable

NOTE: Where the demoninator (e.g. $I.\eta_{iy} - D_i E_{iy}$) gives a value of zero, the $\overline{Y}$ value cannot be determined. In these cases that sector is arbitrarily given an initial growth of 0.05 (in value terms) and the effect of this growth fed into the rest of the model.

	η_{iy}:	η_{ny}:	η_{xy}:	η_i:	η_n:	η_x:	E_{iy}:	E_{ny}:	E_{xy}:	E_{my}:	E_i:	E_n:	E_{xh}:	E_{xt}:	E_m:
1.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-1.0	-1.0	-1.0	-1.0	-1.0
2.	1.0	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	-0.5	-0.5	-0.5	-0.5	-0.5
3.	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	-1.5	-1.5	-1.5	-1.5	-1.5
4.	1.0	1.0	1.0	0.5	0.5	0.5	1.0	1.0	1.0	1.0	-0.5	-0.5	-0.5	-0.5	-0.5
5.	1.0	1.0	1.0	0.5	0.5	0.5	1.0	1.0	1.0	1.0	-1.5	-1.5	-1.5	-1.5	-1.5
6.	1.0	1.0	1.0	1.5	1.5	1.5	1.0	1.0	1.0	1.5	-1.5	-1.5	-1.5	-1.5	-1.5
7.	1.0	1.0	1.0	1.5	1.5	1.5	1.0	1.0	1.0	1.0	-0.5	-0.5	-0.5	-0.5	-0.5
8.	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-0.5	-0.5	-0.5	-0.5	-0.5
9.	1.0	1.0	1.0	0.5	0.5	0.5	1.5	1.5	1.5	1.5	-0.5	-0.5	-0.5	-0.5	-0.5
10.	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-1.5	-1.5	-1.5	-1.5	-1.5
11.	1.0	1.0	1.0	0.5	0.5	0.5	1.5	1.5	1.5	1.5	-1.5	-1.5	-1.5	-1.5	-1.5
12.	1.0	1.0	1.0	1.5	1.5	1.5	0.5	0.5	0.5	0.5	-0.5	-0.5	-0.5	-0.5	-0.5
13.	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-0.5	-0.5	-0.5	-0.5	-0.5
14.	1.0	1.0	1.0	1.5	1.5	1.5	0.5	0.5	0.5	0.5	-1.5	-1.5	-1.5	-1.5	-1.5
15.	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-1.5	-1.5	-1.5	-1.5	-1.5
16.	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	0.5	1.5	-0.5	-0.5	-0.5	-1.5	-0.5
17.	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	0.5	1.5	-1.5	-1.5	-1.5	-1.5	-1.5
18.	1.0	1.0	1.0	0.5	0.5	0.5	1.5	1.5	0.5	1.5	-0.5	-0.5	-0.5	-1.5	-0.5
19.	1.0	1.0	1.0	0.5	0.5	0.5	1.5	1.5	0.5	1.5	-1.5	-1.5	-1.5	-1.5	-1.5
20.	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	0.5	1.5	-0.5	-0.5	-0.5	-1.5	-0.5
21.	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	0.5	1.5	0.0	0.0	0.0	-1.5	0.0
22.	0.5	0.5	1.0	1.0	1.0	1.0	1.5	1.5	0.5	1.5	-1.0	-1.0	-1.0	-1.5	-1.0

Chapter 8.

Analysis of Chapter 7 results :

It is worth while examining the results in some detail because most of the policy dilemmas of internal/external balance reveal themselves. The cases fall fairly conveniently into three broad groups.

(a) negative growth and balance of payments surplus.

(b) moderate growth with no serious external imbalance

(c) rapid growth and balance of payments deficit.

GROUP A : - cases 2, 8, 10, 12, 14.

All these cases have in common a low income demand elasticity; internal balance requires a reduction of output to compensate for insufficient demand. If, as in cases 10, 12 and 14, price demand elasticities are high the unemployment effects of cost and price increases are serious. In none of these situations is there an external problem other than the non-urgent imbalance if carrying an unnecessary trading surplus. Trade controls are useless weapons. A tariff, per se, merely increases the surplus without stimulating the economy and import control has no balance of payments function. In fact, the use of controls would probably be self-defeating if they were used for 'beggar-my-neighbour' policies of exporting

unemployment. Protectionist policies undertaken by a country in surplus must increase the deficits of deficit nations, forcing them to take protectionist measures.

The imbalance is entirely an internal one. Stimulation of demand by Government fiscal activity will both increase internal activity and help remove the trading surplus. More satisfactorily, using all or part of the trading surplus to import some of the commodities required for expansionary policies would have the two additional advantages of generating non-inflationary expansion and of helping deficit countries out of their difficulties, assisting world expansion by trade growth rather than by using restrictive trade practices in restraint of growth. Certainly, the combination of unemployed resources and balance of payments surplus is not one in which trade controls should be imposed; rather should existing restrictions be removed.

GROUP B : - cases 1, 4, 5, 6, 7, 21.

This is the group which contains those situations where the case for some form of control is strong. All represent relatively balanced supply and demand growth reflecting some external imbalance as a result of internal development. It may be argued that, because imbalance is so slight, no remedial action is required and natural forces will bring about adjustment relatively painlessly. It is worthwhile taking each case in turn and examining the very different situations each one represents.

Case 1 : All elasticities are unity - i.e. this is the closest possible approach to balanced growth both in supply and demand. However, because of the relative increase in home expansion vis-a-vis the rest of the world, there is some loss of export revenue. In addition, real growth is slow - only 0.8%. The external deficit can easily be removed by the imposition of a 5% tariff although it must be recognised that, if this pattern of growth is to continue, it may be necessary to increase tariff year by year to maintain balance. Quantitative controls appear to be more attractive in that they give additional stimulus to growth, increasing it to a 2.8% real rate . However, a similar result could obtain if tariff revenue were redistributed in the form of general tax relief, increasing internal demand. The redistributed tariff would be preferable on the grounds that it could be equitably allocated through the community and would not distort demand patterns. By contrast, the quantitative control system might place the implicit tariff in the hands of a small group of importers.

The major argument in favour of the minimal restriction required to maintain external balance is that economic growth would be directed towards greater self-sufficiency. - it would be anti-trade biased. Allowing free-market forces to operate would tend to induce neutral or pro-trade biased growth.

Case 4 : Again growth in demand for imports is not matched by increase in foreign demand for exports; low price elasticity of demand for exports allows for increased income from higher priced exports, somewhat reducing the the deficit. Growth is moderate (2.2%) and biased towards the internal sectors. Here there is a better case for quantitative controls than for tariff. Because of the low price elasticity of demand for imports, a relatively high tariff of 8% is required to remove a small deficit. Direct controls would more easily remove the deficit without unduly stimulating the economy as a whole (to 3.5%). The only problem is whether or not there is sufficient mobility of resources to allow a very rapid growth in the importable and non-traded sectors. One suspects that such a sizeable readjustment is too dramatic for most economies in a short period, and might lead to temporary shortages in the internal supply sectors.

Case 5 : This is similar to Case 4, except that price elasticities of demand are high, while income elasticities of demand are low. As a result, overall growth is slow. The policy requirement seems to be for a moderate tariff which would eliminate the payments deficit, tariff revenue being used to supplement the level of demand to stimulate more rapid growth.

Case 6 : High price elasticities, both of demand and supply, cancel out any induced growth. Monetary growth

is positive, real growth (marginally) negative. External balance is no problem - the lowest of tariffs, 3%, keeping import prices in line with internal prices is sufficient to achieve balance. Direct controls would turn the negative growth rate into a positive one.

Case 7 : High supply price elasticities ensure positive growth; low demand price elasticities both prevent rapid growth and reduce the size of the deficit. Deficit can be cured by very moderate tariff or by direct control.

Case 21 : High demand income elasticities (except for exportables) directs growth into the internal sectors. If, at the same time, price elasticity of demand (except for exports) is approaching zero, there is no check on the movement of demand away from the export sectors; as a result, the trade deficit is a serious one. In such a situation, tariff is of no use as a means of reaching external balance; quantitative controls are the only possible external weapon. Two dangers are present, however. If price elasticity is near zero, it must be because the commodities produced by the different sectors are not close substitutes - i.e. that what is called 'importables' does not, in the comsumer's opinion, represent goods in close competition with imports. In addition, the transfer of demand on to the importables sector requires a rate of expansion which is certain to be unattainable.

All the conclusions of Group B whould be modified by consideration of the effect of a matching, or compensating, expansion in the economies of trading partners. If, as could normally be expected, there were some autonomous growth in exports, the export sector would grow in a similar manner to the internal sector, external payments would be at or near balance and the overall growth rate would be somewhat higher.

This group therefore represents those situations where interference with the natural mechanism is probably unnecessary; the only reason for interference is if the long term policy goal is a deliberate shifting away from dependence on trade.

GROUP C : Cases 3, 9, 11, 13, 15, 16, 17, 18, 19,20.

It is unnecessary to examine each of these cases in turn. All show high expansionary pressures resulting from high income demand elasticities - i.e. high marginal propensities to consume; the expansionary pressures are increased if price elasticities are low on the demand side, high on the supply side. Inevitably, in every case there is severe pressure on the balance of payments. Neither tariff nor control are solutions to the problem. A tariff might be justified on the grounds that, as a temporary measure, it might give the economy time to adjust to the new conditions, but a very high tariff is required - ranging from 11% for cases 3 and 19 to 29% for case 16. Such severe tariffs would almost certainly bring about

retaliatory tariffs abroad. Quantitative controls are worse. They divert demand away from the leakage of imports into sectors which are already over-expanded; as a result required expansion is totally unrealistic and must be inflationary. The extreme example is case 17. "Normal" requirements are for an overall growth rate of 9.6%, with a growth of 21.5% required in the impor-tables sector; these are already impossible requirements. The imposition of quantitative control would lead to requirements of 14.3% and 37%.

These three groups can be defined as the three broad categories of imbalance which might lead to the imposition or maintanance of protectionist policies.

Group A.

There is a serious falling off in the level of employment as a result of (a) cyclical recession, (b) decline in the level of demand for exports, (c) increase of 'leakage' into imports and/or savings reducing internal growth stimulus. In the case of New Zealand before 1938, for example, all three of these ingredients were present. The first of these causes requires active internal policies designed to stimulate the economy and generate full employment; protectionist policies are likely to be both ineffective and self-defeating because the problem is not external and because they would meet with the kind of destructive rounds of retaliation which added to the troubles of the 1930's.

However, the kind of stimulation required to bring about full employment is likely to bring about excessive demand for imports causing balance of payment difficulties. Essentially, the expansionary activity takes the country out of this group altogether. Again, the New Zealand experience of the pre-1938 period was, that serious external disequilibrium occurred following the success of the policies designed to establish full employment internal equilibrium during 1936 and 1937.

The discussion surrounding this group should, therefore, not revolve around what external policies are required, but around the internal policy requirements, followed by their impact on external sectors which may require secondary, supporting policy decisions. Two important factors are evident.

1. The more rapidly full employment policies are implemented, the more difficult it is to maintain external balance. Internal suppliers will have little time to expand and adjust to the upsurge in demand, and thwarted demand will spill over into imports. In addition the multiplier effects of government activity and induced investment will continue on into the period after full-employment has been achieved - i.e. there is a danger that too rapid an accelaration of activity will carry the economy beyind the full-employment into the over-full employment situation where the balance of payments problem becomes chronic.

2. To the degree that government activity is directed to the non-traded, non-consumer sector of increased infrastructure and welfare services - roads, education, health, public amenities, defence and 'boondoggling' activity, supply growth is directed towards one sector while the consequent demand growth is directed towards another. In terms of the model, the imbalance is of supply expansion of non-traded goods, demand expansion for imports. If government uses too many of the unemployed factors in its activities, not enough are left for the development of competitive importable goods. The use of trade controls to correct the ensuing deficit can thus be criticised on the grounds that they help to perpetuate and even increase an internal distortion without attacking the root cause of the distortion.

Group B.

Growth is positive, relatively slow and some deficit is incurred.

The major reasons are that (a) supply expansion does not match demand expansion, (b) that home growth of import demand does not match foreign growth of demand for home exports. Neither of these factors create serious difficulties. The first, given reasonable factor mobility, is primarily a function of time - the normal lag of slow supply adjustment is response to volatile demand changes. The second difficulty may not materialise at all. If there is comparable growth in foreign economies this

should be reflected in some matching growth in home exports. Should this export growth not eventuate - because of low income elasticities of demand abroad for home country exports - again the solution is largely a function of time. Adjustment of the export commodity 'mix' and/or of home importable substitution takes some time. There is an argument for the imposition of some control on the grounds that

(a) Some well established industries cannot readily change and need time to run down or readjust

(b) Required new industries are non-competitive and unprofitable in their early years until they become established. They could easily be killed at birth by the dumping activities of a foreign competitor

(c) The social and economic disruption caused by temporary unemployment during the adjustmnet period could have a de-stabilising effect - it could trigger off recession, loss of confidence etc. At best it would represent a period of very slow growth with useful resources lying idle.

The counter-argument to the use of trade controls in this situation is that their use may prevent or at least slow down the process of adjustment. To the degree that they remove the economic and social hardship associated with change, they also remove the strongest

incentive to make the change as quickly and efficiently as possible.

The requirement therefore appears to be that some protection may, in selected industries, be desirable, but that such protection should be as small as possible, for a short period and should aim at reducing rather than totally offsetting the economic pressures on these industries. On these grounds selective tariff appears to be preferable to quantitative controls. The level of protection granted is more clearly measurable and can be reduced periodically. An even more satisfactory solution might be that of temporary direct subsidy. The cost of protection to the community can be directly measured and publicised; it is less likely to meet foreign reaction; most important, when the time comes, public support for the removal of subsidy would not be difficult to obtain. Unfortunately, the imposition of a tariff (ostensibly levied on the foreigner) is generally more popular than a subsidy financed by the tax-payer. The subsidy may have the added disadvantage of not (appreciably) reducing demand for imports, but transferring additional demand to importables from the nontraded sector; i.e. it may help to bring about internal supply balance but may have little impact on external payments balance. Finally, the subsidy must be matched by an appropriate tax, especially if over-expansionary tendencies are apparent in the economy. It seems to be appropriate to impose a tariff on imported goods as the

simplest and most convenient remedy for temporary disequilibrium.

Group C :

The economy is in a period of overexpansion with inflationary or potentially inflationary pressures because demand is excessive. The causes of such pressure are numerous but might be reduced to three representative groups.

(i) A sudden temporary upsurge in demand as a result of new desirable commodities - T.V. cars, foreign holidays etc. After a wave of buying, demand can be expected to ease back to a steady level, above the original.

(ii) Excessive spending of a permanent nature by Government in such non-consumer areas as education, defence, health etc. which place one set of requirements on supply growth and induce a separate set of requirements from consumer demand growth.

(iii) A moderate expansionary programme by Government has led to a wave of multiplier/accelerator type induced investment and consumption which has carried the economy into a required level of growth beyond its real capacity.

The first of these does not present any serious difficulty; it is comparable to the New Zealand situation of 1946-1950, when there was a high level of demand for imports to make up for the lost war years. If currency

reserves are adequate or credit available, such temporary requirements could and should be met by financing. Temporary tariff or quantitative controls can be justified as a means of spreading the period of excessive imports over a longer time period.

The second and third situations show potential long-term imbalance and may be compared to the New Zealand situation 1950-1968.

The model suggests that, however serious may be the external imbalance, the use of trade controls is not a solution; the cause of the external deficit is in an internal imbalance and any corrective measures must be directed at the internal economy. The kind of tariff required to have substantial effect on imports would be so large as to meet certain reaction from abroad; to the degree that demand pressures remained and grew the tariff would require regular (upward) revision. The high tariff requirement results from the nature of the new demand, which is income generated and thus relatively insensitive to price changes. In a period of rapidly expanding incomes, especially if attended by some measure of inflation, the price mechanism is not a delicate adjusting instrument.

Although tariff, per se, is of questionable use there is some argument in favour of a currency devaluation. Because (given the right elasticities) it has the dual effect of increasing export income as well as restricting import demand, the size of the devaluation need be much less than the required tariff. In addition, exchange rate devaluation

is more likely to receive nonreactive acceptance abroad. But, at best, tariff or devaluation would provide only a short relief from extreme balance-of-payments pressures during which time the internal distortions would have to be attacked. At worst they could add to cost-inflationary pressures which would make the internal problem greater.

The model further indicates that a policy of quantitative control of trade is quite the wrong one. If the original imbalance stems from the inability of the internal economy to meet the growth requirements of increasing income, then a policy which imposes more pressures on the internal producer sectors can only make the situation worse. Not only will it make impossible over-expansionary demands on the importable and non-traded sectors, but will inevitably draw factors of production away from the export sector in order to meet the requirements of the growing sectors. If costs of export production are related to costs in other sectors, the profit margin in exports will be reduced, making that sector much less attractive. In other words, the effect of arbitrarily reducing imports to the level of export income, requiring increasingly severe self-defeating import restraint. The only effective long-term policies are those aimed at correcting the original cause-[illegible] unbalanced or misdirected growth.

Surveying all cases, a number of general comments might be made.

(a) External imbalance which results from internal imbalance can only be cured by internal policy.

(b) Trade controls may be justified on the grounds that it is necessary to insulate the internal economy or some sectors or industries during a re-adjustment period.

(c) Quantitative import controls may occasionally be justified if there are unemployed factors, or a threat to immobile factors, to allow time for adjustment to take place.

(d) Quantitative import controls may be justified if, in a period of unemployment, Government re-stimulating policy will threaten external balance. Although here it is preferable that the stimulation be given to those industries most likely to be affected by demand growth.

(e) Tariff is generally preferable because, working through the price mechanism, it is more selective of efficiency and is less like likely to cause permanent distortion.

Chapter 9

GROWTH, EXTERNAL IMBALANCE, ADJUSTMENT

Since the Second World War most governments in the developed world have pursued a wide variety of economic and social objectives: equitable income distribution, regional balance, price stability, economic growth, etc. In order to achieve these goals, an equally wide variety of fiscal, monetary and administrative policies have been adopted. Clearly, some of the objectives conflict with one another; it is impossible, for instance, to build a motorway and preserve an unchanged environment. Similarly, some policy mixes are incompatible. Thus, progressive taxation in the interests of greater income equality may work against investment incentives aimed at more rapid economic growth.

This chapter is concerned with the conflicts which may arise when a government tries simultaneously to achieve:

(a) full employment;

(b) continuous growth;

(c) balance of payments equilibrium.

Policies appropriate to (a) and (b), by their expansionary nature, may lead to external imbalance which in turn calls for a set of corrective policies which may require modification of the original measures.

The model deals with the following policy measures:

(1) No interference with 'natural' forces making the usual assumptions of perfect competition, negligible transport costs, etc.

(2) The imposition of a uniform ad valorem tariff sufficient to balance external transactions.

(3) Quantitative restrictions on imports sufficient to balance external transactions.

(4) Exchange rate adjustments.

Thus, policies (1), (2) and (3) assume fixed exchange rates. Adjustment under policy (1) is achieved first by price changes in response to supply/demand imbalance, then by output/market allocation/consumption reactions to these price changes. Policy (2) adjustment is also price stimulated, but one set of prices only is changed - that of imports on the internal market; any other price changes are consequential. Under policy (3), adjustment is by direct attack on the quantity of goods imported. Policy (4) uses the same market forces as policy (1). A change in the exchange rate alters the internal/external price relationship without the need for internal price adjustment, when prices may be 'sticky' (especially downward).

It is necessary to abandon the traditional two commodity approach and to think rather in terms of three classes of commodities - exportables, importables and non-traded goods - recognizing a wide grey area of

interchangeability in production and consumption among all three classes. Thus, all goods produced and/or consumed in a country may be ranged in order, according to the ratio of the volume of production to the volume of consumption $(\frac{V_s}{V_d})$. At one end of the range, where the ratio is zero, total supply is from imports; where the ratio lies between zero and unity, imports compete directly with home-produced goods. This is the importable range. A ratio of 1:1 can be taken as representing non-traded goods, and a ratio greater than unity represents exportables, with production in excess of what is required to meet internal demand.

In New Zealand the highest ratios would be for such commodities as greenstone ornaments, butter, wool and deer-meat; ratios slightly above unity would represent leather goods, canned fruit, beer and football coaches - i.e. some of the product is consumed at home, some exported, some imported, with somewhat more being exported than imported. From New Zealand's point of view, the interesting commodities in this group are the manufactured goods which are becoming increasingly important - refrigerators, washing machines, farm implements and machinery, etc. Clearly, a change in price relativities or demand patterns could alter a commodity's ratio - i.e. a current export could become non-traded if terms of trade moved "unfavourably";

similarly, goods currently non-traded could easily become exports, as have some manufactures since the 1967 devaluation caused export prices to become relatively more attractive than domestic prices.

A unitary ratio, representing non-traded goods, includes all goods which are excluded from external trade by transport costs - in particular, the personal services of such people as doctors and electricians, and the use of internal transport services. But a wide range of these goods are available for trade if conditions change. All, of course, must be exportable to a greater or lesser degree, as inputs embodied in final products. An electrician wiring a milking shed or a train carrying export freight are 'exporting' a commodity which we normally think of as non-traded. However, it is conceptually tidier to think in terms of finished products and to recognize a broad class of commodities not directly traded externally. At the margin, changes in relative prices, and demand and supply conditions could move many of these commodities into the exportable or importable range.

Ratios of less than unity represent predominantly imported goods. Near the unity figure are such commodities as foreign travel, shipping services and T.V. sets; at the extreme of a near zero $\frac{V_s}{V_d}$ ratio are goods whose supply is almost entirely dependent on imports - motor vehicles, jet airliners, ships, sugar

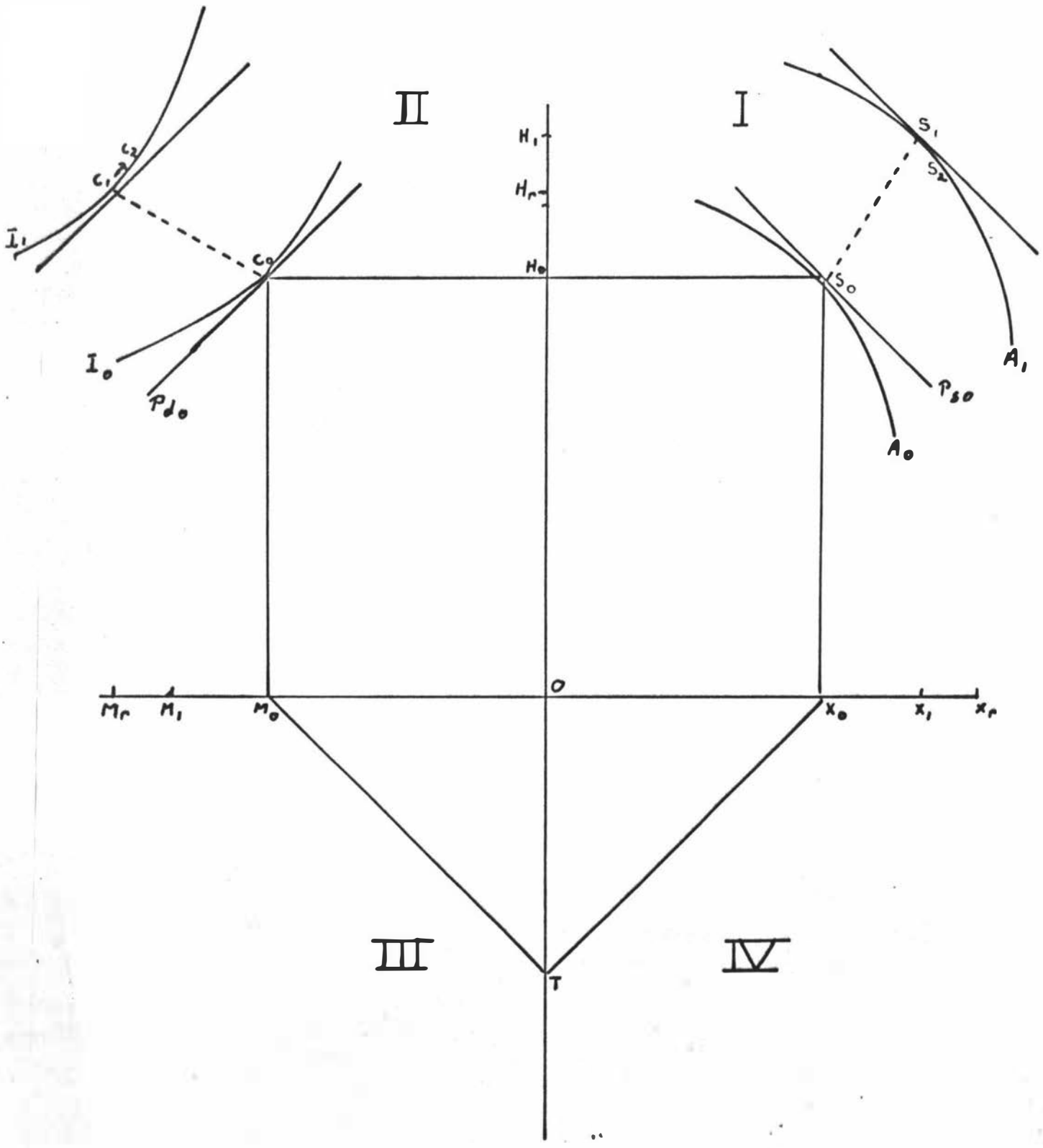
and tea.

The important point is that it is impossible to define a commodity as belonging specifically to the exportable, importable or non-traded group, or to all three groups. All that can be said is that, at a given point of time, some commodities are predominantly export-oriented, some generally non-traded and some import competing. At the margins, the lines of demarcation between groups are volatile because the $\frac{V_s}{V_d}$ ratios of all commodities are continually changing.

Equilibrium may be illustrated in two-dimensional form by Figure 9.1., in which all quadrants are positive. Quadrant I shows the production side, with an initial full-employment output equilibrium at S_o on transformation curve A_o at a price relationshipo $(\frac{x}{h})_o$ shown by the slope of the tangent P_{so}. At this initial level of output, OH_o of products H is directed to the home market, and OX_o of X is exported. Thus, at S_o, the supply substitutability of goods for home and export markets $(\frac{MPPx}{MPPh})$, measured by the slope of the transformation curve, is equal to the relative price of the goods on the two markets.

In this initial situation, supply is matched by demand, shown in quadrant II. Exports OX_o are exchanged for imports OM_o at terms of trade $(\frac{m}{x})_o$ shown by the ratio of the slopes X_oT (quadrant IV) and M_oT (quadrant III).

FIG. 9.1.


II
I
III
IV
H_1
H_r
H_0
C_2
C_1
C_0
I_1
I_0
P_{d0}
S_1
S_2
S_0
A_1
A_0
P_{s0}
O
M_r
M_1
M_0
X_0
X_1
X_r
T

X_oT measures $(\frac{x}{h})_o$, and M_oT measures $(\frac{m}{h})_o$; thus $\frac{M_oT}{X_oT} = (\frac{m}{x})_o$. For ease of exposition, this is shown as a 1:1 ratio.

Thus the markets are cleared at point C_o, on the highest attainable community indifference curve I_o, where the marginal rate of consumer substitution $(\frac{MUm}{MUh})$ is equal to the price relative $(\frac{m}{h})_o$, shown by the tangent Pdo. Because $(\frac{m}{x})_o$ has been taken as unity, the slope of the consumption tangent is the same as that of the supply tangent.

The general internal equilibrium condition is that the total value of output should equal the total value of consumption i.e. that hHs + xXs = hHd + mMd where Hs and Hd represent respectively supply and demand on the home market, and Xs and Md represent supply of exports and demand for imports respectively. The external sector is balanced if the value of exports equals the value of imports, i.e. if: xXs = mMd.

The system consists of three sectors, which must all balance for equilibrium.

1. <u>Internal Supply</u> comprises two classes of goods, those produced for export (X) and those destined for sale on the home market (H). Supply is determined in the following manner.

Maximize Total Revenue (Y)

$$Y = hH + xX$$

where h and x are the respective prices of home and

export goods. Maximization is subject to the production possibility constraint

$$f(H,X) = 0$$

The normal assumptions about the shape of the production possibility curve are made - that it is concave to the origin, with diminishing marginal physical product for each commodity, etc., i.e.

$$\frac{\delta H}{\delta X} < 0 \quad : \quad \frac{\delta^2 H}{\delta X^2} < 0$$

The optimal solution is obtained by meeting the first order conditions

$$\frac{f_H}{f_X} = \frac{h}{x} \qquad (1)$$

i.e. the ratio of marginal physical products equals the price ratio

and $f(H,X) = U$ (2)

i.e. output is on the production possibility boundary. Thus, (1) and (2) give the optimal solution H^S, X^S and hence Y^S.

2. Internal Demand also comprises two classes of goods - those purchased from home producers (H) and those imported (M). Consumers substitute one for the other, seeking to maximize utility, according to the function

$$g = g(H,M)$$

where $$\frac{\partial H}{\partial M} < 0 \quad : \quad \frac{\partial^2 H}{\partial M^2} > 0$$

Maximization is subject to the expenditure constraint

$$Y^S = hH + mM$$

The first order conditions

$$\frac{g_H}{g_M} = \frac{h}{m} \qquad (3)$$

and $$Y^s = hH + mM \qquad (4)$$

give the optimal solution H^d, M^d and hence g^d

3. <u>The External Sector</u> is in equilibrium when

$$\frac{X^s}{M^d} = \frac{m}{x} \qquad (5)$$

or equivalently $Hd = Hs.$

This equilibrium does not, in general, hold, because for any given set of prices H^d is not necessarily equal to H^s.

It is therefore necessary to assume that

$$\frac{dh}{dH} = f(H^d - H^s) \quad : f' > 0,\ f(0) = 0. \qquad (6)$$

i.e. that the price of home-produced and consumed (non-traded) goods will rise in response to excess demand, fall in response to excess supply and remain constant when the market is cleared.

This system is stable for $H^d > H^s$.

For $H^s < H^d$ it is stable only if

$$0 < (H^s - H^d) < \frac{g_M^2}{g_m g_{HH} - g_m g_{MH}}$$

i.e. the system is locally stable.

The derivation of this conclusion is shown as an appendix to this chapter.

In terms of diagram 9.1., it is assumed that the economy is initially at equilibrium in all sectors.

Any marginal move away from equilibrium will induce price and quantity adjustments leading towards a new general equilibrium situation.

The initial equilibrium refers to a point of time at which all markets and prices are in equilibrium. A change in any one of the variables would require a general reshuffle of all values. For example, a favourable shift in the terms of trade, making more imports available for the same quantity of exports would lift consumption up to a higher indifference curve and induce a movement down the new curve, away from home-produced goods towards imported goods which would be relatively cheaper. Fewer goods would be demanded on the home market, either making more available for export or causing some unemployment.

The concern of this chapter is with the temporary disruption which can arise out of the natural growth process. If all sectors grow at the same rate and increased demand for each commodity exactly matches increased supply of each commodity with all price relationships remaining unchanged, no difficulties arise - a balanced growth path can be followed without the need for adjustments which could be socially and economically disruptive. However, if supply and demand follow divergent growth paths, some policy measures are required, either to assist adjustment or to cushion its effects.

It is assumed that, in the short run, marginal increments to factors of production and their allocation are not likely to be significantly different from previous increments and, unless future consumer behaviour can be accurately predicted, producers are likely to expand supply on the assumption that relative prices will remain unchanged.

For ease of exposition, it is convenient to show the growth as balanced on the supply side - i.e. as a shift of the transformation curve A_0 to A_1 so that expansion of supply is proportional in both sectors (marginal supply ratio $\frac{H_0H_1}{X_0X_1}$ = average supply ratio $\left\{\frac{0\ H_0}{0\ X_0}\right\}$.

Supply thus moves from S_0 to S_1, producing $0\ H_1$ and $0X_1$, with the supply price ratio unchanged, i.e. the price tangent at S_1 has the same slope as at S_0.

The sequence of growth is thus:-

1. Supply growth continues on a (linear) expansion path extrapolated from the previous section of the expansion path in anticipation of a matching growth in demand.
2. Income increases in accordance with (1).
3. Demand grows but not necessarily in line with supply growth.
4. Supply and/or demand and/or prices are required to adjust.

None of these assumptions (except the last) is

essential to the argument. Any set of conditions (e.g. changes in terms of trade, unbalanced supply growth, changes in fashion, changes in foreign markets, etc.) which upset balance require an adjustment process.

There is no reason to expect that growth in consumption will match growth in supply. In New Zealand the income elasticity of demand for imports has normally been higher than for internal goods and services. As a result, demand expansion follows the pattern illustrated by the move from C_o to C_1 where the marginal consumption ratio of home to imported goods is less than the average consumption ratio, i.e. $\frac{HoHr}{MoMr} < \frac{OH_o}{OM_o}$

The demand requirements of the new consumption pattern are OH_r and OM_r, i.e. there is excess supply of goods for the home market $(OH_1 > OH_r)$ and, assuming that the terms of trade remain constant, excess demand for imports, which now require OX_r of exports for external balance. Unless the transfer of supply from the home market to exports can be made immediately, the result is likely to be some unemployment in the internally oriented supply sector and some deficit in external payments.

Adjustment

Method 1 - Free Trade, Price Adjustment

The over-supply of home-produced goods would cause re-allocation of resources along the transformation curve S_1 to S_2 in Fig. 9.1., reducing the $\frac{h}{m}$ price ratio; with $\frac{m}{x}$ remaining constant at 1:1, the $\frac{h}{m}$ ratio would also fall, inducing a consumer move along I_1 in the direction of C_2. Equilibrium is re-established at S_2 and C_2, with an internal supply level somewhere between OH_r and OH_1, and an expert supply between OX_r and OX_1. The price ratios at S_1, C_1, S_2 and C_2 can be written as

$$\left(\frac{h}{x}\right)_1 \quad \left(\frac{h}{m}\right)_1 \quad \left(\frac{h}{x}\right)_2 \quad \left(\frac{h}{m}\right)_2.$$

In the new equilibrium

$$\left(\frac{h}{x}\right)_2 < \left(\frac{h}{x}\right)_1 = \left(\frac{h}{x}\right)_o \quad \text{..... supply price}$$

$$\left(\frac{m}{x}\right)_2 = \left(\frac{m}{x}\right)_1 = \left(\frac{m}{x}\right)_o \quad \text{..... terms of trade}$$

$$\left(\frac{h}{m}\right)_2 < \left(\frac{h}{m}\right)_1 = \left(\frac{h}{m}\right)_o \quad \text{..... consumer price}$$

$$OH_r < OH_2 < OH_1$$

$$OX_r > OX_2 > OX_1$$

The diagram neglects the movement to an indifference curve below I, tangent to a new price line, reflecting a slight fall in real income.

This natural movement towards the equilibrium unfortunately requires a combination of conditions which may be politically and socially difficult to accept.

(a) Owners of factors of production used intensively in producing goods for the home market are required to accept relatively lower incomes. This means either reductions in wages and profits - unthinkable under present conditions, or constant wages and profits in one (internal) sector while wages and profits rise in the other (export) sector. The institutional wage-fixing machinery, which seeks parity between sectors, makes the second alternative almost as impossible as the first.

(b) Some temporary unemployment may result. Its size will depend on the relative income elasticities of demand for imports and internal commodities, the relative supply expansion of the producing sectors - i.e. on the directions of demand and supply growth in Fig. 9.1. The duration of unemployment will depend on the mobility of factors between one sector and another and how readily goods can be transferred from one market to the other. If, as in New Zealand, production for export is largely in the primary sector, while production for the internal market is in manufactures and services, which are not easily exportable, unemployment could well be prolonged.

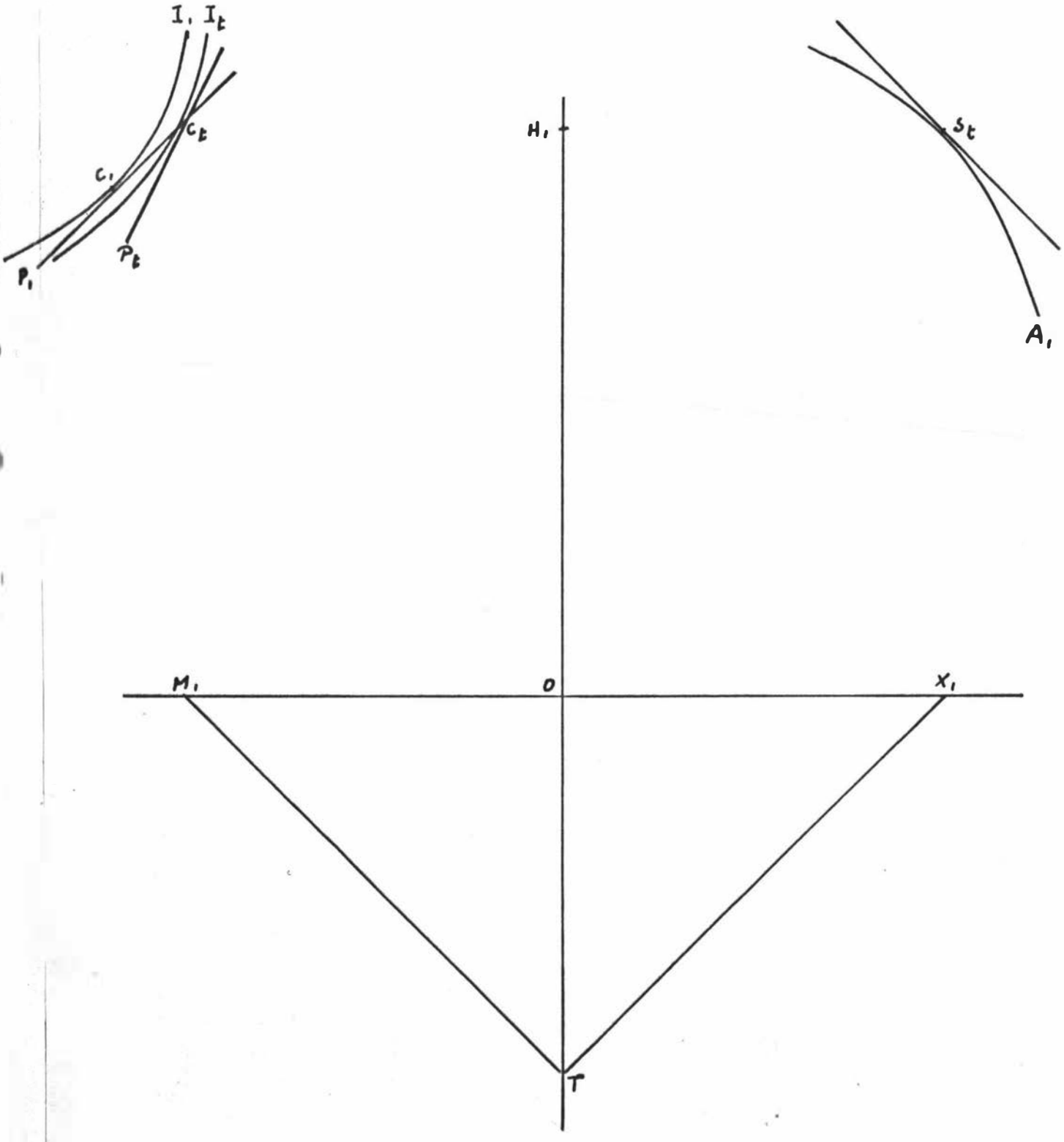
(c) Adjustment could increase dependence on trade - i.e. growth might become pro-trade or ultra-pro-trade biased. Conceptually, there is no harm in this. Unfortunately, if exports are principally of primary products, such growth could mean increasing uncertainty in a world where terms of trade fluctuate widely in the short run and possibly show a downward secular trend. Finding profitable markets for increased output in the face of foreign protectionist policies could be an insurmountable barrier.

It is therefore scarcely surprising that modern governments often reject the traditional price mechanism adjustment and consider other methods of attaining equilibrium.

Method 2 - Tariff Adjustment

This policy aims at maintaining internal production levels, shown in Figure 9.2. as S_t, corresponding to point S_1 in Figure 9.1. - i.e. balanced growth and full employment are to be maintained. The internal consumption pattern must therefore be at C_t, to ensure that all internal product (OH_1) is consumed, with OX_1 exports exchanging for OM_1 imports. This requires a forced reduction of satisfaction from the 'free' consumer equilibrium of C_1 (corresponding to the C_1 of Figure 9.1.) to the post tariff equilibrium at C_t, on an indifference curve below the attainable I_1, but above the pre-growth curve I_o. This is achievöd by using (or misusing?) the

FIG. 9.2.



price-mechanism, bringing about a relative fall in the price of internal goods, shown by the steeper slope of the price tangent at C_t than at C_1. There is no change in the supply price relationship - i.e. the tangent at S_t is the same as at the original S_o (and S_1) of Fig. 91. Nor has there been any change in the terms of trade. But the tariff increases the internal selling price of imported goods.

At the new equilibrium

$$\left(\frac{h}{x}\right) = \left(\frac{h}{x}\right)_1 = \left(\frac{h}{x}\right)_o \quad \text{..... supply price}$$

$$\left(\frac{m}{x}\right)_t = \left(\frac{m}{x}\right)_1 = \left(\frac{m}{x}\right)_o \quad \text{... terms of trade}$$

$$\left(\frac{h}{m}\right)_t = \frac{1}{(1 + t)} \left(\frac{h}{m}\right)_1 < \left(\frac{h}{m}\right)_o \quad \text{.. consumer price}$$

where the subscript 't' denotes the post-tariff price relationship and 't' is the tariff rate.

The two effects of the tariff are clear from Fig. 9.2.

The Price Effect is demonstrated by the difference between $\frac{h}{m}$ at point C_t (after tariff) and $\frac{h}{m}$ at point C_1 (with free trade). The slope of the tangent P_t is steeper than of P_1.

The Income Effect is the loss of consumer satisfaction shown by the attainment of the lower indifference curve I_1.

As with the free trade equilibration mechanism, a number of conditions are required to ensure the success of a tariff policy.

1. Revenue from the tariff must be withheld. If it is re-injected into the economy - e.g. by other tax relief, Government spending or subsidy - excess demand would be created for internal goods, or imports or both, as consumers tried to move back up to the higher (unattainable) indifference curve I_1.

2. The community must be prepared to accept the lower standard of living indicated by I_t and the relatively high internal price of imported goods consequent on the imposition of a tariff. In fact, this pair of conditions is likely to be quite acceptable. Most consumers would only be conscious of an improvement in living standards resulting from growth, shown by the movement from I_o in Fig. 9.1. to I_t in Fig. 9.2. They would be unaware of the non-attainment of the full benefit of growth at I_1. Furthermore, the maintenance of full employment might be regarded as worth the higher price paid for imported goods.

3. There must be no foreign reaction, which could take two forms:

(a) In the event of low supply elasticity of and high demand elasticity for imports, all or part of the effect of the tariff could be offset by a reduction in the foreign offer price of imports, improving terms of trade. In terms of the Figure 9.2., M would move outwards as more imports became available for given exports; consumer preference would move down the I_t

curve and out towards I_1 as the price ratio established itself somewhere between P_t and P_1. External balance would be maintained, but there would be some internal imbalance as the demand for home-produced goods fell. The result might well be complaints about foreign 'dumping' tactics, with political pressure from affected groups demanding additional anti-dumping tariff to offset the reduced import price.

(b) Foreign retaliatory tariffs could reduce export volume or force a lowering of export prices, reducing the ability to maintain import levels at OM_1. This would lead to an increased export requirement and/or increased internal product to meet frustrated demand. The word 'retaliatory' is unfortunate in that there might be no conscious desire on the part of foreign governments to harm anyone; the foreign policy is more likely to be the corollary of the home policy - an attempt to readjust internal and external balance, disturbed by reduced exports or increased imports. In a multi-lateral trading world the retaliatory foreign tariff would be the end result of a long chain of reactions, so remote from the original event of home tariff imposition that no link between the two events may be discernable.

However, it may be argued that for a small country like New Zealand, tariffs would have a negligible effect on the rest of the world and the possibility of

retaliation is negligible.

4. A major difficulty arises in assessing the level of tariff required; assessment should be based on estimated growth elasticities of supply and demand and on estimated internal growth rates. Too high a tariff could lead to unnecessary development of high-cost internal production. Too low a tariff could lead to some unemployment. Political pressures are such that, normally, the higher tariff is likely to be preferred.

The difficulties of c(i) and (d) can be overcome by using the third adjustment mechanism.

Method 3 - Adjustment by Quantitative Control

Quota controls have the advantage that the level of restriction required for balance of payments purposes can readily be assessed. The value of imports shall not exceed export earnings and the commodities imported shall supplement the supply from internal sources. In addition, it is easier to discriminate between different users of imports.

In Fig. 9.3. imports are restricted to OM_1 equal to the value of OX_1 and less than the free import requirements OM_r. The main difference between tariff and quota is that tariff uses the price mechanism to induce consumers on to a lower indifference curve by removing purchasing power, while quotas have no effect on the overall level of spending.

A variety of results can stem from the imposition of quota, depending on what additional measures are used in support of import control.

1. No Additional Measures. If no restraints on spending or prices are imposed, consumers will switch frustrated demand for imports to the nearest home-produced substitute, maintaining (or trying to maintain) their real income level. In terms of Figure 9.3. the movement is along indifference curve I_1 to C_q vertically above C_t. This represents a combination of goods in excess of the S_1 supply possibility - an excess demand for home product becomes evident. This demand can only be met by a supply movement along the transformation curve to S_q. This, however, leads to a reduction in the quantity of goods available for export, which leads to external deficit, requiring further import restriction and so on ad infinitum.

The resulting imbalance is most clearly evident from the slopes of the price tangents at C_q and S_q. The supply requirement is that $(\frac{h}{x})$ shall rise, while the demand requirement is that $(\frac{h}{m})$ shall fall, i.e. equilibrium demands.

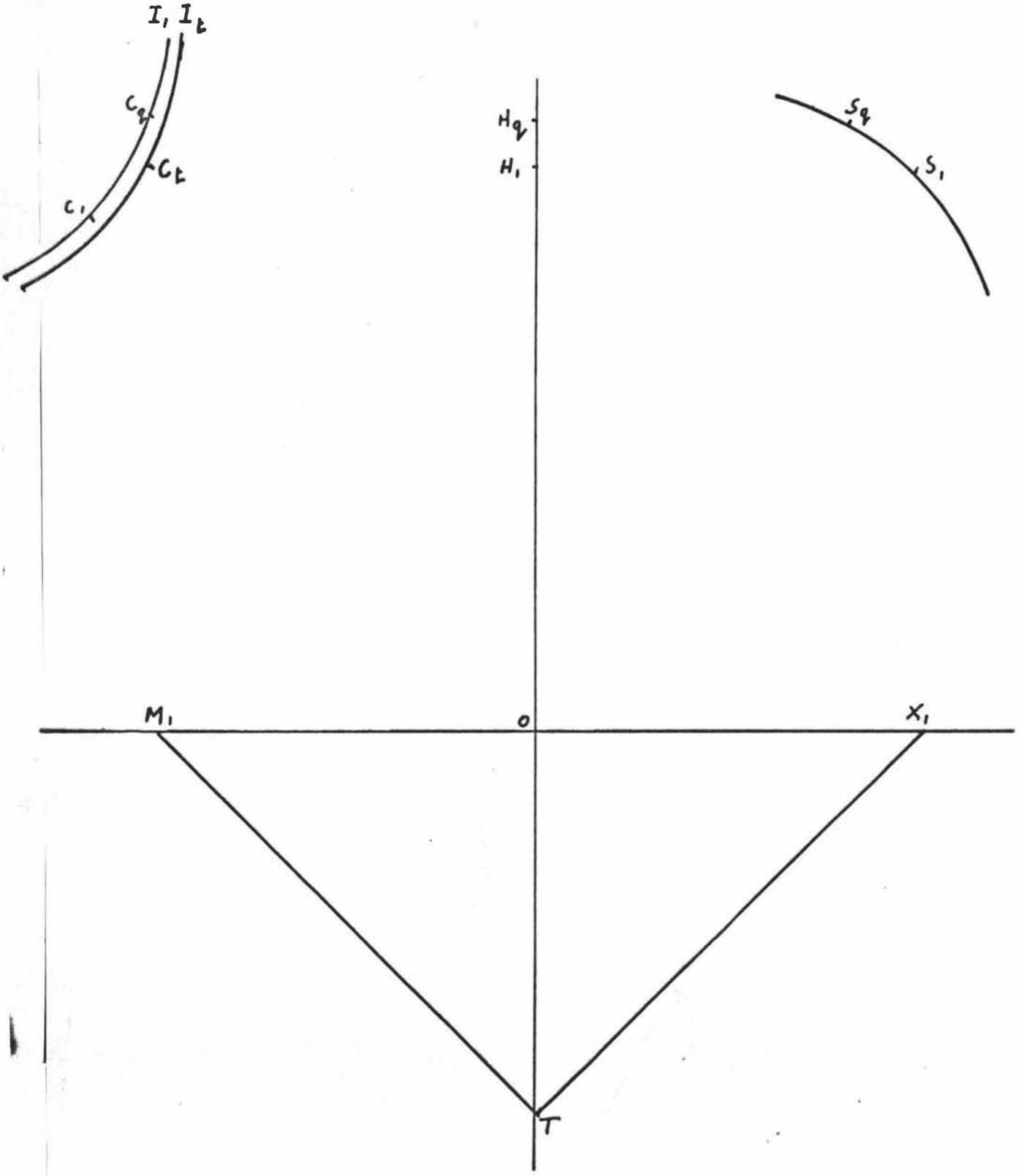
$(\frac{h}{x})_q > (\frac{h}{x})_1$ ..... supply price

$(\frac{m}{x})_q = (\frac{m}{x})_1$ ..... terms of trade

$(\frac{h}{m})_q < (\frac{h}{m})_1$ ..... consumer price

This is clearly an impossible set of conditions, unless an implicit tariff, levied by importers, raises the internal price of imports sufficiently to make $(\frac{h}{m})_q < (\frac{h}{m})_1$ allowing $(\frac{h}{x})$ to rise also.

FIG. 9.3.



The internal market is cleared, but there is still an external imbalance. This implicit tariff does not alter the level of demand as it remains in private hands for re-spending. It will, however, cause some re-distribution of income, and may lead to a change in the shape of indifference curve I_q.

2. Price Control. Government may attempt to prevent importers benefitting from implicit tariff by controlling the prices of imported and/or import competing goods to hold prices at pre-quota levels. On the (heroic) assumptions that administrative problems can be overcome and that price controls are effective, the effect would be to push consumers back towards point C_1 on the indifference curve I_1. This would mean some excess demand for imports, and some oversupply or unemployment in the home-supply sector, unless additional measures, such as direct rationing of imports and subsidizing of home-produced goods, were also introduced.

3. Tariff and Quota. Government may collect the implicit tariff by levying a tariff or charging fees on import licences. If the tariff/licence fee is accurately assessed, the effect is to move consumers to C_t and the quota system becomes superfluous.

A quota system requires a combination of supporting measures for both internal and external balance.

Internally: A policy of demand restraint must

reduce real incomes to I_t. This can be achieved by general fiscal and monetary restraints or by taxing away the profits of importers. The taxing of profits is, in effect, a collection of the implicit tariff and appears to be a roundabout method of administering a tariff policy. An accurate assessment of business profits is a very difficult proposition, relying as it does primarily on the declared cost and revenue accounts of the firms concerned, and is administratively an expensive process. It is certainly no more accurate than a direct assessment of the tariff required to achieve the same end. If importers' profits can be assessed, or an additional sales tax placed on imported goods to absorb profit or reduce demand, the quota system is unnecessary; a direct tariff would have the desired result.

General consumer restraint is politically difficult to maintain over a period of time; it is also unjust that the whole community should be taxed to offset the profits of a privileged group of importers, unless the community can be convinced that this is an acceptable price to pay for full employment. It is of questionable value as a policy because demand restraint affects all commodities and general taxation to reduce import demand is bound to reduce demand for internal goods at the same time, the degree depending on the relative marginal propensity to consume home and imported goods. If, for instance, the marginal propensity to import were 0.2,

the required general reduction in purchasing power would need to be five times the amount necessary to correct external balance, if immediate results are sought and no time allowed for the working out of multiplier effects.

In fact, what is likely to happen is that some measure of excess demand will remain, with permanent pressure on import requirements and on the internal production of importables.

(b) Externally: The models of Chapters 2 - 9 have suggested that a long-run effect of quota restraints is often to create further deficit. In this event, either foreign exchange reserves must be allowed to dwindle in order to meet the constantly recurring deficit in external payments, or the exchange rate must be sufficiently flexible to make export growth attractive to home producers by granting them relatively higher prices in home currency terms.

The reduction of reserves, supplemented by borrowing from abroad, is a short-term solution which can be pursued only as long as reserves and borrowing-power last. With fixed exchange rates, the ultimate effect of such a course is to build up increasing speculative pressure on the currency culminating in a final devaluation, arbitrary in size, which effectively tries to make in one lump adjustment, the many small adjustments which would have been made, had the

exchange rate been flexible from the outset.

If exchange rates are flexible, the policy of quantitative control, as a balance of payments policy, becomes superfluous, because the change in rates should themselves bring about the necessary adjustment without the need for further administrative control.

The most important weakness of both Tariff and Quantitative Control as policies are that they are both temporary holding operations, which do not help to bring about the long-term adjustments required for the balance. In fact, they are not corrective policy measures at all in the sense that they do not direct re-adjustment.

Unfortunately, tariff and control systems tend not to be short term, but become built-in long-term measures - and the longer they remain, with the attendant internal distortions, the more difficult becomes their removal and a return to 'normal'. The problem can easily be recognized by drawing in on diagrams 9.2 and 9.3 further transformation curves representing continued growth. Each successive growth period requires additional tariff or quota to maintain balance. It is relatively easy to institute a policy which permits the divergence to begin, and to sustain growing distortion by increasing control measures. However, reversing the policy and inducing re-adjustment may be a very painful process.

Method 4 - Exchange Rate Adjustment

Of the three methods hitherto considered, only the first, using the free trade supply/demand readjustment via the price mechanism, offers a means of achieving stable equilibrium. The other two policies are attempts to avoid the effects of disequilibrium by building in a counterbalancing distortion which will maintain a disequilibrium position. Over time, the control methods of tariff and quota tend to increase disequilibrium by encouraging the growth of non-competitive production for a protected internal market, which will require increasing levels of protection in order to survive. They thus tend to lead the economy away from a stable equilibrium path.

The free trade adjustment mechanism presents some major difficulties for the small country. The required price change must take place internally, by a fall in the price of home-produced goods, external prices remaining constant. This is not easily achieved, especially if institutional arrangements (e.g. wage rates) make prices very sticky downwards. The adjustment might require widespread unemployment through the whole of the economy in order to line up with external balance requirements - i.e. the dog of the whole economy may be wagged by the tail of the external sector. The time-period required could be several years.

If, however, exchange rates are adjustable, it is

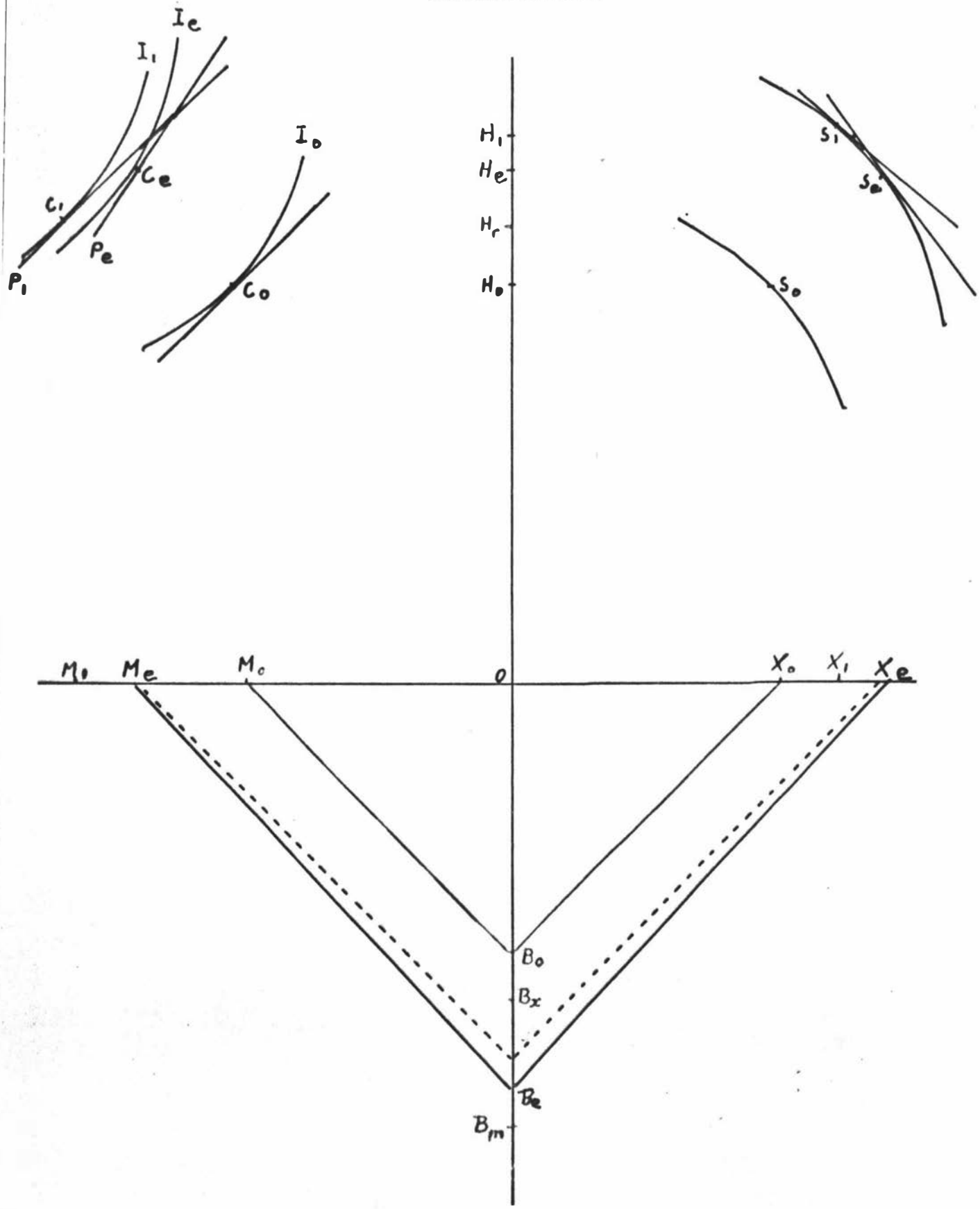
possible for $\frac{m}{x}$ to remain constant while $\frac{h}{x}$ and $\frac{h}{m}$ both fall. This is because, in terms of the home currency, x and m both increase by the same amount (or similar amount, depending on relative X and M supply elasticities, following adjustments in the terms of trade) bringing about a relative fall in h.

Write the initial exchange rate as $e = (\frac{\$F}{\$H})_o = \frac{1}{1}$ i.e. in the initial equilibrium situation shown at S_o and C_o in Figure 9.4., external balance is maintained because $e.x.X_o = e.mX_o$. This is shown diagrammatically by converting OX_o (volume of exports) into OB_o $(= OH_o.\frac{h}{x})$, representing value of exports in terms of the internal commodity. The ratio of $\frac{OX_o}{OB_o}$ (the inverse of the slope of the line X_oB_o) gives the $\frac{h}{x}$ price relationship. Similarly, OM_o imports are converted into OB_o internal value. External and internal markets are balanced.

After growth to S_1 and C_1, with all prices unchanged, the demand requirement is for imports OM_1, shown as OB_m on the lower vertical axis, but supply offer is OX_1, shown as OB_x. The external deficit $(OX_1 - OM_1)$ is thus measurable as $OB_x - OB_m$ in terms of the home commodity. This deficit is matched by excess internal supply $OH_1 - OH_r$.

A fall in the exchange rate leaves the $\frac{e.m}{e.x}$ relationship, and thus the $\frac{m}{x}$ relationship unchanged.

Fig 9.4.


Ie
I1
Io
Ce
C1
Co
Pe
P1
H1
He
Hr
Ho
S1
Se
So
M1
Me
Mo
O
Xo
X1
Xe
Bo
Bx
Be
Bm

However, in terms of the home currency $\frac{h}{m}$ and $\frac{h}{x}$ both fall - i.e. $\frac{h}{m\ (1/e)}$ and $\frac{h}{x\ (1/e)}$ are lower after the fall in the exchange rate. Thus, in Figure 9.4, supply price $\frac{h}{x}$ moves towards the steeper tangency of Pe; consumer price $\frac{h}{m}$ moves towards the steeper tangency at Ce . These changes are reflected in the steeper exchange ratios XeBe and MeBe; but $\frac{Xe\ Be}{Me\ Be} = \frac{Xo\ Bo}{Mo\ Bo}$ i.e. external terms of trade remain unchanged. Internal supply at Se, supplying OHe and OXe balances demand at Ce, consuming OHe and OMe. The result is similar to that of the tariff policy, except that the internal/external price discrepancy resulting from the imposition of tariff or imports is now not apparent except by comparison of pre- and post- adjustment exchange rates; and the impact of exchange rate adjustment is shared between exports and imports.

One important advantage of exchange rate adjustment is that each stage of growth starts from equilibrium. If a new (A_2 A_2) transformation curve is drawn, with demand still import biased, then the rate requires further downward adjustment. If demand growth becomes internally biased, the rate should appreciate. Such adjustments are more easily made than tariff changes.

As with the three previous methods, the use of the exchange rate mechanism cannot, by itself, be regarded as a policy which brings about equilibrium. It is simply an external counterbalance to internal imbalance.

If some chronic disequilibrium exists in the internal economy, the movement in exchange rates can do no more than provide a short period of external balance during which internal adjustment policies can be implemented. If such internal adjustment is not made, external imbalance is likely to re-appear.

The critical feature of exchange rate adjustment is the relative speed of reaction of internal supply and internal prices. The internal price effects of a currency change are immediate and set up two reactions. The first is supply movement towards the higher priced export and competing markets. It is necessary that commodities flow and production processes adjust to increase the supply of goods in those areas before the second re-action is complete. This second movement is that prices in the internal sector may rise to match the external sector, under demand pressures induced by an improvement in the balance of payments and institutional wage, profit and price systems which tend to match increases in one sector with increases in the other.

The final comment must be a somewhat trite one. External imbalance is normally the result of some internal disequilibrium and the cure lies in internal adjustment. Any external policy can do no more than provide a breathing space during which the necessary

policies can be affected. Of the possible external policies available, the use of a flexible exchange rate system provides the most favourable situation for the carrying out of the necessary adjustment process.

Appendix to Chapter 9

Notation $f_1 = f_H$, $f_2 = f_X$, $g_1 = g_H$, $g_2 = g_H$

Problem 1 Maximize $Y = hH + xX$

subject to $f(H,X) = U$

where $\frac{dH}{dX} < 0$, $\frac{d^2H}{dX^2} < 0$, $h > 0$, $x > 0$.

Form the Lagrangian function ;

$$L^1 = hH + xX + \lambda (U - f)$$

First order condition:

$$\left.\begin{aligned} h - \lambda f_1 &= 0 \\ x - \lambda f_2 &= 0 \\ U - f &= 0 \end{aligned}\right) \Rightarrow H^s,\ X^s;\ Y^s$$

Second order condition: The requirement is that:

$$\Delta^s = \begin{vmatrix} L'_{11} & L'_{12} & -f_1 \\ L'_{21} & L'_{22} & -f_2 \\ -f_1 & -f_2 & 0 \end{vmatrix} > 0$$

i.e.
$$\begin{vmatrix} -\lambda f_{11} & -\lambda f_{12} & -f_1 \\ -\lambda f_{21} & \lambda f_{22} & -f_2 \\ -f_1 & -f_2 & 0 \end{vmatrix}$$

$$= \lambda \left[-f_1 (f_2 f_{12} - f_1 f_{22}) + f_2 (f_2 f_{11} - f_1 f_{21})\right]$$

$$= \lambda (f_2^2 f_{11} - 2 f_1 f_2 f_{12} + f_1^2 f22) > 0$$

Now $\frac{d^2H}{dX^2} = -\frac{\Delta}{\lambda f_1^3} = -\frac{\Delta^s}{h f_1^2} < 0$

therefore $\Delta^s > 0$

i.e. the second order condition is satisfied.

Consider price changes dh, dx:

$$dh - f_1 d\lambda^s - \lambda^s f_{11} dH^s - \lambda^s f_{12} dX^s = 0 \qquad (i)$$

$$dx - f_2 d\lambda^s - \lambda^s f_{21} dH^s - \lambda^s f_{22} dX^s = 0 \qquad (ii)$$

$$f_1 dH^s + f_2 dX^s = 0 \qquad (iii)$$

$$f_2(i) - f_1(ii) \rightarrow (f_2 dh - f_1 dx) - \lambda^s (f_2 f_{11} - f_1 f_{21}) dH^s$$

$$- \lambda^s (f_2 f_{12} - f_1 f_{22}) dX^s = 0$$

and, substituting for dX^s in (iii)

$$f_2 dh - f_1 dx = \lambda^s \left[(f_2 f_{11} - f_1 f_{21}) - \frac{f_1}{f_2} (f_2 f_{12} - f_1 f_{22}) \right] dH^s$$

$$\therefore \quad H^s = \frac{f_2 (f_2\, dh - f_1\, dx)}{\Delta^s}$$

In particular $\frac{\partial H^s}{\partial h} = -\frac{f_2^2}{\Delta^s} > 0$

and $\frac{\partial X^s}{\partial h} = H^s + h \frac{\partial H^s}{\partial h} \cdot \frac{h}{X^s} \times \frac{\partial X^s}{\partial h} = H^s$

from (iii) and 1st order conditions.

Problem 2

Maximize $g = g(H,M)$

subject to $Y^s = hH + mM$

where $\frac{dH}{dM} < 0, \quad \frac{d^2H}{dM^2} > 0, \quad h > 0, \quad x > 0$

$$L^2 = g(H,M) + \mu (Y^s - hH - mM)$$

First order condition

$$\left.\begin{aligned} g_1 - \mu h &= 0 \\ g_2 - \mu m &= 0 \\ Y^s - hH - mM &= 0 \end{aligned}\right\} \Longrightarrow H^d, \; M^d, \; g^d$$

Second order condition

$$\Delta^d = \begin{vmatrix} L^2_{11} & L^2_{12} & -h \\ L^2_{21} & L^2_{22} & -m \\ -h & -m & 0 \end{vmatrix} > 0$$

i.e.
$$\begin{vmatrix} g_{11} & g_{22} & -h \\ g_{21} & g_{22} & -m \\ -h & -m & 0 \end{vmatrix} = -h(-mg_{12} + hg_{22}) + m(-mg_{11} + hg_{21})$$

$$= -\left(m^2 g_{11} - 2hmg_{12} + h^2 g_{22}\right)$$

Now $$\frac{d^2H}{dM^2} = - \frac{g_2^2 g_{11} - 2g_1 g_2 g_{12} + g_1^2 g_{22}}{g_1^3}$$

$$= - \frac{m^2 g_{11} - 2 hm g_{12} + h^2 g_{22}}{\mu h^3} > 0$$

from first order conditions.

Since $\mu > 0$ at optimum (μ = Marginal utility of income)

$$\Delta^d > 0$$

Consider price changes dh , dm

$$g_{11}\, dH^d + g_{12}\, dM^d - \mu^d dh - h d\mu^d = 0 \qquad \text{(i)}$$

$$g_{21}\, dH^d + g_{22}\, dM^d - \mu^d dm - m d\mu^d = 0 \qquad \text{(ii)}$$

$$dY^s - h dH^d - m dM^d - H^d dh - M^d dm = 0 \qquad \text{(iii)}$$

m(i) $-$ h(ii) $\rightarrow (mg_{11} - hg_{21})\, dH^d + (mg_{12} - hg_{22}) dM^d$

$$-\mu^d (mdh - hdm) = 0$$

and substituting for dH^d in (iii)

$$(mg_{11} - hg_{21})\, dH^d + \frac{(mg_{12} - hg_{22})}{m} (dY^s - h dH^d - H^d dh - M^d d_m) - \mu^d (mdh - hdm) = 0$$

therefore: $(m^2 g_{11} - 2 hm g_{12} - h^2 g_{22})\, dH^d =$

$$\mu^d m (mdh - hdm) - (mg_{12} - hg_{22}) (dY^s - H^d dh - M^d dm)$$

or

$$dH^d = \frac{\mu^d m (mdh - hdm) - (mg_{12} - hg_{22}) (dY^s - H^d dh - M^d dm)}{-\Delta^d}$$

In particular

$$\frac{\partial H^d}{\partial h} = -\mu \frac{d_m^2}{\Delta d} - \frac{(mg_{12} - hg_{22})\, H^d}{\Delta d} + \frac{(mg_{12} - hg_{22}}{\Delta d} \quad \frac{\partial Y^s}{dh}$$

For stability it is required that $\frac{\partial H^d}{\partial h} < 0$

i.e. $$-\mu \frac{d_m^2}{\Delta d} - \frac{(mg_{12} - hg_{22})H^d}{\Delta d} + \frac{(mg_{12} - hg_{22})\, H^s}{\Delta d} < 0$$

or $$H^s - H^d \frac{\mu d_m^2}{mg_{12} - hg_{12}} = \frac{g_2^2}{g_1 g_{12} - g_1 g_{22}}$$

(i) if $H^d > H^s$ the condition is satisfied for a normal good $(mg_{12} - hg_{22} > 0)$

(ii) if $H^d < H^s$ a neighbourhood of equilibrium can be chosen for which the inequality holds, i.e. the system will be locally stable.

The possibility of instability is graphically demonstrated by Figures 9.5(a) and 9.5(b).

Fig. 9.5(a) shows the stable situation of initial demand for home goods greater than the supply. On the demand side, three movements take place.

1. From non equilibrium point 0, as the result of a price fall, a substitution effect $(-\frac{U^d m^2}{\Delta d})$ takes place causing a fall in demand for H. This effect results in a move from point 0 to point 1, found by drawing a tangent to the same indifference curve at the slope of the new price ratio.

2. The income effect of the price change (a fall in income) is found by drawing a budget line from m parallel to the new price line. Consumption falls to a lower indifference curve at point 2.

3. As a result of a change in supply from 0 → 3 along the transformation curve in the supply quadrant, income rises. Demand rises from 2 → 3. The move from 2 → 3 cannot go beyond the new supply point without setting up a reverse, equilibrium convergent, price change.

The position is thus stable

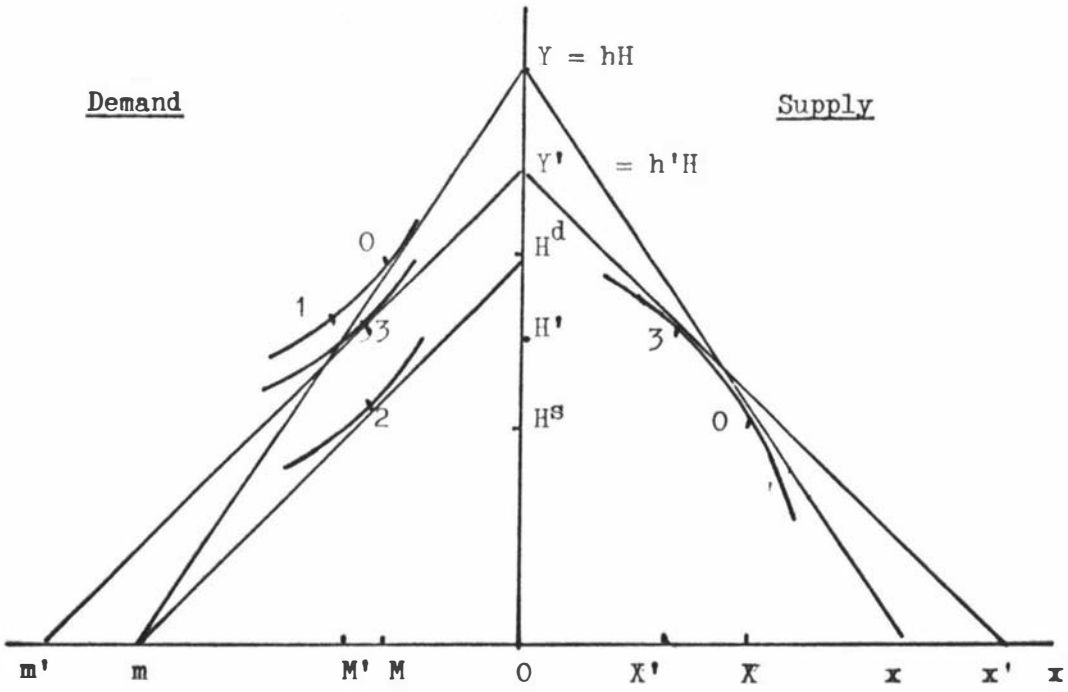
Fig 9.5(b) shows the unusual position of possible disequilibrium when H^s initially exceeds H^d and

$$\frac{(mg_{12} - hg_{22})}{\Delta d} H^s > \frac{U^d m^2}{\Delta d} + \frac{(mg_{12} - hg_{22})}{\Delta d} H^d$$

The negative responses (quantity H rise) to a fall in h, from initial situation 0 → 1 and from 1 → 2 are overcompensated by the positive (quantity H fall) effect from 2 → 3, so that the new position is at a lower level of demand than the original, leading to a further fall in price. It should be noted that, as a result of the fall in supply of H as a result of the move from 0 → 3 in the supply quadrant, the gap between original supply / demand ($H^s - H^d$) is greater than that between the new supply / demand ($H^{s^1} - H^{d^1}$), so that further adjustments (with price effects becoming increasingly strong) will lead to eventual equilibrium, though possibly at a very low income level.

The model is stable if one starts with the assumption of equilibrium before growth and, as a result of growth, marginal changes take place which move sectors marginally away from the equilibrium point.

Fig 9.5 (a) $H^d > H^s$



0 X, 0 H^s	-	post - growth supply of X and H
0 M, 0 H^d		" " demand for M and H
0 Y = hH	-	income/expenditure in terms of H
Ym, Yx	-	price relatives and budget line.

Adjustment

Demand 0 → 1 = substitution effect = $\dfrac{-u^d m^2}{\Delta^d}$

1' → 2 = income effect of price change on demand = $\dfrac{-(mg_{12} - hg_{22}) H^d}{\Delta^d}$

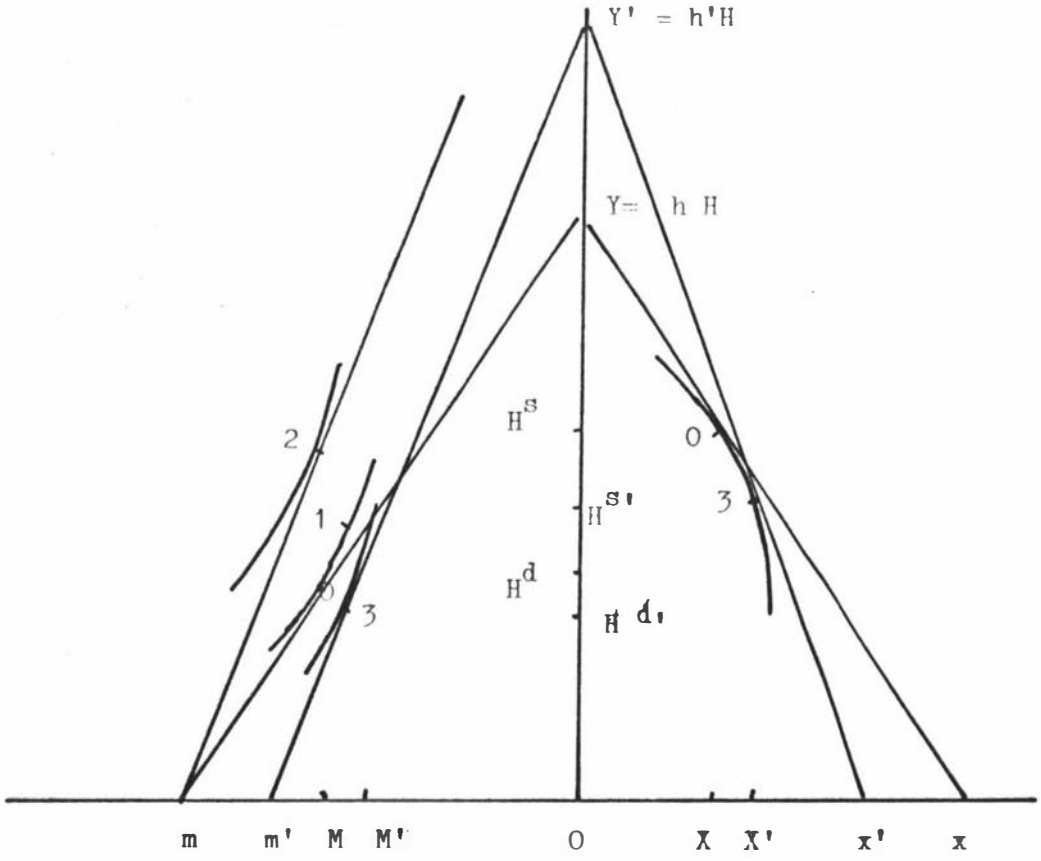
2 → 3 = income effect of change in supply = $\dfrac{+(mg_{12} - hg_{22}) H^d}{\Delta^d}$

Supply 0 → 3 Supply adjustment

Y'x', Y'm' - equilibrium income/expenditure budget lines

OH', OX', OM' equilbrium quantities.

Fig 9.5(b) $H^d < H^s$



OX , OH^s	post-growth supply of X and H	
OM OH^d	" " demand for M and H	
Ym, Yx	price relatives and budget line	

Adjustment

Demand 0 → 1 Substitution effect

1 → 2 income effect of price change on demand

2 → 3 income effect of change in supply

when $\frac{(mg_{12} - hg_{22})\, H^s}{\Delta^d}$ $\frac{u^d m^2}{\Delta^d}$ + $\frac{(mg_{12} - hg_{22})\, H^d}{\Delta^d}$

Supply 0 → 3 Supply adjustment

Y'x' Y'm' - post adjustment income/expenditure line

$OH^{s'} > OH^{d'}$; no equilibrium

Chapter 10.

Import Controls in New Zealand.

Some attempt must be made to relate theoretical analysis to a real situation and the ensuing chapters record the experiences of New Zealand in imposing a variation of trade controls in the 1938-68 period. As with any treatment of historical events, there arise the insuperable problems of selecting the relevant material from an abundance of information and apportioning correct weight to a wide variety of causes which bring about observed effects. The only possible course is to examine the major periods of control, attempt to analyse the effects of policy and try to discover if other policies would have had different effects.

Before 1938, with brief exceptions, the flows of commodities, currencies and investment to and from New Zealand were free from all forms of Government control. The exceptions were in 1920-21 and 1933 when, because of a shortage of reserves, the trading banks 'rationed' foreign exchange to their customers. At all other times, adjustments to fluctuations in trade were made by pressures exerted by the trading banks which :-

(a) Varied the rate at which foreign currencies would be exchanged for New Zealand currency. This meant, in effect, the operation of a variable exchange rate which did not move more than 3 per cent above or below the

official 'pegged' rate. When, after 1930, banks were unable to hold the official rate the £NZ lost value until, in 1933, the 'peg' was adjusted by devaluing from $NZ110 - £Stg. 100 to £NZ 125 - £Stg.100.

(b) Varied the rate of interest on, and the permissive limits of, overdrafts to customers requiring credit to finance imports.

(c) Provided information and advice to consumers concerning present and anticipated prices, exchange rates and exchange availability with a view to encouraging or discouraging expenditure.

The problems of the 30's began when, as a result of the depression, the price of New Zealand exports fell by almost half 1928-1932. Import prices fell much less - only one-sixth - during the same period. The £NZ, which had been at par with the £Stg., had depreciated to £NZ 110: £Stg. 100, but was still clearly overvalued. Farming interests lobbied for a further devaluation to restore their £NZ price; economists (led by H. Belshaw) argued the advantages of devaluation as an anti-depression measure, and the loss of reserves made the exchange rate untenable. In January 1933, the currency was devalued to £NZ125 : ~~£Stg~~ £Stg.100.

By 1934 (December) net overseas assets of the banking system, compiled and published by the newly formed Reserve Bank, stood at the more than adequate level of £NZ 40.5 million. Much of this, however, was in the form of short term investment, left speculatively as a result

of the general belief that the 1933 devaluation had been unnecessarily drastic and temporary in nature.

The decline in overseas assets leading up to the imposition of import controls in 1938 can thus be attributed to two major causes.

(a) Export of capital.

(b) Increased imports an a result of Government expansion policy.

This is evident from an examination of the decline in assets divided into that change resulting from balance of current account payments and that resulting from a decline in capital indebtedness to foreign residents.

Table 10.1 (£NZ m.)

Yr. (Dec.)	B. of P. (current account)	Net Outflow of Capital	Decline N.O.A.
1935	- 1.8	2.6	4.4
1936	+ 0.4	8.5	8.1
1937	- 1.5	2.8	4.3
1938	- 9.0	7.9	16.9
Total	11.9	21.8	33.7

The flight of capital can be attributed to three factors.

(a) As already mentioned, the receding likelihood of exchange revaluation led to the removal of speculative capital. This was most evident in 1936.

(b) The social and economic experiments of the

Labour Government caused foreign investors to view New Zealand with some suspicion. Australia became a relatively 'safer' avenue of investment.

(c) There was some anticipation of controls. Labour policy favoured direct controls of trade and the party caucus discussed their imposition as early as 1936. As a result there was probably some over-importation designed to forestall restrictions and some accumulation of private overseas funds.

The problem of over-importation was the more serious of the two because it promised to be a permanent feature of the New Zealand economy. It arose directly from the full-employment policy adopted by the Government; full employment was achieved by 1937. In the debate on the Financial Statement, Mr, Savage, deputising for Mr Nash,, claimed the establishment of full employment as the most important single achievement of his Government and committed the Government to maintaining this policy permanently. Every Government for the ensuing thirty years accepted as its most important task the maintaining of full employment. Mr Savage acknowledged that the policy involved creating employment in Government service which had the effect of increasing incomes and demand without a similar increase in the production of consumer goods. Government works increased the Government import bill: developing industry increased the importation of equipment and raw materials and increased demand required a higher level of consumer imports.

The extent of the Government involvemnet in expansion can be illustraded by the level of internal borrowing required. The new marketing boards received advances from the Reserve Bank of £5m. (average indebtedness) in 1937 and £4.5m. in 1938. Reserve Bank advances to the State rose from £6000,000 in June 1938 to £11m. in December 1938 and £14.9m. in December 1939.

Thus, in December 1938 New Zealand official overseas reserves had reached a low of £6.8m., having declined from £40.5m. in 1934 at an accelerating rate:-

December 1934 - £40.5m.
1935 - £36.1m.
1936 - £28.0m.
1937 - £23.7m.
1938 - £6.8m.

The policy measures available were:-

(a) Increase in Tariff: This raised the problen of judging accurately the tariff level required to confer adequate protection, the need to impose many different tariff levels for different products, and the further complication of a second column tariff in accordance with the Imperial Preference agreement.

(b) Devaluation: Such an act might have gained a temporary reprieve, but the inflationary pressures resulting from it, coupled with continued full employment, would almost certainly have increased the balance of payments problem.

(c) Deflation: Reducing internal demand levels would have necessitated a lowering of income levels and the acceptance of a level of unemployment which was quite unacceptable.

(d) Imposition of Direct Import and Exchange Control: Inevitably, this was the policy which was adopted. The period of the Great Depression marked the complete failure of the free-trade mechanism to restore equailibrium. The failure may not have been with the mechanism itself but with the willingness of individual Governments to accept its operation. Contributing to the post-1929 decline in world trade (by some 40% by 1935) were the unsatisfactory peace settlement of 1919, the animosity caused by reparations payment and non-payment, the failure of the Young and Dawes plans, Britain's abandonment of the Gold Standard, the Hawley-Smoot tariffs, the rise of nationalism in Germany, Italy and Spain, the impotence of the League of Nations and a whole tangle of subsidiary policies and measures which restricted the ability and willingness to trade. In effect, every nation was trying to export the effects of depression to everyone else with the result that everyone suffered more.

A country of New Zealand's size, unable to influence world affairs, was forced to make the best of a bad job and institute a set of policies which would reduce suffering to a minimum. By 1937, the following situation had arisen.

Export Prices - (1929 = 100) declined to 54.9 in 1932 and even after the 'recovery', were still only 79.9 in 1939.

Import Prices - (1929 = 100) declined only to 87.3 in 1932 and were at 92.5 in 1939.

Value of Exports - Fell from $108.9m* in 1929 to $68.7m in 1932, recovering to $112.8m in 1939.

Value of Imports - Fell from $88.6m in 1929 to $44.8m in 1932, rising to $102.1m in 1937 (the last 'free' year).

Unemployment - The best indicator is the number of unemployed male wage and salary earners which, in the 1926 census showed 3.4% and in 1936 showed 9.6%. The 1932 figure was probably around 12%.

Overseas Assets - No figures are available before assets were centred in Reserve Bank funds in 1934, but from then onwards a spectacular decline is evident :

December	1934	$81.8m
"	1935	$72.6m
"	1936	$58.6m
"	1937	$47.4m
"	1938	$15.2m
"	1939	$32.8m

Consumer Price Index - (1929 = 100) Fell to 79.1 in 1933 and recovered to 94.7 in 1938.

* Note. It is convenient at this point to begin expressing all values in $N.Z. terms, using £1 = $2 as the conversion rate.

The comparison with the theory analysis is with a situation like Case 10 on Page 102 - growing unemployment, falling internal prices, rapidly falling export prices and growing deficit in trade. Free Trade does not offer a solution; balance depends on autonomous change overseas and the indications in 1937-38 were not favourable to a sudden and prolonged upsurge in trade. Had New Zealand left trade free, there is every indication that the situation would have continued to deteriorate.

The case for tariff was not strong. In the absence of a well-developed manufacturing sector in New Zealand, the price elasticity of demand forimports was very low and a comparatively high tariffwould be required to have the necessary impact. By contrast, the growth elasticity of demand for imports of consumer durables, investment goods, etc., was high. Any benefit accruing from tariff was likely to be short-lived. To the extent that imports included investment goods, it might have had a discouraging effect on the development of internal manufacturing. Most important, the use of tariff did not guarantee the maintenance of full employment and still left New Zealand vulnerable to the external influence of fluctuating fortunes in Europe. One must conclude that, in the circumstances given in 1938 the imposition of Import Controls was justified, certainly as a short term measure.

The theoretical analysis, however, sounds a very clear warning. As soon as full employment conditions

are established, the expansionary pressures of Import Control are very strong; it is just as important to dismantle control to combat over-employment as it is to use them to prevent under-employment.

No judgement can be made about the success or failure of the pre-war control, because there was only one full year of controls before the war introduced a totally new set of trading conditions. Imports did not decline significantly (from $102.1m in 1937 to $100.8m in 1938) and, because export earnings fell by $16.3m, the trading surplus actually fell. The decline in exports was mainly due to the European relapse into recession after the partial recovery of 1937. The failure of controls to reduce import levels was due largely to two factors.

1. Importers placed excessive orders in late 1937 in anticipation of controls and imports from January-April, 1938, were abnormally high.

2. The administrative machine was unable to cope with the volume of applications, hearings and appeals; as a result licences were issued with more leniency than had been the intention.

On the positive side it can be claimed that the rising import demand levelled off - an indication of at least partial success. With a year or two of administrative experience, there is no reason why the policy s should not have been effective in maintaining external balance.

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Export Licence Regulations	Order in Council 1938/160
Sterling Exchange Suspension	Order in Council 1938/166

Chapter 11.

Introduction of Controls.

Three statutory regulations came into force on the 7th December 1938.

Export Licence Regulations	(1938/160)
Import Control Regulations	(1939/161)
Sterling Exchange Suspension	(1938/166)

From that date all imports were subject to licence and all exports were licensed in order that proceeds from their sale be paid to one of the trading banks (or agent) for transfer to the Reserve Bank in exchange for New Zealand currency. Exceptions were goods sent overseas via the Post Office, ships' stores and travellers goods intended for personal use or consumption. Foreign exchange ceased to be freely available and was to be sold only to those having a legitimate use for it. With the exception of temporary regulations prohibiting wartime trading with the enemy, these regulations formed the basis on which Import and Exchange controls have been built.

A number of guiding principles were announced.

1. Overseas funds were to be safeguarded.
2. Provision was to be made first for essential imports - raw materials for industry and other goods not available in New Zealand.
3. The selection of goods to be imported was to be

made with a view to co-ordinating the use and increase of production of consumer goods in New Zealand and to promote internal development.

4. Preference was to given to goods of United Kingdom origin.

5. Trade agreements based on earmarked exchange were to be promoted.

6. New Zealand was to be insulated against unfair competition.

7. The standard of living was to be steadily improved without the depletion of overseas funds.

Administration:

The issue of licences was to be controlled by the Customs Department which consulted the Department of Industries and Commerce on matters which affected availability of home produced goods and industrial development. The issue of exchange was in the hands of the trading banks, acting on behalf of the Reserve Bank.

Licences were initially issued for six-monthly periods, specified commodities, origin and value of imports and the time period during which the licence was valid. Licences were nontransferrable between licensing periods, commodities or origin, The six-month period proved too restrictive and after 1941, licences were granted for a calendar year.

At first, trading banks were permitted to grant up to $50 without Reserve Bank approval. Remittances of $10

Post Office money orders per week were permitted. These avenues of payment were used so freely that in March 1938 the banks were restricted to only one $50 grant per applicant and the money order allowance was reduced to $6.

1st Period January-June 1938 :

There was only one full licensing period before the advent of war changed normal trading conditions. As it was a period when administration, traders and producers were trying to adjust to a new system, there were many frustrations and compdaints, and considerable evasion. The result was that the first licensing period met with little success in remedying the trading situation. A comparison of the January-June trading figures of 1938 and 1939 shows that New Zealand's balance of payments position did not improve.

Table 11.1.

	Value ($m)		
	Imports	Exports	Balance of Trade
January - June, 1938	54.2	74.6	20.4
January - June, 1939	56.2	73.6	17.4

The failure of overseas assets to build up can be attributed to a number of causes.

1. Trading Banks: There was either a lack of co-operation between the Customs Department and the banks or

a deliberate attempt by the banks to satisfy their customers' wants rather than enforce a stringent control over allocation of foreign exchange . In the first months exchange was too freely granted, expecially the $50 allowances, which assisted the flight of capital into private reserves. As a result, by March, the banks were seriously short of funds and were compelled to refuse funds even for legitimate purposes. For, example, legacies which had received Reserve Bank approval were denied transfer funds. More serious was that some importers found themselves with licences which were valueless because funds were not available. Some were denied funds altogether, some were forced to adopt a deferred payment system, clearing their debts as the banks were able to grant funds. The trade improvement of the early war period made this possible.

Table 11.2

Net Overseas Assets	1937	1938	1939
December (end of previous year)	28.1	47.4	13.6
January	57.2	46.0	14.6
February	62.6	51.2	18.2
March	64.8	53.2	18.6
April	73.0	57.2	19.0
May	74.8	56.2	14.8
June	74.0	52.2	18.2

2. Excess Orders: In anticipation of control, importers had placed orders in late 1938, for delivery in 1939, trusting that licences would not be denied for goods in transit.

3. Excess Claims: Importers naturally claimed more than their requirements, and appealed against decisions. As both original application and appeal often needed to be referred to Industries and Commerce, this meant administrative delays and some hasty decisions.

4. Full Use of Licence: Importers used licences to the limit, partly to ensure that goods arrived before expiry of the licensing period, partly to guard against the possibility of receiving a reduced allocation in the following licensing period.

5. Administrative Problems: Although the imposition of controls had been foreseen by many, the administration was not prepared for the sheer volume of paper work involved in classifying items, dealing with applications, issuing licences and hearing appeals. The accumulation of a backlog of work resulted in inadequate consideration of cases, some inequity and some excess allowances.

Complaints

Many of the complaints and criticisms voiced in 1939 were either frivolous or exaggerated; many were real, but could be attributed to lack of experience or over-work of the administration, faults which time would cure. The most important valid objections, made almost entirely by

importers through the Chamber of Commerce were:-

1. Because unexpired licences could not be carried over to a succeeding period, there resulted the ordering of unnecessary stocks which reduced overseas funds available for goods required for current use.

2. The Customs Department did not issue a list of classified or prohibited goods until April, so that importers were unable to guess what they might or might not be granted.

3. Granting of exchange authority by instalments made it difficult to arrange credit overseas and to adjust shipping requirements.

4. The non-transferrability of licences led to overstocking in some lines and shortages in others.

5. Discrimination: Large firms, sending personal representatives to support applications or defend appeals received more favourable treatment than the anonymous firm represented by a piece of paper.

6. % Allocation: Basing licences on a proportion of 1938 imports did not represent a comparable restriction on what would, in normal circumstances, have been imported in 1939. No allowance was made for changes in the pattern of demand.

7. New Enterprises: No allowance was made for new firms or new commodities.

8. Private Funds: Those fortunate, or unscrupulous, enough to have built up private funds overseas had an

advantage over the less fortunate trader.

By contrast, the Manufacturers Associations expressed general approval of the Licensing system. Apart from general warnings of the dangers of over-expansion, fear of higher prices and lack of choice, there were no specific complaints.

Sources:

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Summary of :

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	May	1938	pp. 8-10
	July	1938	pp. 8-10
	January	1939	pp. 2-5
	February	1939	pp. 2-4
	March	1939	pp.10-11
	May	1939	pp. 9-12
	November	1939	pp. 6-7
National Review.	January	1938	pp.12-14
	April	1938	pp.44-47
	June	1938	pp.38-41
	November	1938	pp.48-49
	January	1939	pp.39-40
	February	1939	pp.15, 19-20
	December	1939	pp.51-52

Chapter 12.

1939-1945 The War Period.

War conditions imposed a set of restraints on trade which were quite distinct from the original reasons for the introduction of import controls. War demand turned the terms of trade in favour of primary producers, while the requirements of the major belligerents drastically reduced the supply of imports available to New Zealand. The shortage of shipping space and the dangers incurred in sea transport prevented the shipment of everything except essential materials. Trade with the enemy was forbidden and was channelled much more towards Britain.

An examination of this period is outside the scope of this work, which is concerned with the effects of import control as a selected policy when other policies are possible. War conditions alter policy priorities so that all considerations are subject to the major aim of winning the war. Thus, although import controls were more severe 1939-45 than at any period before or since, the reasons for their imposition were strategic rather than economic. The balance of payments and full-employmmnt motives no longer existed.

However, although of no direct relevance to a study of import controls in New Zealand, wartime controls had a number of effects which influenced subsequent import policies.

Acceptance:

After the war, all sections of the population were much more prepared to accept restrictions which would have been strenuously opposed in normal times. There were innumerable complaints during the war concerning the administration of the regulations - delays, misallocation, etc., but no question of the need for controls. Thus, a policy, which in 1938 was new and regarded in many quarters as unnecessary and unacceptable, was by 1946 an established practice and had become the normal. In the post war period, therefore, it was possible for the Government to maintain a system of controls which might have been more vigorously opposed in normal peacetime conditions.

Bulk Purchasing:

Because each importer had reduced orders, could not guarantee consistency in ordering from year to year and could not be expected to understand the complexity of import export and exchange regulations, the overseas agent became a much more important figure, buying in bulk on behalf of many small firms. Government control of shipping, both for export and import, increased this tendency. Trade became much more the province of direct Government dealing or dealing by Government approved agents. The lend-lease agreements with the U.S.A., for instance, involved the circumventing of normal trade negotiations. By 1944 the four largest importers in New Zealand were the Ministry of Supply, Public Works, Railways and the Post Office.

The Government did not squeeze out the private dealer. On the contrary, all orders were placed through private firms. But the trader's function became more that of an agency for public purchase and distribution than of a dealer on his own initiative.

Rigidity:

There was little room for change or experiment in the type of goods, their source or buyer. Commodities were those available from the limited surpluses of Britain, U.S.A., Australia. Established importers were unable to obtain adequate supplies, so there was no opportunity for a new trader to obtain a licence. Most were obtained from overseas at prices fixed by inter-Government agreement and sold in New Zealand under price control regulations, so that there was little of the competitive element which might have changed the membership of the importing group.

Allocation:

Commodities were classified into three broad categories. The eighth licencing period (January-December 1944) included, for example, the following:

Basic Items: These were commodities for which there was a comparatively stable demand which could readily be anticipated. Importers received allocations based on the value of their 1940 imports. They included wines, spirits, tobacco, tea, books, thread, yarn.

Control Items: No basic allocation was made because it was either difficult to predict the level of demand a

year ahead or to predict the supply available from New Zealand sources or difficult to predict the availability of overseas supplies or shipping space. Allocations were made on application by importers. This group included a wide variety of items;- grain, seed,coffee, cocoa, fruit, chemicals, leather, glass, electric lamps and cookers, metals, oil timber. Needless to say, it was this category which involved the administration and traders in a multitude of decisions, paper work, delays and frustrations.

Excluded: Some goods were totally excluded on the grounds that they were either non-essential commodities or that an adequate supply was available in New Zealand. The group included vegetables, confectionery, fish, matches, soap, cigarettes, beer, most clothing, shoes, jewelry, ink, lawm movers, radios, vacuum cleaners, washing machines, a wide variety of electrical goods and most house construction equipment. These restrictions encouraged the foundation and growth of the New Zealand electrical, clothing, shoe, porcelain and machine industries whose existence made a strong argument for the continuation of protectionist policies of the post-war period.

The wartime period is of no significance as a study of the effectiveness of controls, but is is important in that, by 1948, a set of conditions had been created which enabled the New Zealand Government to choose any one of a number of policy alternatives.

The conditions were:

(a) Trading surpluses were substantial and continuing shortages in Britain and continental Europe lent reasonable confidence to the view that demand for New Zealand exports would remain high and that terms of trade would be favourable.

(b) Overseas assets were high, although, with the rest of the sterling area, New Zealand faced a dollar shortage; in addition, the relative size of the external debt was far lower than it had ever been in New Zealand's history.

The advent of the Korean War and its accompanying boom actually increased New Zealand's trading advantage and the years following 1948 were very prosperous.

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Chapter 13.

Post War.

The immediate post-war period was a very confused one. Some of the wartime problems - shipping shortages, dollar shortage,, supply dislocation - continued for some years. The original reasons for the imposition of controls - low overseas funds, trading imbalance, fear of unemployment - had disappeared, but new reasons, newly established industry and the requiremnets of the sterling area, had arisen. Opposition to control was becoming stronger in commercial quarters while, at the same time, there had grown up a strong group whose interest lay in the continuation of import control. Added to this was the confused state of the world, with no-one able to predict the developments of the ensuing year or two. With Governments unsure of the international trading situation, it is understandable that traders, ignorant of conditions, found restrictions both irksome and incomprehensible.

There was some dissension about the adequacy of overseas reserves. They had risen from $N.Z.13.6m in 1938 to $N.Z.189.8m in 1945 (December), sufficient to cover more than one year's import requirements at existing levels. Commercial interests were eager to obtain access to these reserves. On the other hand there was a back-log of import demand estimated at $N.Z.120m and an annual debt servicing requiremnet of $46.00m. There was thus a reasonable fear that the abolition of controls would

exhaust present reserves and the demand for imports would be sustained at a level which could not be met. When one considers that the volume of exports in 1945 was, in fact, 8% lower than that of 1937 this fear had some justification. The healthy state of reserves was largely due to the artificial controls and supply restraints of wartime and to the favourable prices enjoyed by primary products during the war period. There was every reason to believe that the normal demand for imports would exceed the pre-war level and that, with controls removed, the accumulated reserves would soon dwindle away.

The year 1946 was, not surprisingly, one of some confusion, with considerable conflict of interest.

One argument centred on the 1938 White Paper Agreement between Great Britain and New Zealand under which New Zealand undertook to remove as soon as possible all controls relating to Britain. After the war, Britain was eager to re-establish lost markets and New Zealand importers argued that New Zealand was morally bound to help Briatin in her efforts to re-establish a strong trading position. Britain's promise to accept all food exports New Zealand could supply for the ensuing four years (1946-1949) strengthened the demand.

In answer to formal complaints from the Auckland Chamber of Commerce in June 1946, Mr Nash made statements which summarised Government intentions.

(a) Full controls were to remain in order to protect

New Zealand industry from imports of United Kingdom goods which prevented full opportunity of reasonable competition.

(b) Controls would be used to encourage the establishment of industries requiring some protection from competing imports.

(c) Controls would not be used to foster uneconomic industries.

Nothing can illustrate the confusion of the early post-war period more than the above statement. The fact that (a) contradicts itself and that (c) contradicts both (a) and (b) does not seem to have disturbed the policy makers of the post war period. A list of some of the more justified complaints, made during 1946, is worth examining. Many more complaints were, of course, received but are disregarded as being trivial or of interest only to the individuals concerned.

Extension of Licensing period:

The 1945 period had been extended to January 31st for firm orders from Great Britain only. When the 1947 Schedule was published, it was announced that, because of shipping and administrative delays, the 1946 period would be extended to March 31st, 1947 for firm orders placed and accepted before November 1st, 1946. This announcement brought a storm of protest from two groups.

(a) Some importers had firm orders placed, but because of administration delays, had not yet received and were

uncertain of a 1946 allocation. Should they proceed with importing arrangements in anticipation of receiving a 1946 licence? If they proceeded and did not obtain a licence, they might be using up some of their 1947 quota. If they delayed they might miss the opportunity of using up the quota allowed them.

(b) The supply position, particularly of British manufactured goods, was so uncertain and subject to such delays that it was by no means certain that orders placed before November 1946 would be filled by March 1947. Thus importers, through no fault of their own, failing to use up 1946 licences, were forced to use 1947 licences for orders placed the previous year.

The Auckland Chamber of Commerce listed the major complaints of its members and made a series of requests:

(a) There was confusion over classification of items. The Chamber requested that lists of items of various classes would be made available so that importers did not make unnecessary, frustrating applications for excluded commodities or missed the opportunity to apply for controlled items.

(b) Administration was too centralised. Local customs officials should be permitted to issue licences for goods listed in short supply in their area.

(c) Administrative delays meant that importers missed trading opportunities through not being able to place orders when goods were available.

With sources of supply uncertain, this often meant that a licence received late was valueless as orders could not be placed before the licensing period expired.

(d) Licences were still issued with respect to value of imports in 1938 and totally neglected price changes, freight charges, population increase and changes in the pattern of demand.

(e) Licences were withheld in order to protect new industries (e.g. aluminium, carpet sweepers). This adversely affected established traders.

(f) New importers - notably returned servicemen - were being granted licences too liberally. This meant even less for the established traders.

(g) There were insufficient licences issued to meet the demand for:- footwear, aluminium, enamel, china, glasses, logs, carpet sweepers, motor spares, tools, cisterns, sinks, baths, hardware.

An example used to illustrate (d) was that an application for an increase in the import of glass rod for scientific laboratories was refused, The original quota was based on the 1940 requirement, although by 1946 demand had tripled; glass rod was not produced at all in New Zealand.

In November 1946 it was announced that the allocation for all items listed under (g) had been increased.

Hardware and Building Trade:

A report on the effects of the tenth (1946) licensing period included the following complaints from the Hardware, Building, Engineering and Machine Traders:

(a) Allocations were generally insufficient to meet requirements.

(b) Post war housing development, attempting to make up for war-time backlog of building, and to rehouse returned servicemen, was held up because import allocations for hardware were based on pre-war levels of building pre-war requirements for houses and pre-war prices.

(c) Carpenters could not get tools.

(d) There was a total import prohibition of baths, basins, sinks etc., unobtainable in New Zealand in sufficient quantity and of poor quality and high cost.

(e) Engineering supplies had been insufficient for five years and operations were being carried on with worn and obsolete equipment. Unless import restrictions were released, production would be seriously hampered.

(f) There were insufficient consumer durables to meet the heavy demand of returned servicemen - e.g. the trade was short of several thousand lawn-mowers.

Motor Trade:

The Motor Trader's Association complained that the 1946 licences were totally inadequate to meet the huge demand thwarted by the war. They represented 75% of the 1938 value of imports - only 40% of the 1938 quantity of cars. Pre-war imports were:-

1937 - 30,000 cars

1938 - 27,500 cars

1937 - 22,000 cars

The allocation would permit 8,000-9,000 cars to be imported although present demand was far in excess of the pre-war demand.

A serious grievance was that the 1947 schedule was not published until September, 1946, leaving importers a quite inadequate three months in which to apply for licences, obtain funds, place orders and secure shipment of goods required early in 1947.

In an address to the New Zealand Chamber of Commerce conference, Professor A.H. Tocker summarised the arguments of those who, while recognising the problems, disapproved of the use of import control as a method of handling the situation. He pointed out that, although export receipts were rising ($200m in 1946 compared with $160 m in 1945) and were almost double the $114m receipts of 1938, imports were only $130m compared with $100m in 1938. Because of increased Government importing the value available to private traders was actually reduced.

He acknowledged that $186m of accumulated overseas funds was inadequate in view of Government imports and debt requirements currently requiring $174m per annum. With a free exchange rate, the surplus would swiftly disappear. He further recognised the problems of the post-war period when production and trade were unsettled, shipping space limited and sterling weak.

Professor Tocker still questioned the need for commodity restrictions to solve an exchange problem. He advocated the use of exchange control as the only restriction. Exchange should be allocated first to Government requirements, secondly to essential investment and consumer goods and any residue should be rationed out to importers for them to use as they wished. In this way, the composition of imports would be determined by market forces rather than by bureaucratic decisions.

Administration:

Most of the complaints lodged in the ensuing years were aimed atthe administration of controls, and illustrate that the sheer volume of work involved in operating the system meant cost, delay, inconsistency and some injustice. The fact that licences were still issued on the basis of 1938 import values meant that in each succeeding year the composition of imports became less related to existing demand.

The amount of paper work involved can be illustrated hy the need to issue regulations not only for each item,

but for different varieties of items. For instance, in the 1947 regulations, licences were permitted for the import of toilet paper in rolls but not in other form, for cabinet handles but not for cabinets (which were made in New Zealand); for rubber tyre repair outfits, but not for rubber tyres, and for buckets (galvanized iron only) - the list is endless. These decisions were either made arbitrarily, with little consideration for market requirements, or involved an inconceivable amount of research and discussion.

Regulations under the Industrial Efficiency Act were used to control home production and were operated in conjunction with import controls. One item of contention - the production of footwear - was limited to those manufacturers holding licences under the act. Although only three new production licences were issued between 1943 and 1947 and there was a severe shortage of footwear, new licences were refused on the grounds that the shortage of labour and materials kept existing producers operating plant below capacity. At the same time, applications for increased import licences were refused in order to protect home producers.

The danger inherent in a slow-moving bureaucratic system is illustrated by the situation early in 1948. The estimated export revenue for 1948 was announced in April as $288m compared with $258m for 1947; a very healthy increase. In the same month Mr Nash announced that imports were to be curtailed from the $230m of 1947 to

$ 190m for 1948, because 1947 imports had been excessive.

One month later, Mr Nash revealed that, in fact, $218m licences had already been issued, exceeding the amount intended, and he expected total licences to reach a value of $260m by the end of the year. In order to keep imports down to that level, he announced that no more licences would be issued for motor cars or non-essential consumer goods.

Clearly the administrative machinery adjusted its operations slowly in reaction to policy changes which, in turn, were made some time after events, In fact, the trade balance of 1948 was so healthy that New Zealand was able to repay a $48m loan optionally due in London.

By 1948 the attacks on import controls had changed in character from complaints and charges of inefficiency to organised demand for reform of the system. The most important changes requested were:

Irrevocable Licences:

Many goods, especially machinery and transport equipment, needed to be ordered two or three years before delivery date and importers required assurance that orders placed in 1948 would be honoured in 1950 or 1951. The request was refused on the grounds that an importer must feel confident of having a licence in the year of delivery; each case was treated on merit, no previous guarantees could be issued, but if an import were justifiable, the trader could confidently expect to be granted a licence.

Special Licences:

(a) An importer who placed orders on the strength of a valid licence but, due to delivery delays was left with unused licences to the value of those orders at the end of the licensing period, should receive replacement licences of that value for the ensuing licensing period.

(b) Goods sometimes arrived in excess of licence as a result of deliberate over-ordering. Fines of $200 to $400 were imposed on the importer, but extra licences were granted to keep faith with foreign suppliers; these licences were not chargeable against the succeeding year's licence allocation. In effect, an importer could increase his allocation on payment of a fee, which was worth his while if demand were sufficiently high.

The Comptroller of Customs reiterated (in October 1948) that the policy of the department was that excess imports were charged against the licences of the next year. To avoid the December shipping congestion, now becoming an annual feature to obtain delivery before the end of the licensing period, the delivery period was extended to February 28th 1949. However, the announcement in October, came too late to prevent the congestion as most of the goods were already in transit by then.

Transferable Licences:

Licences were sometimes issued for goods which were not immediately available at souce of supply, leaving the importer with unused licences for more than he required of a particular commodity, but tended to order to the limit of his allocation for fear that he might receive a reduced allocation the following year. Both anomalies would be resolved if licences were transferable to other commodities or subsequent licensing periods.

Board of Trade:

In August 1948 the Associated New Zealand Chamber of Commerce recommended that an independent Board of Trade be established with advisory, judicial and appellate function to investigate, report and make recommendations to Parliament on:

(a) Customs tariff.

(b) Selection and licensing of imports as long as the system was to continue.

1949 Schedule:

Presumably, as a result of the pressure for reform, there were some changes in the licensing schedule for 1949.

Because of the increasing difficulties of the sterling area, there was a total cancelling of licences for the dollar countries.

Token licences, up to 20% of the value of 1938 imports, were to be issued for the import of non-essential

goods to maintain or revive trade links and to permit import of new commodities, The year 1948 replaced 1938 as the base year. Predictably,, there were complaints about the selection of base years. The main complaint came from extablished traders who had been considerable importers before the war. They viewed with dismay an Act which regularised the position of returned servicemen who had been granted comparatively generous rehabilitation licences which now formed the base for their future allocation.

Survey of 1938-1948:

Two serious attempts were made to review the effects of ten years of control, one by Professor A.H. Tocker in June 1949, and another in August by A.R. Wilson.

Professor Tocker, quoting Professor Condliffe, said:

"Bulk purchase agreements betweem Governments constitute a far more effective obstacle to freer multilateral trade than the network of Imperial Preference. It is a reasonable bet that British people would have as much butter, more meat and a bigger dollar pool if New Zealand dairymen were allowed to buy American tractors".

Professor Tocker emphasized the unsatisfactory exchange situation which had led to the imposition of controls in 1938 and compared the relative internal and external monetary situations in 1938 and 1948, presenting

the following table.

Changes in Internal Money Volume and Exchange Funds.

	Internal Money (a)	Exchange Funds (b)	Increase in Money from 1937	Increase in Exchange
1937	80.3	30.0	-	-
1939	82.8	8.6	2.5	-23.4
1946	208.5	96.6	128.2	66.6
1947	216.9	92.9	136.6	62.9
1948	227.0	63.4	146.7	33.7

(a) Dep. and Notes of Reserve and trading Banks

(b) Bank assets held overseas.

The growth in overseas reserves, though considerable, had not matched the growth in internal money, and foreign exchange was not adequate to meet the demand which the freeing of trade would release. However, Import Control was not successful in helping to accumulate foreign exchange, but did contribute to the inflationary pressures which necessitated the expansion of internal currency. Professor Tocker recognised the need for the continuation of exchange control but maintained that import controls were ineffective and distortionary in their effects.

A. Wilson analysed some of the indirect effects of controls particularly the growth of industry.

In agriculture (1930-44) there was an absolute reduction in the number of persons engaged - males from 119,000 to 113,000 females from 19,000 to 11,500.

One result was that the mechanisation of farms had increased by 400%. The volume of farm production 1938/39 - 1946/47 increased by 10%. There is, of course, no way of determining how much of the drift to towns was part of a natural process and how much it was stimulated by the growth of protected industry.

In industry, for the period 1937/38-1946/47 increases were:

Volume of Production - all factory	40%
True Manufacture - secondary industry	46%
Production per person	6-7%

Employment 80,000 (1934/35) .....108,000 (1939/40).. .... 134,000 (1946/47).

Number of factories 6,132 (1938).....7,642 (1947).

Mr Wilson enumerated a number of criticisms of the administration of controls, some of them by now tediously familiar.

(a) Administration was inadequate to cope with the volume of work. Delays of three months were normal; appeals against decisions increased delay.

(b) The Department of Industries and Commerce handled thousands of applications in addition to Customs Department.

(c) Importers were forced to delay orders because of uncertainty of future allocation.

(d) Importers found it difficult to time their orders to coincide with New Zealand import regulations and the British export regulation requirements,

under which most of their suppliers operated.

(e) The buraucracy could not forecast market requirements or accurately estimate home production. Some commodities were in over supply, some short.

(f) 'Satisfactory quality and reasonably competitive price' the criteria under which local products received protection - were meaningless phrases, interpreted in the interests of politicians and producers rather than in the interests of consumers.

(g) In making allocations, no allowance was made for new or progressive firms; an importer's share was dependent not on present requirements, but on the pre-war size of his firm or his claim as a returned serviceman.

The revaluation of the New Zealand currency in August, 1948, is an event which has little direct bearing on the history of import control, but which does illustrate the conflict of various policies. The revaluation, by which the £N.Z. returned to the pre 1930 parity £N.Z.100 = £Stg.100 was made on the grounds that:

(a) The terms of trade were now strongly in favour of New Zealand. Foreign demand for primary products was high and increasing the price to the foreigner (further improving terms of trade) would increase the trading surplus.

(b) The increase in import demand resulting from decrease in import prices would be more than offset by increased export earnings.

(c) The possible internal deflationary effects of revaluation which might ensue if the forecast of (a) and (b) proved erroneous, would not be harmful because employment levels (and consequent inflationary pressures) were excessive.

(d) Reserves were sufficiently high to repay outstanding debt commitments and withstand any drain ensuing on revaluation.

There seems to have been some doubt about the possible consequences of revaluation and presumably Import Controls were maintained for the ensuing years in order to see what happened. It would not have been easy to remove controls in 1948 and then be forced to re-impose them at a later date. On the other hand, the arguments (a)....(d) above indicate that an alternative and perhaps preferable policy might have been to remove controls first and considered revaluation after the effects of "free" trade had been felt.

The subsequent (December, 1949) devaluation of sterling, to which the New Zealand currency was tied, served to confuse the issue again. From New Zealand's point of view it tended to increase the dependence on the British market; Australia's trade, for instance, became geographically much more widely dispersed, partly because of the nature of her exports, but also partly because her (un-revalued) currency (£A125 - £Stg.100) made her prices more attractive than New Zealand's. Certainly Australia's manufacturing development in the 1950's owed something to

to her exchange rate. As already indicated (pages 210-218), there was considerable pressure, particularly from traders and academics, for the dismantling of controls during the period 1947-49, and to return to what would have been a near free trade system, subject only to low tariff with Commonwealth Preference and control of exchange availability, particularly of non-sterling currencies.

Government was unwilling to relax controls for a number of reasons:

(a) The current affluence was the result of unusual war and post-war conditions and it was considered unwise to jeopardise reserves when future conditions were unpredictable.

(b) There was considerable unsatisfied consumer demand - according to A.H. Tocker approximately $200m. Abolition of controls could well have led to a flood of imports which would have drained all existing reserves.

(c) During the preceding nine years a number of industries had become established to fill the gap created by inadequate imports - footwear, clothing, building materials, consumer durables, lawn-mowers, etc., were now being produced in considerable quantities - but were not yet sufficiently developed to be able to compete freely with foreign producers. The dismantling of controls might lead to unemployment in these industries and wastage of capital equipment.

Argument (c) is the important one in that it indicates that the raison d'etre of continuing Import Control was no longer to be primarily for the preservation of external balance, but for the protection of developing industry and the maintenance of full employment.

In August 1948, the New Zealand Government made what, from the vantage point of twenty years ahead, now seems to be a somewhat extraordinary decision. The favourable trading and currency situation persuaded government to revalue the New Zealand currency (currently £NZ 125 - £Stg.100) to bring it into parity with the British pound; Australia remained at £A125 - £Stg.100. Uncertainty for the future prevented government from relaxing import control. A few months later (December, 1949) Britain devalued by 33% (from £Stg.-= $U.S.4.2 to £Stg. = $U.S. 2.80) and the rest of the Sterling Area, including Australia and New Zealand, followed suit. The New Zealand action was effectively the same as removing a tariff of 25% but maintaining quantitative controls.

This policy act had a number of effects which cannot be reconciled with the avowed aims of government.

1. The reduction of import prices (in internal currency) increased the already excessive demand pressures.
2. Newly established industry, unable to compete with foreign producers, was placed at a price disadvantage to foreign imports.
3. Any potential export of processed or manufactured goods was thwarted by the price disadvantage;

export industry received exactly the reverse of the incentives granted by the 1967 devaluation.

It is interesting to speculate what might have happened had the decision been to leave the exchange rate unaltered, giving an effective 25% tariff, and dismantling import control; some additional tariff or selective control might have been retained to protect 'desirable' industries. The theoretical analysis gives some indication of what might have been. Case 3 (Page 97) perhaps presents the situation best. With high, over-full employment demand pressures persisting throughout the period, tariff permits a six-year adjustment period even in the absence of growth in foreign demand. It is reasonable to assume that, with the expansion of foreign demand duringthe fifties, especially during the Korean War period, New Zealand might well have enjoyed a period of ten years or more of current account surplus. During that time, manufacturing would have enjoyed the protection afforded by 'tariff' in the internal sector as well as the advantage of a favourable exchange rate in the international market. This is particularly apparent in the trading relations with Australia. During the twenty year period (1948-67) imports from Australia grew from $27m (c.d.v.) to $150m - from 11% to 19.9% of total imports. Exports to Australia during the same period rose from $6.8m (f.o.b.) to $35.2m - from 2.3% to 4.8% of total exports. The export growth was largely due to the Australian requirements of timber and wood products which, by 1967, accounted

for $16.8m, almost half, of our exports to Australia; otherwise only wool and fish contributed significantly to earnings in this market. By contrast, Australia was sending us textiles, chemicals, metal products, electrical machinery and fittings, and motor-cars. Australia enjoyed a manufacturing price advantage over New Zealand until the devaluation of 1967.

The development of New Zealand industry was almost entirely for the internal market; while G.N.P. rose by 192.4% (current value 1948-67), Total Factory Production measured by value added, rose by 366.8%. Some of this was accounted for by new products - car-assembly, radio and T.V. etc., by a random selection of internally oriented industries illustrates the growth of this sector.

Table 13.2 Value added in Manuf. $NZm.

Commodity	1948/1949	1966/1967	% Growth
Brewing	3.6	17.1	369.4
Biscuits	1.6	5.5	369.4
Fruit. Veg. Pres.	1.3	11.1	722.6
Hosiery/Knitting	4.1	15.6	281.6
Clothing	15.2	41.9	176.2
Footwear	5.2	14.7	184.8
Furniture	4.8	18.0	271.6
Soap	1.2	3.7	309.6
Pottery, China	9.1	27.2	197.5

Much of this growth was the result of natural development, increasing internal market and the policy of full employment. Undoubtedly, however, the growth was to some extent fostered by the partial exclusion of foreign goods. The conclusions of the theory analysis, that controls impose additional pressures on production of internal and importable commodities seem to be valid.

Sources:

1.	Summary:-	N.Z. Commerce	November 1946	pp.21-23
		" "	December 1946	23-24
		" "	February 1947	33
		" "	August 1947	37-38
		" "	December 1947	27-29
		N.Z. Nat. Rev.	September 1945	27-28
			April 1946	45-46
2.	White Paper.			
3.	Letter to Auckland Chamber of Commerce.			
	(see N.Z. Comm. Journal)		June 1946	pp37-39
4.	1947 Import Licensing Schedule		September 1946	
5.	N.Z. Commerce		March 1946	pp37-35
6.	Supplement to 1947 Import Licensing Schedule		November 1946	pp.
7	N.Z. Nat. Rev.		January 1946	pp.49-53
8.	N.Z. Commerce		August 1946	pp. 7-9
9.	Summary of:-			
	N.Z. Commerce		March 1948	pp. 21/22
	" "		" "	p. 43
	" "		June 1948	pp.15-17
			August 1948	p.15
			November 1948	pp.15-17
			December 1948	pp.47-48
	Illustrated N.Z.Commerce		April 1948	pp.13-15
		" "	May 1948	pp.19-21

N.Z. Manuf. August 1950 pp.38-39

" " September 1949 pp.17-23

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. Letter to Auckland Chamber of Commerce;
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. Address to N.Z. Chamber of Commerce Conference;
N.Z. Commerce June 1949 pp.7-10

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Chapter 14.

1951-57 Relaxation Period

In 1950 a new Government began the process of dismantling import controls. Wool prices were high, largely as a result of the Korea War boom and high export earnings made it possible to relax regulations.

The first relaxation was in March, 1950, when sterling funds held privately overseas by New Zealand residents were freed from control. Dealings in exchange and securities was permitted provided that official exchange rates were used. It was still required that earnings from exports be paid into the Reserve Bank. Private funds could now be used to import goods for which "no remittance" licences were to be issued. An Import Advisory Comittee was established to advise the Minister on matters relating to import control.

As a result of the Committee's recommendations, the 1951 schedule, announced in July 1950, showed considerable changes.

About one third (326) of all items were freed from import control, provided that they came from non-scheduled sources - i.e. all imports from dollar and East-European sources were still controlled.

Licences issued for items still controlled were

applicable to any supply source except scheduled countries.

Exchange Authorities were abolished. These were authorities granted by the Reserve Bank for Trading banks to remit a given sum to a specified country during a specified quarterly period on condition that an importer produced documentary evidence of a transaction.

In future, trading banks were to have authority to make remittances where they were satisfied that goods were being imported in accordance with the control regulations.

In a published statement, Mr Bowden, Chairman of the Import Advisory Committee felt that a large number of items previously subject to regulation had had no effective control of overseas expenditure as the amounts imported under a free system would not be substantially different from previous amounts. It was expected that some $90 million worth of imports would now enter the country free of licensing and this would save the administration a great deal of routime work. Applications for items still controlled could now receive nore careful attention.

The ensuing seven years witnessed a steady relaxation. By 1957 only 269 of 950 items were still subject to licensing control and only the dollar area, Japan and Korea remaind on the Scheduled list; licences for imports from Scheduled countries were granted much more freely. In 1950, 99.5% of private imports entered New Zealand under licence. By 1957, only 13% was subject to Import

Licensing Control.

Complaints:

Opposition to the new system came predictably, from the Manufacturing Group. In April, 1951, these complaints were formulated and presented by the Manufacturers' Association.

(1) The New Zealand tariff structure was the lowest in the Commonwealth, not having been revised since Import Controls were introduced. The lifting of controls left New Zealand producers unprotected.

(2) Import replacement manufacture had been deliberately fostered by government policy for twelve years. The current labour shortage and high labour costs required that such industries be adequately protected.

(3) New Zealand had, for social and political reasons, imposed a high cost structure on her producers. Company tax was high, payments for welfare services were onerous, workers enjoyed a forty hour week, long holidays and were unwilling to accept shift-work. This meant either considerable idle capacity in factories or high labour costs to encourage overtime or irregular hours of work. New Zealand producers were therefore at considerable disadvantage in trying to compete with overseas rivals.

The new system survived an awkward period early in 1952. Australia imposed Import Controls, reducing her Imports by half and the Sterling Area met a crisis

which resulted in the loss of £Stg.564m. Both events lent weight to the arguments of those wishing to return to the system of full control.

The Exchange Control system operated as follows, taking 1952 as a sample period.

A basic allocation, equal to 80% of the exchange used by an importer in 1950 was permitted. Further allowances were granted on application to the Reserve Bank, which judged applications according to the criteria.

(a) That goods required were essential and had an approved end-use - i.e. the importer might be required to show who would be the final recipient of goods imported.

(b) The availability of goods or substitute products in New Zealand.

(c) An importer's commitments before April 1st, 1952.

(d) Import licences for controlled items held by Importer.

(e) Any other circumstances deemed worthy of consideration.

A set of requests and complaints presented by Mr J. Menning, President of the Manufacturer's Association in June, 1952, summarises the opposition to Government policy evident in the next few years.

Mr Manning sought assurances from Government on the following:

(1) That exemption from licensing should be from United Kingdom sources only to maintain traditional

trade links and assist recovery of sterling.

(2) No further exemptions should be granted without a revision of tariff sufficient to maintain balance of payments and to protect internal manufacture.

(3) Existing non-scheduled country licences should be transferred to United Kingdom only. This would, in particular, save payments to the European Payments Union area.

(4) New licences should be issued for specific goods from specific sources.

(5) There should be a review of those items already freed from control.

Complaints concerning the operation of Exchange Control were:

(a) Allocation of exchange on the basis of 1950 expenditure continued the growth of importing agencies. End-users of products, particularly manufacturers, were unable to import directly on their own account.

(b) The 80% basic allowances took $224 million of the $350 million exchange available for 1952. The $126 million balance was quite inadequate for vital requirements (in fact, already by June 1st, $318 million additional allocations had been applied for).

(c) Exchange Control was a purely financial arrangement and made no attempt to classify goods, ignoring their relative importance to development of New Zealand economy.

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(d) Apart from the remnant of scheduled countries, no attempt was made to control source of supply.

(e) Manufacturers could not be sure of obtaining essential supplies because control of exchange was in the hands of a third party (the importing agent) who was able to divert funds for purchase of more profitable consumer goods, neglecting the needs of the developing sector.

(f) The Reserve Bank, indirectly controlling imports by Exchange Control. was usurping the function of the Board of Trade, and was not competant to make discriminating decisions.

(g) The new system, lacking effective tariff legislation, invited dumping which was on the increase.

/The Reserve Bank statement of March, 1952, [redacted] revealed some of the problems associated with the freeing of controls.

The years of 1951 and 1952 showed a fall in export receipts, partly because of a fall in farm prices and partly because of import restrictions imposed by Australia and Great Britain. Import prices had risen considerably, by 32% between 1949 and 1951.

There was a continued high level of imports - $413 million in 1951 compared with $316 million in 1950. This was only in part an attempt to replenish stocks and meet a backlog in consumer demand. The demand of the fully-employed New Zealand population had raised the level

of imports to a rate equivalent to $560 million per annum in the first months of 1952.

As a result of the strain on funds it was felt necessary to reduce the basic allocation to 40% (of 1950) in 1953. In 1956 it was raised to 50% and in 1954 to 75%. From January 1955 until January 1958 New Zealand experienced a short period when controls were minimal.

With its announcement of the ending of exchange control allocation, the Reserve Bank explained the reasons for the need for the temporary exchange controls which it had operated from April, 1952, to December 1954.

There had been an alarming fall in overseas assets from $247 million in July 1951 to $157 million in March 1952, because of :

(1) War and post war restrictions had caused a running down of stocks and a stifling of consumer demand.

(2) The relaxation of import control brought about a rush of orders.

(3) The boom in wool prices generated considerable extra expenditure.

(4) Importers, in reaction to increased demand placed excessive orders. This was especially true of new importers, who had received no allocation under the old system and were anxious to build up stocks.

(5) The waterfront dispute of 1951 effectively prevented the sale of wool from February-August, 1951, when prices were highest and cost exporters many millions of pounds sterling.

Average wool prices were:-

February	1950	33d. per lb
December	1950	106d. " "
March	1951	130¼d. " "(high pt.)
September	1951	61d. " "
September	1952	44¼d. " "

The brief experiment with comparative freedom witnessed another serious decline in overseas assets; export earnings were maintained, but the demand for imports continued at too high a level for payments to be met.

The report of the Royal Commission on money, banking and credit, published in 1957, gave some attention to the problem of excess demand for imports. It concluded that the major contributory factor was the policy of full employment which had been the principal aim of all Governments for over twenty years. The periods 1951/52 and 1951/55 especially had been years of exceptional internal prosperity, reflected in trading deficits. New Zealand was consistently living beyond her means. The wool boom of 1950/51 had allowed New Zealand to accumulate large overeas reserves which had since been whittled away year by year. Such a trend could not be allowed to continue.

The Commission listed the various measures which might be taken to remedy the balance of payments problem.

(a) Increase the quality and volume and reduce the cost of New Zealand production.

(b) Restrain domestic expenditure.

(c) Reimpose direct controls.

(d) Raise the exchange rate (devalue).

(e) Raise tariffs.

(f) Borrow overseas.

(g) Induce other countries to remove barriers to trade.

(c) and (e) were not favoured as being contrary to the Government's policy of increasing free trade and likely to jeopardise the long-run objective of attaining (g); however, it was acknowledged that from time to time selective controls of temporary nature might be required, especially to restrict movements of capital. (d) and (f) were regarded as being of little value; the beneficial effects were short term in nature and long-term effects could be harmful. (a) was approved as the most satisfactory solution but its successful implementation involved such long-term planning that its immediate value was neglibible. The Commission was left with (b) - a disinflationary policy - as the only method by which external balance could be effectively attained and maintained. It recognised that such a policy would of necessity clash with the existing full employment policy and was therefore unacceptable. The decision was to make no immediate change in policy and hope that changes in foreign demand would improve export receipts.

Table 14.1 SUMMARY TABLES

Licensing Year	Net Overseas Assets. % of Total Imports (Dec. 21)	Ext. Debt. % of Exports (31st March)	Balance on Current A/c % of Current A/c Credits	Terms of Trade 1957=100
1938	15.1	281.4	- 5.2	95
1939	36.6	314.8	-11.0	92
1940	57.7	306.5	+19.2	92
1941	62.1	253.9	+10.8	84
1942	88.8	251.8	-2.8	77
1943	53.5	234.4	+3.0	73
1944	73.1	237.2	+21.9	73
1945	198.2	223.9	+33.4	77
1946	166.3	144.8	-4.5	75
1947	68.6	119.0	-15.7	80
1948	56.6	81.0	+ 2.7	88
1949	54.7	58.4	+2.8	92
1950	50.9	54.3	+13.4	119
1951	43.6	41.8	-10.5	119
1952	31.2	31.1	-2.5	88
1953	63.7	34.5	-10.1	104
1954	41.0	37.9	-14.8	108
1955	25.9	43.3	-10.5	111
1956	32.6	35.7	-6.4	105
1957	17.4	39.4	-15.9	100
1958	26.9	38.8	-7.9	86
1959	42.8	57.5	+11.6	100
1960	26.1	44.4	-16.2	96
61/62 (18mths)	17.3	45.6	-15.9	94
62/63	21.3	48.3	-6.6	99
63/64	17.4	54.6	-4.1	110
64/65	17.6	45.3	-5.8	108
65/66	12.9	44.8	-21.7	107
66/67	11.6	43.8	-18.7	101

The period 1952-1957 is most interesting in that it witnessed a very rapid dismantling of controls and the results were quite alarming. In spite of exceptionally good terms of trade over the period, the growth in demand for imports more than kept pace with the increase in export earnings and the overseas assets accumulated before 1952 rapidly dwindled. No doubt some of this excessive demand was due to the backlog of thwarted demand, evident from the increase in the import of finished consumer goods. For example, electrical machinery, appliances and equipment imports (value c.d.v.) were:

1951	$17.4 million
1952	$26.3 "
1953	$21;6 "
1954	$22.6 "
1955	$32.8 "
1956	$29.9 "
1957	$31.8 "
1958	$36.7 "
1959	$28.3 "

However, after six years of relaxation, there was no indication of demand reducing and it became evident that the current high level of demand was likely to continue. Government was again faced with the policy decisions of 1938 and 1948, but in quite different circumstances. The balance of payments situation was comparable to that of 1938, but there was no similar fear of widespread unemployment or return to the unfavourable terms

of trade of the early 1930's. Unlike 1948, there seemed to be no case for revision of the exchange rate. The alternative of tariff seems not to have been seriously considered. New Zealand still operated on the 1934 tariff schedule and the Tariff Commission, set up in 1956 (see pages 253-256) had not completed its findings; when its proposals did come into effect, in 1962, the new tariffs simply revised the administration and incidence of the old structure; they did not represent a use of tariff as external control measures.

Predictably, therefore, Government decided to return to a policy of full Import Control.

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Chapter 15

1958-1968 - The Administrative Machinery

On January 1st, 1958, Mr Walter Nash announced that full import control would be re-introduced in order to correct the serious deteriotation in overseas reserves. The drain of funds during 1957 had increased at an alarming rate.

Table 15.1. Balance of Overseas Transactions $m

12 mths.ending		Cumulative from January			Net Overseas Assets	
1956	1957		1956	1957	1956	1957
June -10.4	+13.8	to June	+72.4	+64.4	199.4	226.2
July - 8.6	+ 9.0	to July	+60.2	+51.6	194.6	206.6
August-4.8	- 3.8	to Aug.	+54.8	+33.4	187.8	195.8
Sept. -7.2	-8.8	to Sept.	+38.2	+12.4	174.4	173.0
Oct. +9.2	-28.4	to Oct.	+28.2	-18.0	157.4	143.0
Nov. + 9.2	-40.2	to Nov.	+14.8	-44.2	152.4	116.0
Dec. +17.8	-64.4	to Dec.	+17.8	-64.4	153.0	91.0

In early 1957, good wool prices offset a slight fall in dairy prices to maintain a sufficiently high export income to match a high demand for imports, which averaged $40 million per month for the January-June period of the previous year. The second half of 1957, however, witnessed a further increase in import demand, averaging 49.4 million dollars per month. By December, 1957, overseas reserves

had sunk to the level of about six weeks overseas payments at the current level of expenditure.

In his radio broadcast explaining the new measures, Mr Nash announced:

"The system is one of allotting to every item we import a certain value of overseas exchange. The items which can be supplied from New Zealand sources will have the full amount that is required allocated. In between there will be items which will receive allocations appropriate to their order of essentiality",

A number of new provisions were required to allow for some transition period betweem the old and new system.

1. In future, all imports were to require a licence and all existing licences were cancelled. The former schedule for 1958 (published in August, 1957) was withdrawn.
2. Goods previously exempt and shipped before December, 31st, 1957, would be admitted.
3. Licences issued under the new schedule were automatically eligible for overseas funds.
4. Importers with orders already placed in excess of allocation could apply for excess licences, subject to Reserve Bank approval for funds.
5. Goods shipped before January 1st, 1958, under old schedule licences were to be admitted and their value deducted from the new licence allocation.
6. Bona fide import contracts would be honoured and

charged against 1958 licences.

A feature of the 1958 schedule was that there was virtually no discrimination as to point of origin of imports, only 70 items being restricted to the sterling area.

There was some confusion in the early months of 1958 as a result of excessive orders which had been placed in late 1957 in anticipation of the new regulations. On February 10th Mr Nash announced that it was necessary to review the method of assessing applications for excess licenses, because of over importing. He explained:

"Because of the action of this minority, we have, with reluctance, found it necessary to modify the procedure for dealing with goods on firm accepted orders but not shipped before 1st January ..... no guarantee whatsoever can be given that licences will be given for 'out of line' applications".

The "no remittance" import scheme, suspended on January 1st, was re-introduced on February 14th.

By late 1959, the overseas trading situation had improved somewhat and the schedule for 1960 represented a quite new system of the administration of licensing controls. The object was to create a far more flexible system with different criteria for different types of imports in which there was more room for adjustment of controls and levels of importing. Although the system was amended from year to year, it formed the basis of Import licensing

administration through the 1960's.

The principal provisions were:

(a) Discrimination as to origin of imports ended, except for motor vehicles and timber.
This end of discrimination was in terms of licence issue, not in trade. Commonwealth preference still gave considerable tariff advantage to goods coming from the Sterling Area.

(b) Replacement Licences: 30% of the value of 1960 licences were to be in the form of replacement licences. To avoid trading delays any importer applying for licences for imports corresponding to licences held in 1959, was issued immediately with 1960 licences for 50% of the value of his 1959 licences. Further licences were issued as the initial ones were used up; total issue was not to exceed 150% of the 1959 allocation.

(c) Exempt : An estimated 14% of value of imports was to be exempt from licensing control. There were not many items, but they were important - raw sugar, crude oil, motor spirit, kerosene lubricating oil, explosives, crude sulphur, fertiliser.
This provision recognised that there was little danger of over importing in some commodities, i.e. the importing was not speculative and the level of imports would be equal to the level of demand whether or not controls existed. The Government

had no desire to restrict demand or supply of commodities essential to the economy.

(d) Token Licences: These were issued to maintain desirable trading contracts, to introduce variety into New Zealand or to provide a sufficient quantity of foreign goods to maintain the standards of quality in New Zealand Manufacturing. 1956 was chosen as the most 'normal' trading year of the post-war period and was used as the 'base' for token licences which, in the case of 76 items, were issued for 10% of the value of 1956 imports. For 13 items, which had been severely restricted in 1956, up to 100% of the value of base year imports were permitted.

(e) Basic Licences: 401 items were regarded as standard imports with comparatively stable demand. Licences were issued automatically in application for up to 100% of 1950 licences.

(f) "C" Licences: Applications for "C" licences were considered individually, normally an initial allowance of some part of the claim being granted pending a final decision.

(g) Industry Groups: 15 groups were listed. Importers were granted licences for commodities within the group and could buy any item within the gorup. Thus a licence did not specify "electric light bulbs", "electric switches" or " three point plugs", but electrical fittings".

(h) New Importers: Traders wishing to import goods for which they had not previously held licences were entitled to apply for any items in the "Replacement" group and were required to provide evidence of firm orders placed overseas.

(i) Excess Licences: No deductions were made from licences in respect of excess licences issued for previous years. The 1961 schedule continued the process of relaxing controls.

(a) Replacement items were increased from 162 to 206 items; initial allowances being for 100% of the 1960 licence with additional allowances of a further 50%. Thus, by 1961, an importer might increase his allowance to 225% of his 1959 allocation.

(b) The exempt list was extended to butter, cheese, tobacco, cigars and leaf tobacco for cigarettes.

(c) The token licences (now designated 's') list was also extended - for example, it now included provision for small imports of potatoes and onions if the local crop failed.

(d) The allowance for Motor Vehicles remained at 75% of value of 1956 licences except that, if the local manufacturing content increased, additional licences might be granted up to 10% above the 1960 volume of motor vehicle imports.

The 1961 licensing period was extended to cover the eighteen month period ending June 31st, 1962, and supplementary licences were issued for the extra six months. This was done so that the licensing year could be from July 1st to June 30th, instead of for the calendar year. Four reasons were given for the change.

1. June-July covered the export season more satisfactorily. Under the calendar-year system, a licensing year ended in the middle of the peak exporting period.
2. Net overseas assets were at their highest in the early winter months, just after the end of the main exporting season and formed a better guide in the assessment of what level of imports could be maintained in the coming year.
3. December was the peak exporting and importing period and placed a strain on shipping and harbour facilities. Importers added to this by rushing to use up unused licences before they became invalid.
4. December-January was the normal holiday period and administration would be made easier if the change of licensing period did not coincide with the holiday period.

Tariff Revision:

On July 1st, 1962, the recommendations of the Tariff Commission set up in 1956 came into force. No attempt was made to use the tariff as an alternative to quantitative controls; the commission simply revised the 1934 tariff

to make it more consistent with the changes which had taken place since 1934.

The general aims of the new tariff were:

1. To remove all duty from many raw materials and goods not produced in New Zealand.
2. To provide protection for New Zealand industry.
3. To produce the same revenue as hitherto with a three column tariff - Commonwealth Preference, Most Favoured Nation and General.

The overall tariff rate was 7.2% on all imports - (19.0% if non-dutiable goods excluded).

The principal changes were:

(a) Packaged goods carried a duty 10% higher than bulk goods.

(b) The previous method of valuation had been C.D.V. plus 10%. Now C.D.V. was to be used, but tariff rates were raised by about 10% to maintain revenue level.

(c) Primage (a general 3% revenue tariff) and Surtax (a revenue tariff of $\frac{9}{40}$ of general tariff) were abolished, but some surtax was now built in to the general rate.

(d) The Brussels Tariff Nomenclature was adopted to bring New Zealand into line with the rest of the world.

The Licensing Schedule for 1962-63 showed some tightening up after the relaxations of the previous two years. Overseas reserves were low and there was need for some care.

A new category - 'A' licences - was introduced. These aimed at maintaining continuity of supply without overstocking and were issued as required through the year - i.e. there was no licence issue covering the whole year.

The token licence scheme was suspended.

The 1963/64 schedule continued the pattern established by its two predecessors. Minor changes were made, largely to minimize administrative delays, but there was no change in general policy.

The changes made were:

(a) The 'A' category was extended to a wide range of raw materials and included an initial licence of 75% of 62/63 licence, with additional licences as required.

(b) Exempt - detonators and books were added to the list.

(c) Licences for 130 items which had previously been specific were lumped into Manufacturer's General licences.

(d) Licences for motor vehicles were no longer issued separately for imports from dollar and sterling areas.

By the time the 1964/65 schedule was issued, in April 1964, the advantages of the flexibility of the new system had become apparent. There was less 'wastage' (unused licence authority) in 1963/64 than has been normal for some years. It was therefore possible to reduce the value of licences issued with a view to holding the level of imports unchanged. Other changes were made to increase the flexibility of the system.

(a) Exempt: Meat (fresh, chilled, frozen, dried, salted, smoked), excluding poultry, was added to the list along with undressed hides and skins (not furs) greasy and scoured wool and tea (in bulk).

(b) Basic: No application was needed. This was quite a new move and an acknowledgement that much of the administrative work in dealing with import controls was unnecessary, repetitive and frustrating. In future, on some 70% of controlled items, new licences would be issued automatically unless some change of value or commodity was requested.

(c) The token licence was continued.

(d) The group licence scheme had proved successful and was modified in the light of experience.
The Manufacturers General Licence and 'A' Licence of 1963/64 were abolished and transferred to either:-
Industry Group Licences comprising 17 groups of raw materials and components,
or
Interchangeable Licences. In 1963/64 importers had been able to transfer 25% of their entitlement to such groups. A further 25% transfer was now permissible. Thirteen groups were listed.

(e) The no-remittance scheme was continued with the condition of repatriation of overseas funds to the value of 20% of licence value. The bonus no-remittance

scheme of 1963/64, which had granted increased licences to importers making use of private funds for no-remittance imports was discontinued.

The changes of these years are summarized in Table 15.2:

Table 15.2:

Number of items in each licensing category	1962/63	1963/64	1964/65
E - exempt	10	10	13
A - issued as required	15	106	124
C - considered individually	210	117	132
C - with basic allocation	19	33	85
D - no allocation except in special circumstances	168	110	114
Basic	579	468	411
Total items*	1,001	844	879

* The 4,000 items on the tariff schedule are grouped into about 1,000 items for import control purposes.

The Licensing Schedule for 1965/66 attempted a further relaxation of controls, although it was hoped that total imports would not rise markedly.

The most important change was the enlarging of the Exempt list to include a further 90 items, largely commodities like thread, bananas, coffee, etc., which were not produced in New Zealand, were not likely to be targets of speculative over-importing and were "essential"

to the New Zealand market.

Mr Shelton, Minister of Customs, who announced the Schedule, expressed fears that some temporary over-importing might result - fears that proved justified and necessitated a more stringent licensing schedule for the following year.

Another significant feature of the 1965/66 period was that once again some allowance was made for new importers. Now, any dealer who could show that he had been obliged to buy through an importer items listed under 'A' classification could apply for licences to import directly and would receive initially licences to the value of 25% of his 1964/65 purchases. Established importers had their group 'A' licence maximum raised to 133% of 64/65 value.

Exchange Control:

The relaxation of Import Control restrictions increased the possibility of evasion of Exchange Control regulations and it became necessary to revise the rules. In April, 1965, it was ordered that all exports must be licensed and the memoranda of all export receipts were to be checked against Customs records of goods exported in order to minimize evasion and concealed export of capital.

Interest and dividends on investments and the movement of some capital sums (e.g. legacies) were free from control.

Payment for imports could once more be made by

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trading banks on examination of relevant documents. Trading banks were also permitted discretion (within limits) for payments relating to legacies, pensions, current income accruing to non-residents, travelling expenses, insurance premiums, family maintenance (of immigrant's dependents).

All other payments could be authorized only by the Reserve Bank on application through the trading banks.

Payments through the Post Office and travellers' personal allowances were permitted within small limits. These limits varied from time to time but maximum single purchase of overseas post notes has for most of the period been 50c. Travellers have normally been permitted to take $20.00 notes, $10.00 coin with the United Kingdom as destination, about half that amount going elsewhere.

A year later, in his budget speech of June 1966, Mr Lake, Minister of Finance, acknowledged that there was a considerable, but incalculable, drain of funds through sale of overseas securities, non-repatriation of interest and dividends, immigrants' personal funds, legacies, etc.

Further restrictions were therefore placed on foreign exchange dealings:

1. In future the proceeds from overseas securities sold were to be re-invested overseas, or used for travel or no-remittance imports.
2. Overseas assets could be sold by one New Zealand

resident to another only in exchange for other overseas assets or foreign currency.

3. A resident obtaining foreign currency was obliged to pay it into the Reserve Bank system.

There was clear evidence that New Zealand currency was being illegally exported and sold in 'free' markets, especially in Hong Kong. In the year ending March 1966, $3.75 million of notes - a ridiculously high figure - was repatriated through the Banks. This compared with $1.95 million for the previous year. Presumably yet more had been brought in by travellers or the postal system. Importation and export of notes was therefore forbidden unless with Reserve Bank permission, except for the $10.00 notes and $4.00 coin now permitted to travellers entering or leaving the country.

The decline in the level of overseas assets during the period of relaxation began to cause alarm. By December 31st, 1965, net overseas assets in the banking system represented only 12.9% of value of total imports for that licensing period; New Zealand could pay for about six weeks imports. This compared with 17.6% for the previous year, 26.1% for 1960 when relaxation began, and 42.8% when controls were most severe.

The Government was reluctant to return to the stringencies of full import control and preferred to maintain the existing flexible system as far as possible. The 1966/67 schedule, released in March 1966, witnessed

an attempt to reduce imports without changing the regulations.

1. Manufactured raw materials and components: - A 15% cut was made on the value of 1965/66 licences.
2. Plant and Machinery: - Imports were to be reduced, provision being made to maintain and replace existing stock. The years 1960-65 had seen high levels of such imports and industry was generally well supplied with equipment.
3. The 'A' Scheme was suspended.
4. Exempt items, currently amounting to about one-third of the value of imports were to remain as for 1965/66.
5. Motor Vehicles: - The licence allocation was reduced by 20%; with the no-remittance scheme continuing, the effective drop was expected to be 15%.
6. Consumer Goods: - were to be reduced by 15-50%,
   e.g.: 15% - Sports goods, dinnerware, canned fish, table glassware.
   20% - Infants' clothing, whisky and other spirits, toys.
   25% - Jewellery, watches, cutlery, wine, musical instruments, foodmixers, linoleum.
   50% - Plastic sheeting, electric shavers, golf balls, hacksaw-blades.
7. Token licences were to continue as for 1965/66.
8. Basic: - The automatic issue of licences was to continue.

9. Flexibility was to be maintained by continuing with group licences:
   (a) Industry Groups - trade groups of finished goods.
   (b) Interchangeable - trade groups of finished goods.
   (c) Aggregation - composite licences for several items, the value of each item unspecified, but a total limit being defined.
10. Commercial No-Remittance: - Traders were permitted to use private overseas funds for commercial imports under similar conditions to the no-remittance scheme for private imports. A 20% repatriation of funds was required.

A further reduction in the level of overseas assets (to 11.6% of import payments) led to increased stringency in the 1967/68 schedule.

1. Consumer goods - a further reduction of 20%.
2. Plant and Machinery - urgent replacement only permitted.
3. Motor Vehicles - 20% reduction.
4. Exempt - no change.
5. Token - no change.
6. Flexibility - no change.
7. Woollen goods (heavy) - 25% reduction.
8. Basic - automatic issue continued.
9. Commercial No-remittance - as before except that 25%

repatriation of funds, rising to 30% in July 1968, was required.

Mr Holyoake had already announced (in February 1968) that the private no-remittance scheme would require 30% repatriation of funds after July 1st, 1968, with a view to phasing out the scheme altogether.

Devaluation:

In December 1967, following Britain's devaluation of the pound sterling by 14%, the New Zealand dollar was devalued some 19.5%, bringing it into parity with the Australian dollar. As a result of the protection afforded to internal producers by the new exchange rate, it was possible to take further steps in the dismantling of import controls.

In March 1968, 122 further items were placed on the Exempt list and the 1968/69 Schedule freed 21 more items with the expectation that about 50% of private imports would now enter the country free of control.

The Aggregate licence system was discontinued as most items involved had by now been exempt. Transfer of licences between item codes was made easier to permit more flexibility. Finally, basic consumer goods and raw material licences were increased to 115% of 1967/68 to allow for the effects of devaluation.

Once again, an analysis of the results of Import Control as a policy measure proved inconclusive. Apart from one year (1960), current account balance was still

well in deficit. On the other hand, it can be argued that the relatively poor terms of trade in 1958-63 resulted in low export earnings and that deficit was the result of reduced earnings rather than of excessive demand, which in fact was kept fairly constant over the five year period.

Of all the periods examined, this is the one which most tests the theoretical analysis. According to the theory, it should always be possible to attain a zero balance on payments. Unfortunately, this is no more true for the nation than for the individual. Just as the individual may break even only if he is prepared to starve to death, so the nation is only able to block imports if it is prepared to stifle demand and investment growth. A number of factors made it impossible to balance current account exactly.

1. Expected Export Earnings: The Import Licensing Schedule for each year takes into account the level of export earnings anticipated for the coming year. Such predictions are inaccurate because assumptions concerning market conditions and terms of trade are subject to wide error. In addition, the timing of payments is later than the timing of commodity exchange and there is always some overlap of payments from one year to the next.
2. Variation of 'Wastage': On average, about 10% of licences were unused and initially licences were

issued on the assumption that there would be such wastage. In fact, the level of wastage varied from 5% to 22%.

3. Unexpected Import Requirements: Inevitably during the course of every licensing period additional demands were made for 'essential' imports which in many cases could not be denied.

4. Demand Growth: With increasing population and incomes the demand for imports grew steadily and was not matched by equal growth in the production of importables. As a result, Governments were forced to accede to demand pressures or accept the presence of frustrated internal demand.

The last five years of the period under review 1962-67 is almost a duplicate of the 1952-57 period. The relaxation of control quite fortuitously coincided with favourable terms of trade and high levels of export income. However, the growth in foreign demand for New Zealand exports was not nearly as great as the increase in home demand for foreign goods. The free trade section of the theory analysis is clearly reflected in these years; the maintenance of full employment with free trade is dependent on a foreign expansion which at least keeps pace with home import demand. When terms of trade fell in 1966 and 1967 the current account deficit became alarming.

At no time during the 1938-67 period was a tariff

policy used, so that the theoretical effect of tariff cannot be tested. However, the act of devaluation in December 1967 represented a tariff equivalent of 25% vis-a-vis Australia and non-sterling countries and about 5% vis-a-vis other sterling countries. Unlike tariff, it also affected exports, being in effect similar to a foreign tariff reduction or home export subsidy for New Zealand producers. To this extent, its impact was greater than that of a tariff levied only on imports. Insufficient time has passed to test the realism of the theoretical model, but the indications are that the New Zealand economy since 1967 has behaved remarkably like the theoretical cases 3, 14, 15 model (pages 96 - 105)

TABLE 14.3 ($N.Z.m)

June Year	Exports f.o.b.	Imports cav.	Current Account Balance	% Imports Exempt and No Remit.	Overseas Assets Dec. 31 % Imports	Ext. Debt Dec. 31 % Exports
1967/8	812.8	622.9	+ 72.9	40.1	37.6	48.0
1968/9	977.4	799.2	+ 96.3	48.6	25.5	51.2
1969/0	1075.2	944.3	- 25.8	51.7	27.3	47.9
1970/1	1117.7	1070.6	+ 41.8	57.9	28.8	47.0
1971/2	1352.6	1152.1	+ 208.4	62.8	44.3	42.6
1972/3	1764.0	1276.3	+ 105.0	62.0	60.2	37.0

The change in the New Zealand external payments situation was quite dramatic and must be largely attributed to the change in price relativities

resultant on devaluation. Current account payments changed to a regular surplus in spite of the removal of quantitative controls. The economy gained a few years breathing space, giving it the opportunity to make adjustments to its internal production / demand patterns without being constrained by its external sectors.

R.B. Bulletin Jan. 1958 p. 3 - 4

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CHAPTER 16.

THE ARGUMENTS OF THE 1960's

Criticism of import control remained as vociferous in the 1960's as it had always been. As in early periods, it came from three principal quarters, from manufacturers who were concerned about levels of protection, from traders concerned about administration of and allocation of licences and from economists concerned with the overall effect of import restriction on National economic development. It is of interest to note that, either through ignorance or apathy, the group most affected - consumers - has been silent on the issue of import control. It has not even been made an important issue in any of the election campaigns of the last thirty years.

Manufacturers on the whole, were in favour of controls, but were dissatisfied with their operation. They regarded controls as, primarily, instruments of a protectionist policy rather than as measures designed to maintain external equilibrium. As a result, one of their principal objections was the frequent changes of policy from one schedule to the next. The report of the Industrial Development Conference of November, 1960, stressed that Import Licensing controls should be designed to help farmers and manufacturers to plan for the long-term future, and frequent policy changes militated against this.

Most objections, often reiterated, were formulated in the report of the Federation of New Zealand Manufacturers' Committee on Import Licensing, published in November, 1963. The report accepted that licensing had become a semi-permanent feature of the economy and requested that in its application, the following rules should be observed.

1. There should be certainty and clarity of intention, i.e. whether controls were aimed at balance of payments, protection, full employment, etc.
2. Simplicity of operation.
3. Quick decisions.
4. Consistency of policy.
5. Maximum flexibility.
6. Maximum possible stability from year to year.

It suggested a number of changes:

(a) There should be one authority, not the two (Customs and Industries and Commerce) currently administering the system.

(b) More advance consultation should be held with trade organizations before determining schedules.

(c) Schedules should be announced as early as possible.

(d) The group licence system was welcomed, but one group 'G' (General) was felt to be sufficient. 'A' groups could well be incorporated into the 'G' category.

Grouping items had the advantages of permitting planning on an industry basis, saving paper-work and

transfer applications, allowed more flexibility, more rapid balancing of stocks, less licence wastage, less trading in licences.

(e) Token licences were undesirable. There was no objection in principle, but they formed an avenue for the introduction of "unfair" competitive goods.

(f) Where possible, manufacturers should hold their own licences.

The objections to 'A' and Token Licences and the request that manufacturers hold import licences, indicate that the Commission's main concern was that manufacturers obtain and retain any advantages accruing from the holding of licences. 'A' and Token Licences were used to assist new importers and encourage new products; a reduction in their use would benefit established traders. It would also benefit manufacturers by excluding the intermediary trader as far as possible.

Mr L. H. Stevens, President of the Auckland Manufacturers Federation, in his address to the New Zealand Manufacturers' Association (December 1964) reiterated the need for a single central control and suggested that there be a permanent head of Import Licensing, aided by a Commission, whose function would be to:

(a) Organize administration.

(b) Control licence issue.

(c) Receive all applications.

(d) Issue all licences.

(e) Issue schedules.

(f) Conduct investigations, hear appeals and consult interested parties.

A rather unusual complaint was voiced by Mr L. Christie, Secretary of the New Zealand Timber Importers' Association, in the New Zealand Timber Journal of May, 1963. Commenting on the 1963/64 schedule, he pointed out that successive reductions of timber imports since 1958 had helped to divert demand from timber to substitutes, especially for house-building. The substitutes proved so acceptable as to threaten the market for home-produced timber.

The trading interests in New Zealand were, not unnaturally, anxious that controls should be relaxed or abolished. Their attitudes are best summarized by the policy declaration of the Associated New Zealand Chamber of Commerce at its 1963 annual conference. The main argument was that a system of Exchange Control would be far preferable to Licensing Control, permitting much greater flexibility. For example, licences were currently held for enamel holloware, when demand had shifted to stainless steel - changing the licences involved unnecessary administrative procedures. No-one knew better than the importer what the consumer wanted: it was better to leave the decision to the importer within the limits imposed by overseas reserves.

Production was often held up through lack of essential components. For example, a shortage of machine needles (restricted import) had seriously hampered textile production from home-produced material in the 1962/63 year.

The conference declared its policy:

1. Detailed import controls should not operate as a general system and should be abolished, except for the reservations in section (6).
2. If some temporary restriction were required, it should be by exchange control.
3. The Reserve Bank should collect information on the level of orders and forward commitments requiring overseas funds, so that any necessary remedial action could be taken in advance.
4. Tariffs rather than quantitative controls should be used for protection.
5. The objective level of overseas reserves desirable proportionate to prospective demand should be determined by the Reserve Bank.
6. For particular and desirable industries, where tariff protection was inadequate, import control might be needed.
7. Industries to be protected by controls should be recommended by the Tariff and Development Board after all interested parties have been consulted.

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A number of attempts have been made by economists to analyse the overall effects of Import Controls.

In June 1962, Mr R. H. Clark, President of the Canterbury Chamber of Commerce, writing for the Canterbury Economic Bulletin, summarized the attitudes for and against import control in New Zealand.

The protagonists of the policy argued that the controls were precise in application, clearly defining that proportion of the market available to local industry, which could plan capital development and production with a degree of security. The use of the alternative, Exchange Control, did not preclude exchange being used for non-essential purposes and left manufacturing dependent on uncertain tariff protection. Furthermore, the full-employment policy was more certainly attainable, although over-full employment and non-competitiveness was a danger.

Opponents of Import Control contended that allocations based on actual imports during a recent year led to the full use of allocations to avoid prejudicing future licences. This meant adhering to traditional lines in importing and overstocking. Control protected inefficient industries and discounted efficiency and drive. Selective tariffs, on the other hand, permitted some degree of competitive stimulus. Administrative delays were irksome and restrictive.

An interesting criticism appeared in the Canterbury

Economic Bulletin of September 1964. The anonymous importer who wrote the article, complained that the control authorities treated the payments situation as an accounting exercise, trying to "balance the books" each year, and attempting to pay for all imports out of current expenditure. He argued that the most important variable in importing was for capital equipment, whose life was long and that it was unreasonable to expect that payments should balance in a year of particularly heavy import of capital items. He compared the imports of 1962/63 and 1963/64 to show that the over-importation of the later year was not due to excessive consumer demand, but to increased investment activity, particularly in the Government sector (e.g. the new hydro-electric power complex).

Table 16.1:

COMPARISON OF IMPORTS - 1962/63 and 1963/64

Tariff Group	Item	Value £NZ.m 62/63	Value £NZ.m 62/63	% of Total Imports	Value £NZ.m 63/64	Value £NZ.m 63/64	% of Total Imports
	Exempt						
06	Sugar	4.2			9.6		
07	Tea	2.5			2.5		
12	Tobacco	1.6			1.3		
26	Wool	.9			1.1		
27	Fertilizer	1.3			2.1		
27	Sulphur	.9			1.2		
33	Petroleum	22.1			23.9		
57	Explosives	.3			.5		
89	Books	4.5			6.0		
			38.5	(14.7%)		48.2	(15.3%)
73	Transport Equipment		27.5	(10.6%)		40.0	(12.7%)
71	Machinery						
	Non-electric	31.5			40.3		
	Electric	18.6			23.8		
			50.1	(19.3%)		64.1	(20.4%)

(contd)

Table 16.1 (Continued)

Tariff Group	Item	Value £NZ.m 62/63	Value £NZ.m 62/63	% of Total Imports	Value £NZ.m 63/64	Value £NZ.m 63/64	% of Total Imports
	Exempt						
	Materials						
23	Crude Rubber	1.8			2.2		
24	Wood	1.6			1.7		
26	Textile Fibres	1.2			1.5		
27.56	Fertilizers	2.8			3.0		
29	Animal and Vegetable crude material	1.2			1.2		
51.59	Chemicals	9.0			11.0		
53	Dyestuff	1.1			1.1		
55	Essential Oils	.7			.8		
58	Plastic Materials	5.6			6.4		
65	Textiles	30.4			34.6		
67	Iron and Steel	21.7			25.1		
68	Non-Ferrous Material	7.5			8.5		
			84.7	(32.6%)		97.1	(30.9%)
	Food						
03	Fish	.6			.9		
4	Cereals	4.3			4.3		
5	Fruit	3.8			4.2		
7	Coffee, etc.	1.4			1.9		
11	Alcohol Beverages	2.1			2.1		
			12.2	(4.7%)		13.4	(4.3%)
	Sundry						
54	Medical Products	5.1			5.6		
62	Rubber Manf.	2.5			2.5		
64	Paper Manf.	5.0			5.2		
66	Non-metal Manf	4.4			5.3		
69	Metal Manf.	10.8			11.1		
84/85	Clothing and Footwear	2.0			2.2		
86	Precision Instruments	5.8			6.6		
	All Other	11.9			12.4		
			47.5	(18.2%)		50.9	(16.2%)
	Total Imports		260.3			313.7	

(From Canterbury Manufacturing Association Industrial Newsletter, September, 1964).

The Monetary and Economic Council reports of May 1962, and June 1963, were highly critical of the Import Control system and listed a number of points.

They recognized that there was some need for Import and Exchange control in the current circumstances, but felt that the system could not solve the long-term problem. Producers sheltered by controls enjoyed a strong monopoly position which was not conducive to efficiency or the holding down of costs.

Controls did not encourage the expansion of exchange earnings; if they were used to suppress the effects of inflation on the balance of payments position, the export industries might be damaged by rising costs and shortages as demand was diverted to local products.

Allocations were made on arbitrary criteria - e.g. on the imports of a past period. This starved new importers of exchange.

Since the least essential imports were most curtailed, domestic production of substitutes for non-essentials became the most profitable.

The most complete examination of the arguments in favour of Import Control has been presented by Mr W. Rosenburg in his book, The Effects of Imports Controls and Industrialization on New Zealand. Mr Rosenberg agreed that the New Zealand protectionist system has contributed to a rising cost structure and that such free trade centres as Singapore, Hong Kong

and Aden enjoyed much lower prices. Costs in New Zealand (128 - 143 - 1959-64) have not, however, risen more rapidly than those of Britain (125 - 140) and not much more rapidly than those of Australia (120 - 129). Nominal wages in New Zealand rose much less than in such nations as France, West Germany, Japan, United Kingdom, Australia, U.S.A., even when allowance is made for payments made above award rates.

Mr Rosenberg contended that the choice facing New Zealand was what form protection shall take, not whether or not there should be protection. To dispense with protection was to invite the kind of unemployment and poverty also "enjoyed" by many residents of free-trade communities. Comparison should therefore be with countries which operated different forms of protection. He showed that New Zealand's growth rate, particularly in the farming sector, compared more than favourably with the development of such nations as Australia, Canada, Denmark, Netherlands, Argentina, Uruguay, U.S.A. and South Africa, and that volume of exports rose steadily and healthily year by year.

On the question of monopoly practices, Mr Rosenberg denied that there have been any greater monopolistic tendencies in New Zealand than anywhere else - monopoly being a natural feature of increasing capitalization of production methods, centralization of production and ease of communication and transport. The problem of

monopoly is one distinct from that of Import Control. Indeed, there is an argument that Import Controls prevent monopoly growth in so far as they support the small, less efficient, producer and prevent undesirable domination of the New Zealand economy by large foreign-owned corporations, which were not likely to be considerate of New Zealand's welfare in the operation of their business. Import Controls could be used to reduce monopoly by spreading licences and to enforce a minimum participation of New Zealand capital in industry.

On the question of distorting the economy, Mr Rosenberg agreed that there was, indeed, some forced re-allocation of resources. In particular, some industries which flourished under control, would be seriously affected by the removal of controls. He used the following Table, drawn from W. B. Sutch's paper on 'Recent Developments in New Zealand Manufacturing' (Industry and Commerce, September 1958) to illustrate the effects of delicensing on selected industries.

Table 16.2:

Effect of De-licensing on Manufacturing
(Some Selected Industries)

Industry	Date of De-Licensing	Before De-Licensing		Year After De-Licensing	
		Production	Imports	Production	Imports
Biscuits (tons)	Dec. 1953	16320	33	15875	116
Jam (tons)	Feb. 1954	3318	1	2141	232
Vacuum Cleaners(No.)	Dec. 1953	36183	6270	31399	14133*
Washing Machines(No.)	Dec. 1953	49859	146	45458	7490*
Electric Irons (No.)	Dec. 1955	59491	3811	17860	73990
Confectionery (£m.)	Dec. 1953	4.4	.04	4.4	.3*
Electric Ranges(No.)	Jan. 1952	21623	78	22612	6953
	Volume of Production - 1949-50				
Woollen Piece Goods	Mar. 1951	= 100: 100	n.a.	95.7	8.3m.sq.yds

* 1955/56 1956/57

It was better to accept the somewhat higher cost, perhaps poorer quality and limited range of goods available on the New Zealand market than to witness a decline in the growth of manufacturing, the consequent unemployment and a range of fine luxury products which only the fortunate few could afford.

In his book, Mr Rosenberg constantly returned to the most important single argument in favour of Import Control - that it is a necessary secondary policy to the fundamental goal of all New Zealand's policies - the maintaining of full employment. It was not possible for the agricultural sector of the economy to expand rapidly enough to absorb the growing labour-force. In fact, the expansion in agriculture was achieved by increasing capital input to the extent of reducing absolutely the number of workers required.

Table 16.3:

Farm Labour Force 1949-1964

No. Actively Engaged		% of Total Labour Force		% Decline
1949	1964	1949	1964	
132,000	118,000	18.4	12.4	- 10.1

During the period 1949-64, the labour force grew by 236,000. It was necessary to provide work for these and for the 14,000 released by agriculture. Clearly it was not possible to absorb them in New Zealand's traditional agrarian economy without regressing into the kind of

subsistence economy typical of an underdeveloped nation with hidden farm unemployment. The only way to provide for an enlarged labour force was to foster the development of industries and services not restricted by the limitations of land area and fertility. Import Controls formed one means whereby employment could be guaranteed to all employable New Zealanders. It was better that all should enjoy a reasonable and adequate standard of living than that an unfortunate minority should suffer poverty in a land of apparent plenty.

Alternative measures - variation of the Exchange rate and tariff protection - were dismissed as being less certain in their protective effects and at least as inflationary in their effects on costs and prices.

A more disinterested review of Import Control was made in the World Bank Report on the New Zealand Economy presented in June 1968. The Report's view was:-

> "New Zealand has followed a policy of offering domestic industries protection which, in the mission's view, has resulted in the allocation of scarce resources to industries of little net benefit to the balance of payments. Protectionism has been justified on the grounds of the need to provide full employment, to secure a high standard of living, to overcome the disadvantages of a small economy and the paucity of raw materials, etc. Many of the arguments advanced for protectionism

are fallacious, from the viewpoints of both economic reasoning and actual experience in New Zealand."

The Report made the following points:

1. The argument that New Zealand must follow a protectionist policy because other nations do so is illogical. It is true that discrimination by other nations harms New Zealand's trade and this is to be deplored. This does not mean, however, that New Zealand should discriminate against foreign manufacturers, as such policies do more harm to New Zealand than to her "enemies".

2. The amount of protection given by quantitative controls is not calculable; neither the public nor the Government can estimate what shelter each industry enjoys as a result of arbitrary case-by-case decisions which attempt to substitute for the price mechanism.

3. New Zealand has not improved her balance of payments position by use of import restrictions. Even with restrictions imports have increased. The restrictions have been an ineffective attempt to substitute for budgetary, fiscal and income policies which no Government has been prepared to adopt.

4. Some measure of protection might be reasonable for a limited group of 'infant' industries, with the

following criteria:-

(a) Protection should be for legitimate infant industries which could be expected to become competitive in the foreseeable future.

(b) A ceiling on the maximum rate of protection should be established.

(c) Rates of protection could vary to a limited extent as defined by well-established and clearly-outlined economic criteria.

(d) The rate of protection should be set in advance and be periodically reduced.

(e) The degree of protection given to each product should be made known to the public.

This protection would be better afforded by tariff than by quantitative control.

5. Neither controls nor tariff should be used to protect an unrealistic exchange rate.

6. Any protection (by tariff) should be granted only when an industry made a sufficiently strong case for it. The onus of proof should be on the industry.

7. Regulations against "dumping" are generally not required. If goods are sold by foreigners at 'marginal' cost, lower than domestic price, over a long term the advantage is New Zealand!s and anti-trade legislation is self-punishing. Temporary 'dumping' can be countered by temporary tariff.

In its conclusion the Report states:-

"The most important single measure which can help make New Zealand manufacturing internationally competitive is its gradual exposure to competition from imports. This requires a removal of quantitative import restrictions and a reliance on temporary, reducing tariffs as the major instrument of protection for infant industries."

1.	N.Z. Manufacturer	May 1959	p.	74 - 78
		Feb 1960	p.	99 -100
		Feb 1961	p.	118 -125
		Jul 1961	p.	71
		Nov 1963	p.	118 -119
		Mar 1964	p.	70 - 71
		Jan 1967	p.	14 - 17
	N.Z. Monthly Review	May 1966	p.	22 - 24
	N.Z. Economist	May 1966	p.	12 - 13
2.	N.Z. Manufacturer	Dec 1964/Jan 1965	p.	80 - 81
3.	N.Z. Timber Journal	May 1963	p.	66 - 67
4.	N.Z. Comm.	May 1963	p.	47 - 49
5.	Canterbury Economic Bulletin	Sep 1964	p.	464 -468
6.	Canterbury Economic Bulletin	Jun 1962	p.	450 -452

Other sources:

Report of Industrial Development Conference 1960

Report of N.Z. Manufacturers Committee on Import Licences 1963

Monetary and Economic Council Reports

W. Rosenburg "Effects of Import Control and Industrialization in New Zealand"

World Bank Report on New Zealand Economy Jun 1968

CHAPTER 17

Problems of Administration and Policy

A summary of the main problems experienced in implementing Import Controls is worth recording. It falls into two broad groups - administrative and policy problems.

(a) Sorting Applications: Importers naturally overstate their requirements. Distinguishing between genuine and overstated claims is necessarily a slow and arbitrary process. For instance, when the 1952 Exchange Allocation system was introduced, estimated private imports were to be £340-£360 million. Basic allocations for £224 million were issued, leaving a balance of £120 million for additional allowances on application claims for these amounted to £318 million. Actual private imports reached £400 million.

(b) Estimates and Notification: Advance estimates of requirements, notification of imports, receipt examination and issue of licences as well as provision for appeals, meant that requirements were assessed more than a year in advance. When full-import licensing was re-introduced in January 1958, provision was made for excess licences for goods contracted for in 1957. The rush of applications for such licences showed that foreknowledge of the coming change had caused tremendous over-ordering in late 1957.

(c) New Firms: Growing firms requiring imports had either to make special applications for licences and for foreign exchange or buy their requirements from a more fortunate

licensed importer. The success of an application depended not so much on the merits of the case as on the stringency of the regulations then in force. Buying from another importer involved paying monopoly prices. A firm's prosperity was related more to the size of its imports in the relevant base year than to its efficiency. Import agents acquired allowances which were virtually sold to the real importer. Another method of acquiring a licence has been for a new firm to take over a firm holding a licence. The take-over price is based as much on the need for the licence as on the value of the company.

(d) Transfer of Licence: Because licences were not transferable between traders, the system was far too rigid. Dealing in licences has become an important business in recent years. Where transfer among items was permitted, licences were often used for the acquisition of high-profit consumer commodities, more essential goods being neglected.

(e) Wholesaler: Whether for good or evil, the import wholesaler is now a relatively unimportant figure in New Zealand. The Licensing Authority prefers to grant licences to the receiving firm to avoid evasion and orders tend to be placed by the end-user direct with foreign suppliers.

Deferred Payment: Imports ordered in one period may have payment due in another. The guarantee of funds at a quite distant date may be necessary. This time disparity between ordering, consignment and payment, as well as the 'block' allocation of exchange, makes it difficult to check accurately the relationship of authorized payments and leakage of funds into private reserves.

Private Overseas Reserves. It is interesting to speculate but impossible to estimate the amount of overseas funds held outside the official reserves. Immigrants do not bring in their funds, emigrants do not take only their own. Many tourists in New Zealand pay unbelievably low prices for accommodation, etc. [illegible] remittances having been made to overseas 'dependants'. Apart from the innumerable 'legal' methods of avoiding regulations, the illegal expatriation of currency for sale on free markets must be considerable. In 1966 for instance, business firms spent almost ten times as much on trade delegations, promotion, travel, etc., as in 1950.

The volume of imports under the No-remittance scheme underlines the fact that, in spite of many years during which, legally, all overseas earnings were channelled into official reserves, New Zealanders have managed to acquire a great deal more than they have declared. If we add the value of goods brought in by travellers, the volume of imports which by-passes the licensing system must be considerable.

Flexibility and Control: Increasing flexibility increases the opportunities for evasion; increasing control increases the rigidity of allocation and consequent difficulties of adapting past patterns, via present estimates, to future needs.

Experiments have been made with the licensing period, initially six months, then the calendar year, and finally the July-June year. Different periods have seen emphasis placed on Exchange or Licence control. Many types of licences have been used at various times with more or less transferability among commodities, sources and

traders. Rules concerning the eligibility of overseas exchange holdings for no-remittance imports have been constantly revised - each revision being a tacit admission that, somehow, the regulations were being evaded and that private reserves had accumulated in spite of the regulations.

Wastage: The proportion of unused licences varies considerably. Since full licensing was introduced in 1958, it averaged 10%, rising to 22½% in January-June 1962, when the change in licensing year led to considerable excess of applications and the granting of licences to cover unwanted goods. It fell to less that 5% in 1966/67 and 67/68 when tighter controls were in force.

Policy Problems: The policy of quantitative import control is not really a policy of itself, but is designed to implement or compensate for a number of other policies followed by successive Governments.

They include:

Full Employment

Equitable Income Distribution

Price Stability

Steady Growth Rate

Manufacturing Development.

Of these, the first two are the most significant from the point of view of balance ofppayments because of their affects on demand for importables and on the cost structure of the export sector.

Full Employment: The New Zealand interpretation of Full employment has been that no-one shall be involuntarily unemployed. At no time between 1937 and 1967 did the number of registered unemployed rise above 1%. Registered unemployment has normally been 400-600, seldom reaching 1,000. Registered vacancies have normally been 6,000-8,000.

As a result, changes in levels of export incomes have had little effect on the level of internal demand - the export multiplier has not been permitted to operate. With growing population and incomes and higher standards of living, the demand for consumer durables has risen; transport, power and manufacturing investment to meet growing demand has greatly increased the need for capital equipment.

Thus, the expected consequences of reduced export earnings in reducing internal income and therefore import demand has not taken place. Instead, increased Government spending and the encouragement of import replacement industries has sustained employment and demand. The deep-rooted objection to unemployment even of a temporary nature, has led to the support of declining and inefficient industry.

In both cases, spending power has been granted to sectors whose productive capacity does not match demand capacity.

Incomes Policy: The Arbitration Court and similar bodies which establish wage-rates for over half the employers of New Zealand, by their decisions set the pattern for most other wage and income groups.

The main criteria for increased wages until the unique decision of June 1968, when a Nil order was made by the Court, have been:

(a) Retail Price Index: From 1954 to 1965, the price index rose 27%. Aware rates rose 28%.

(b) Distribution of income among various groups.

Wage increases have thus been granted to sustain real spending power and to ensure that a worker in any given industry is paid a wage comparable to his counterpart in another industry.

The result has been that expanding industries have found it difficult to attract labour without paying high above-award wages. In protected internal industry enjoying high-level demand, it has been relatively easy to pass on such cost increases in higher prices.

Export prices have remained more stable and the effect of cost increases has been to reduce profits and the attractiveness of the export sector.

The following table illustrates the change in relative prices 1950-66.

Price Index 1965 = 1,000

Table 14.1 (Table 6.2 reproduced)

Year	Export Prices	Wholesale Prices		Consumer Prices
		Imported	Home Produced	
1950	903	717	601	566
1951	1,059	836	699	629
1952	852	942	758	678
1953	948	895	802	709
1954	966	855	839	741
1955	992	870	841	760
1956	968	893	887	789
1957	953	916	880	789
1958	812	946	900	839
1959	927	970	910	871
1960	900	956	920	877
1961	851	960	914	892
1962	868	961	906	916
1963	950	979	923	935
1964	1,035	982	969	967
1965	1,000.	1,000	1,000	1,000
1966	992	1,017	1,008	1,028
1967	935	1,055	1,016	1,091
1968	913	1,182	1,057	1,137
1969	1,009	1,234	1,118	1,193
1970	1,031	1,313	1,171	1,271
1971	1,059	1,412	1,270	1,403
1972	1,227	1,505	1,429	1,500

Thus, in the pre-devaluation period 1950-1967, export prices rose by 3.5%, while prices of home-produced goods for internal consumption rose 69%. With basic wage-costs not significantly differing between sectors, it is not surprising that farmers with surplus capital increasingly turned their attention to real-estate speculation, holiday and tourist industry and internal manufacturing development. Increased social welfare services of schools, housing, hospitals, etc., and growth of power and transport and industrial development, increased the attractiveness of internal industry.

The immediate impact of devaluation was to make exports relatively attractive for producers and imports relatively unattractive for buyers; importables (home-produced goods) gained a price advantage which was still apparent in 1972.

CHAPTER 18

CONCLUSION

Some attempt must be made to evaluate the relative merits of various types of control on the basis of arguments derived from history, theory, statistical evidence and surmise. Unfortunately, much of the "evidence" does in fact rest on non-quantifiable factors, opinions and assessments. Any conclusion must, to some extent, be a value judgement.

Table 18.1 is the result of an attempt to compare the relative prices of home-produced (ex-factory) goods and imported goods (c.i.f.) in those commodities where both foreign and domestic goods are sold in the New Zealand market. It must be recorded that the attempt was almost a complete failure, but that the negative result is perhaps more significant than any positive result. In spite of the fact that many thousands of items are produced internally and thousands more imported, only in sixteen of these could there be found a situation where the internally- and externally- produced commodity were in any way comparable - and even these comparisons are questionable. Whatever may be the intention of import-control policy in New Zealand, the operation of controls by 1967-68 was that, if a commodity were produced in New Zealand, no licence was made available for its import. Close investigation of apparent competition reveals that what appear to be similar classifications are, in fact, different commodities. A few examples will illustrate:

1. Jandals are both imported and home produced. In fact, sizes 1-7 (children's) are imported, sizes 8 and over are home produced.

Table [illegible].1

Commodity	Imports			N.Z. Produced			
	Value($000) c.i.f.	Quantity	Price per unit	Value($000) (ex factory)	Quantity	Price per unit	Internal/External Price Ratio
Rubber tyres and cases	1,071	1,764,150lbs.	0.61	13,530	28,028,440lbs.	0.69	1.13
Child's leather shoes under size 1-5	95,060	66,244prs.	1.43	1,179	460,812prs.	2.55	1.78
Fully-fashioned Hosiery	67,699	121,953prs	0.55	186	315,780prs	0.59	1.07
Men's and Boys' suits	43	2,215	19.42	4,808	177,048	27.16	1.40
Newsprint	37	6.021 tons	122.02	22,806	195,546	116.62	0.96
Perambulators	1.2	48	25.89	2,760	7,847	35.17	1.36
T.V. Sets	10.2	106	96.03	5,334	46,369	116.11	1.21
Candles - plain	1.0	2,784lbs.	0.34	105	351,680	0.30	0.88
Rubber hot-water bottles	4.6	10,224	0.45	160	282,000	0.56	1.24
Woollen Travelling Rugs	0.9	213	4.42	443	96,000	4.61	1.04
Seed drills (manuf.)	37.7	89	424.02	185	255	725.49	1.71
Seed drills (assembled)	37.7	89	424.02	20	36	555.55	1.31
Printers' Ink	14.6	222cwt.	65.57	2,387	40,833	58.46	0.89
Domestic Refrigerators over 8 cu.ft.	5.1	44	115.66	4,316	28,211	154.07	1.33
Fibrous plasters sheets	0.3	662sq. yds.	0.45	1,632	1,856,000	0.87	1.93
Cigarettes	153.2	36,477 thou.	4.19	16,421	4,651thou.	3.53	0.84

2. Staples - galvanized staples are New Zealand made, insulated staples imported.

3. Crockery - various quality ranges make comparison impossible.

4. Carpets - New Zealand-made carpets are woollen, with some admixture. Foreign woollen carpets are excluded, but nylon, rayon, cotton admixtures are imported.

The list is endless, and to the researcher, depressing. In 1967, the New Zealand Institute of Economic Research abandoned as impracticable an attempt to analyse the relative competitiveness of internal products and imports because it was impossible to obtain sufficient information. The very imperfect conclusion of Table 18.1 is that most New Zealand industries are not price competitive with foreign producers. It must be assumed that in all products where the foreigner is excluded - textiles, clothing, machinery, durables, sanitary ware, holloware, electrical goods, paper, furniture, etc., New Zealand is even less competitive than in those products listed in the table. It is largely a matter of personal judgement whether import controls are necessary because these industries are less competitive, or that the industries are less competitive because import controls exist.

An analysis of the growth of the industrial sector does not indicate that New Zealand's manufacturing grew more rapidly during the period 1958-62, when controls were most severe, than during years of partial relaxation. Table 18.2 shows growth rates of factory production (value added) for all factory production and for five sectors which have been protected; it also shows farm income (gross) and Gross Domestic Product. The relative growth

of farm and factory output cannot conveniently be shown in terms of income or value of output, because primary products have been subject to such variation in price as to make it impossible to relate quantity to value. On the other hand, manufacturing encompasses such a wide variety of commodities, whose quality and relative importance change over time, that it is impossible to express total factory output in quantity terms. No method of comparing growth rates can be satisfactory and the use of columns (a), (o) and (s) of Table 18.2, reproduced in Figure 18.1, is far from satisfactory. The diagram does, however, illustrate one very important point; the maintenance of Full Employment is heavily dependent on the growth of secondary industry. While numbers engaged in farming actually declined by over 6,000 during the period 1949-68, more than 92,000 additional workers entered manufacturing - 30% of the increment to the labour force. Advocates of Import Licensing controls argue that unemployment would be the inevitable result of their abolition.

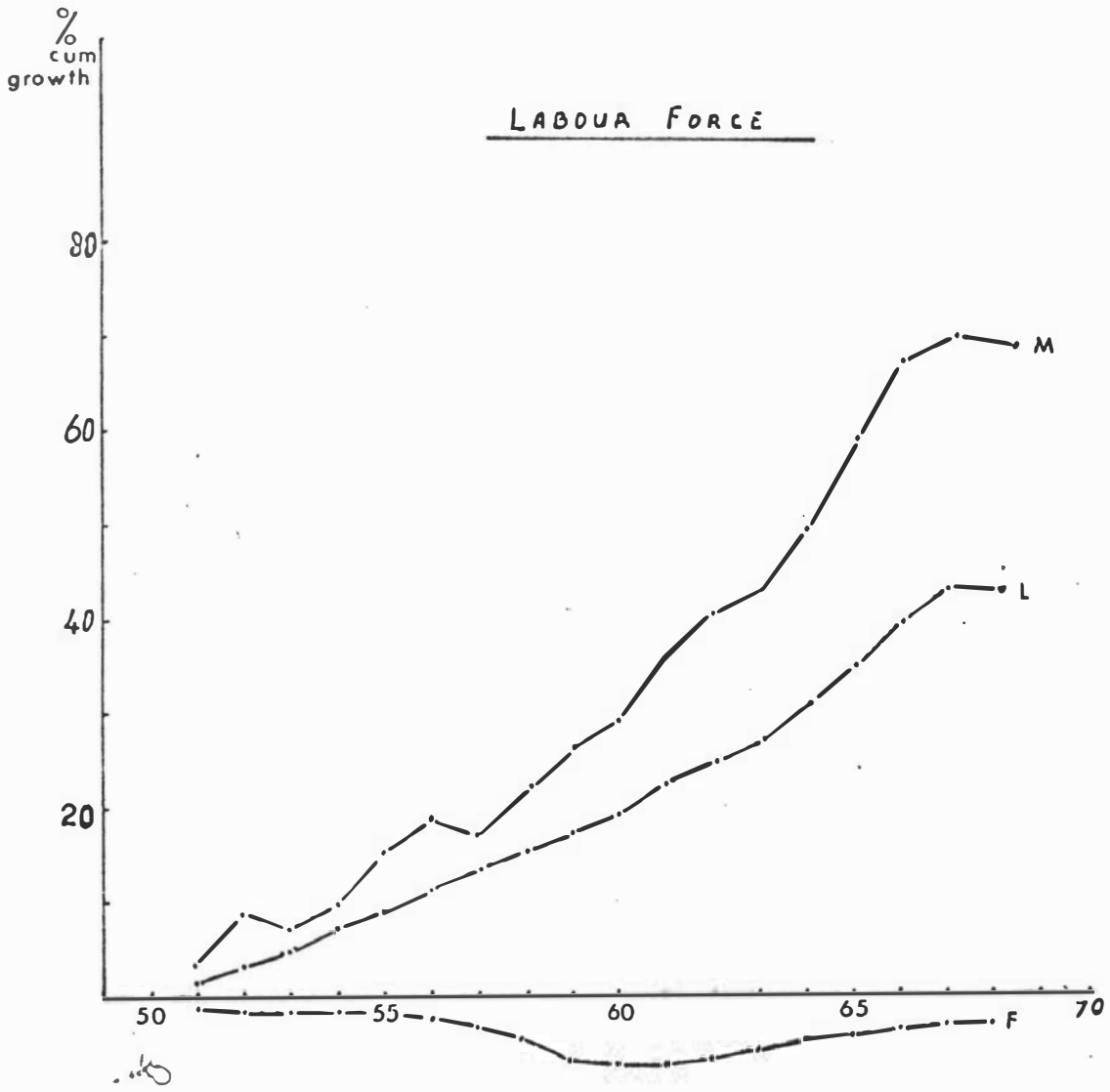
A closer look at manufacturing growth, however, suggests that growth took place independently of Import Control per se. The expansion of New Zealand's secondary sector coincided with overall growth of the economy. The correlation co-efficient of columns (c) and (u), or net value added in manufacturing and Gross Domestic Product is 0.994 (significant at 0.01 level). There is no indication that Domestic Product, Employment Levels, or Manufacturing Development were, in fact, stimulated by Import Control.

	(m) Electrical Mach. and Appliances V/A in Manuf. $m	(n) % Growth	Farming Sector (o) Labour Force	(P) % Growth	(q) Gross Farm Income ($m)	(r) % Growth	Whole Economy (s) Total Labour Force (000)	(t) % Growth	(u) G.D.P $m	(v) % Growth
[illegible]-50	5.3	-	148.3	-	368.6	-	731.9	-	1107	-
1950-51	5.9	11.3	148.1	-0.1	581.2	57.6	740.4	1.2	1408	2.7
[illegible]-52	6.5	10.2	146.7	-1.0	437.8	-24.7	751.6	1.5	1459	3.6
1952-53	7.0	7.6	145.8	-0.6	522.2	19.3	766.7	2.0	1528	4.7
[illegible]-54	8.5	21.4	145.0	-0.5	544.6	4.2	787.0	2.6	1690	10.6
1954-55	9.3	9.4	144.6	-0.3	562.1	3.2	800.3	1.7	1877	11.1
1955-56	9.8	5.4	144.3	-0.2	554.4	-1.4	813.9	1.7	1979	5.4
1956-57	9.1	-7.1	143.7	-0.4	614.0	10.8	831.2	2.1	2078	5.0
[illegible]-58	10.6	16.5	142.7	-0.7	592.7	-3.5	847.9	2.0	2201	5.9
1958-59	12.0	13.2	141.3	-1.0	564.2	-4.8	861.8	1.6	2294	4.2
[illegible]-60	12.8	6.7	139.8	-1.1	623.5	10.5	875.6	1.6	2453	6.9
[illegible]-61	16.1	25.8	137.6	-1.6	613.9	-1.5	895.3	2.[illegible]	2660	8.4
[illegible]-62	18.3	13.7	137.4	-0.1	595.0	-3.1	911.6	1.[illegible]	2754	3.2
[illegible]-63	21.9	19.7	137.1	-0.2	654.0	9.9	929.9	[illegible].0	2967	[illegible].1
[illegible]-64	28.3	29.2	137.9	+0.5	763.6	16.8	957.9	3.0	3239	9.2
1964-65	35.8	26.5	139.1	+0.8	792.1	3.7	991.4	3.5	3546	9.5
1965-66	34.9	-2.5	141.5	+1.7	852.5	7.6	1026.0	3.[illegible]	3769	6.8
1966-67	38.0	8.9	142.7	+0.8	824.2	-3.3	1052.5	2.6	3977	5.0
1967-68	34.7	-8.7	142.7	0.0	826.1	0.2	1043.4	-0.9	4083	2.7
1949-68		554.7		-3.8		124.1		42.6		268.8

Table 4.2

	All Factory Production				Selected Industries							
	(a)	(b)	(c)	(d)	(e)		(g)	(h)	(i)	(j)	(k)	(l)
	No.of(000) Persons Engaged	% Growth	Net $m Value Added	% Growth	Textiles Value Added in Manuf. $m	Growth	Apparel/Footwear Value $m Added in Manuf.	% Growth	Chemicals Value $m Added in Manuf.	% Growth	Value $m	Products % in Growth
1949-50	133.2	1.5	156.0	10.6	10.8	-	2[illegible].2	-	9.6	-	[illegible]	-
1950-51	138.4	3.9	175.2	12.3	13.0	20.4	26.5	19.4	11.3	17.7	[illegible]	20.0
1951-52	144.4	4.3	195.0	11.3	13.3	2.3	29.5	11.3	12.9	14.1	[illegible]	24.5
1952-53	143.2	-0.8	218.2	11.9	13.7	3.0	27.3	-7.5	13.2	2.3	[illegible]	3.9
1953-54	146.5	2.3	244.5	12.1	15.9	16.0	29.9	9.5	15.1	14.4	[illegible]	12.9
1954-55	153.6	4.8	276.5	13.1	17.3	8.8	34.1	14.0	17.3	14.6	[illegible]	26.8
1955-56	158.2	3.0	337.1	21.9	17.4	0.6	35.1	2.9	17.9	3.5	[illegible]	7.4
1956-57	156.7	-1.0	360.2	6.9	17.1	-1.7	34.3	-2.3	18.9	5.6	[illegible]	0.0
1957-58	163.0	4.0	378.6	5.1	19.6	14.6	35.3	3.7	20.3	7.4	[illegible]	4.9
1958-59	168.7	3.5	411.8	8.8	22.7	15.8	41.0	9.9	21.6	6.4	[illegible]	15.0
1959-60	172.0	2.0	448.5	8.9	26.1	15.0	40.4	-1.5	26.1	20.8	[illegible]	13.5
1960-61	181.3	5.4	498.7	11.2	28.7	10.0	44.7	10.3	28.3	8.4	[illegible]	16.9
1961-62	187.6	3.5	561.1	12.5	32.7	13.9	48.2	7.8	28.9	2.1	[illegible]	10.2
1962-63	191.5	2.1	634.7	13.1	32.0	-2.1	48.3	0.2	30.1	4.2	[illegible]	8.4
1963-64	199.3	4.1	673.9	6.2	34.8	8.7	52.9	9.3	36.1	19.9	[illegible]	21.4
1964-65	211.0	5.9	749.3	10.9	40.2	15.5	55.5	5.1	39.3	8.9	[illegible]	21.4
1965-66	222.9	5.6	853.5	13.3	47.2	17.4	60.2	8.5	43.5	10.7	[illegible]	16.8
1966-67	229.3	2.8	948.4	11.1	49.3	4.4	61.8	2.7	46.4	6.7	69.9	4.6
1967-68	225.7	2.9	989.6	4.3	52.3	6.1	60.7	-1.8	47.0	1.3	66.4	-5.0
1949-68		69.4		534.4		384.3		173.4		389.6		681.2

FIG. 17.1.



M = No. Emp. in Manuf.
L = No. in Labour Force
F = No Emp in Farming

Figures 18.2 .. 18.8 show, as semi-log graphs, a series of logarithmic regression-growth patterns over time. It is not possible to correlate quantitatively growth and import control, because the relative stringency of controls cannot be quantitatively expressed. Each sector is shown as a regression line of the form

$$Y = A\,B^X$$

or $\text{Log}\quad Y = \log A + X \log B,$

where Y represents the sector, X time. 1958-59 is taken as the mean year and is shown as 0 on the X axis. The period 1949-50 to 1967-68 is thus shown as -9 ..... +9. In each case the regression line is drawn from the derived function; observed values of Y for each year are marked as crosses, forming a scatter around the regression line and indicating deviation of actual G.D.P. from the trend.

Fig. 18.2 shows G.D.P. (column(u), Table 18.2) and has the form

$$* \quad \text{G.D.P.} = (2317)(1{,}0698^X)$$

* A 't' test for significance of fit of computed G. on actual values gives:

$$SY_c = \sqrt{\frac{\Sigma y^2 - 6\,\Sigma xy}{N - 2}} = 0.01966$$

$$S_b = \frac{S_{yc}}{\sqrt{\Sigma x^2}} = 0.00\,2$$

$$|t| = \frac{|b|}{S_b} = \frac{\log B}{S_b} = 35.739$$

This indicates high level of significance at 0.01 level.

The general linear equation $Y = a + bX$ is here represented as $\log G = \log A + X \log B$; $y = \bar{Y} - Y$; $x = \bar{X} - X$.

FIG. 17.2

G. D. P.

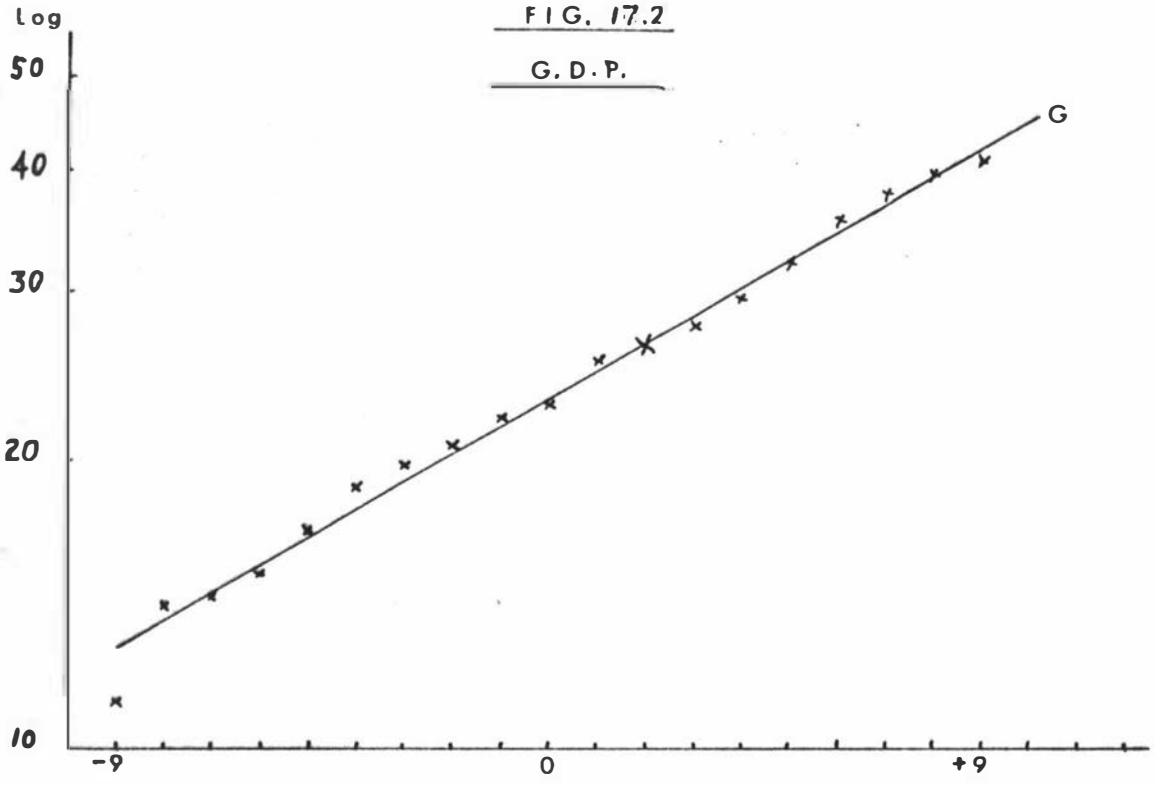


FIG. 17.3

Total Factory

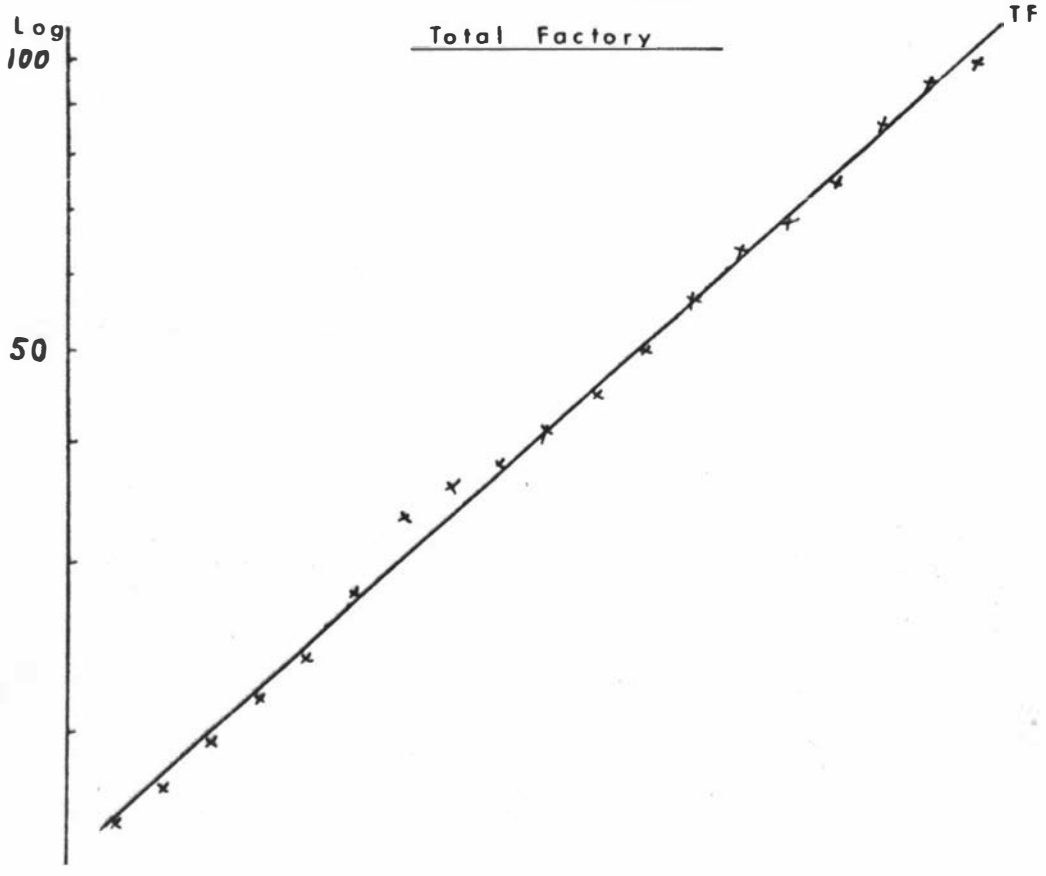


FIG. 17, 4.

Textiles

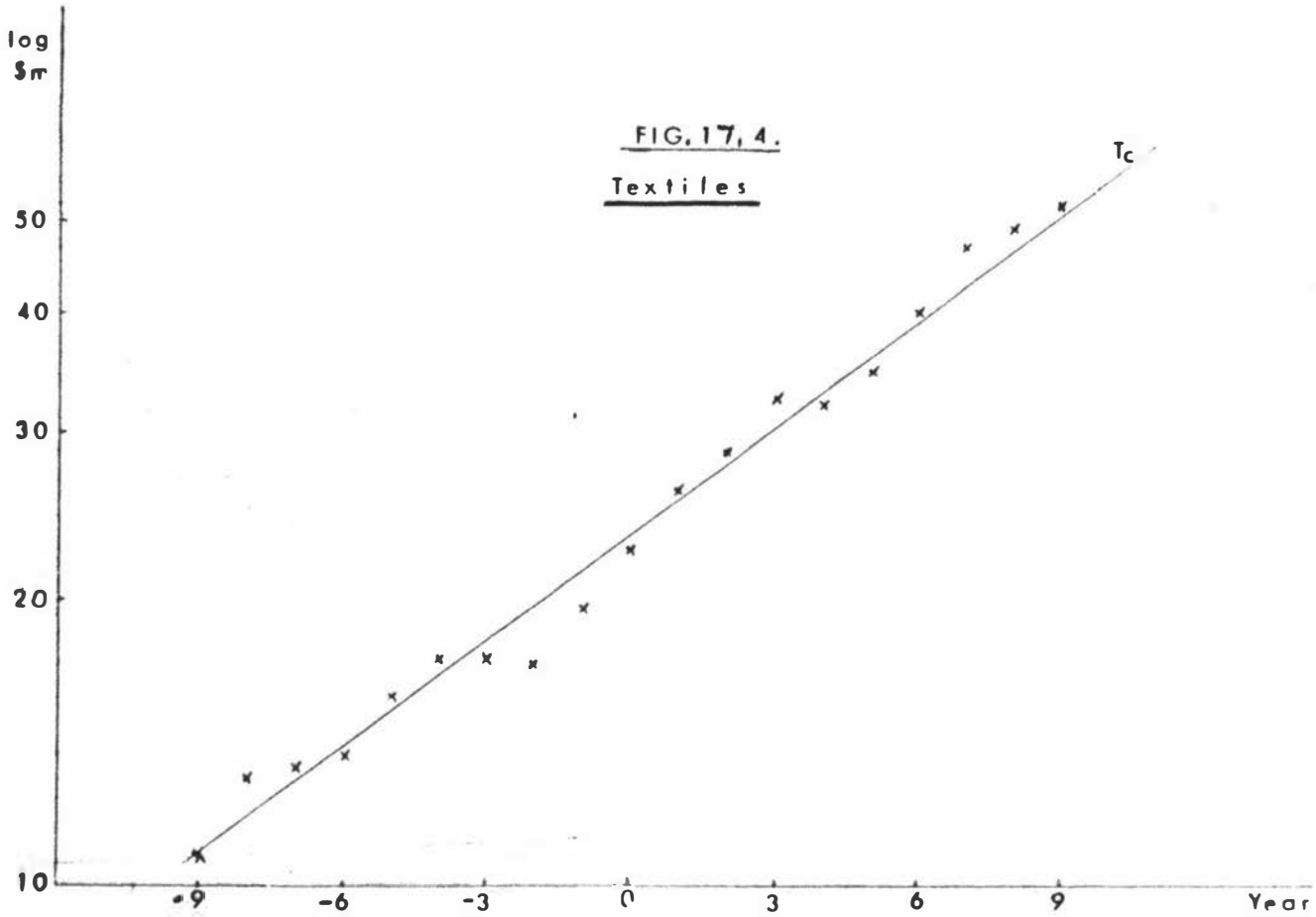
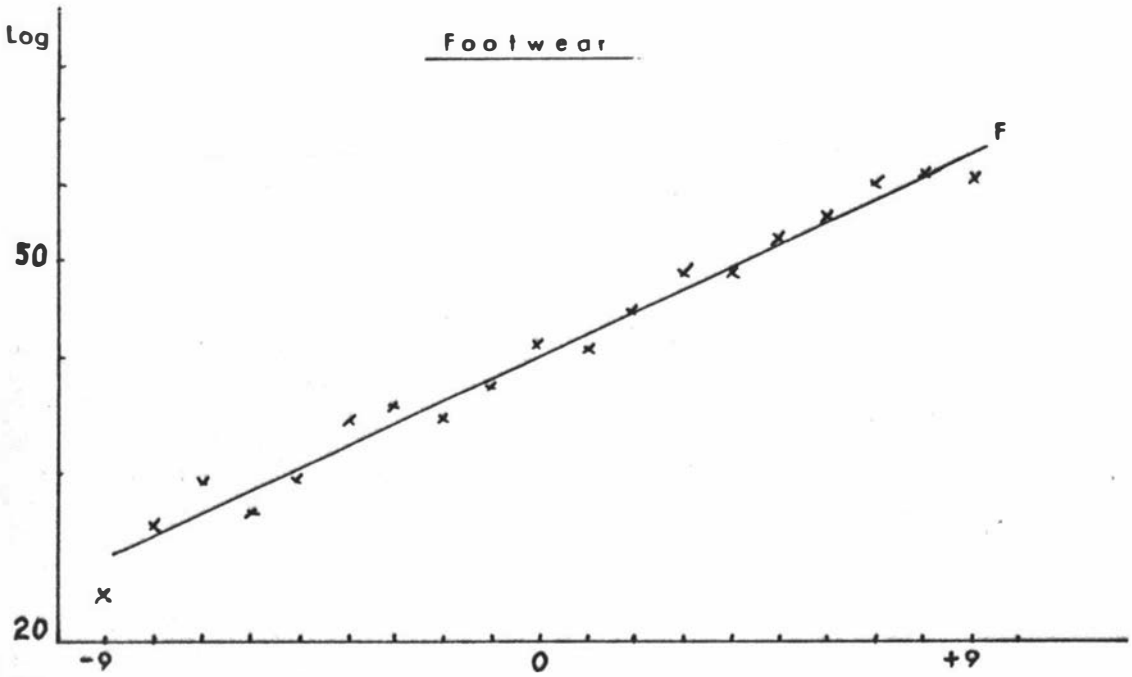


FIG. 175

Footwear



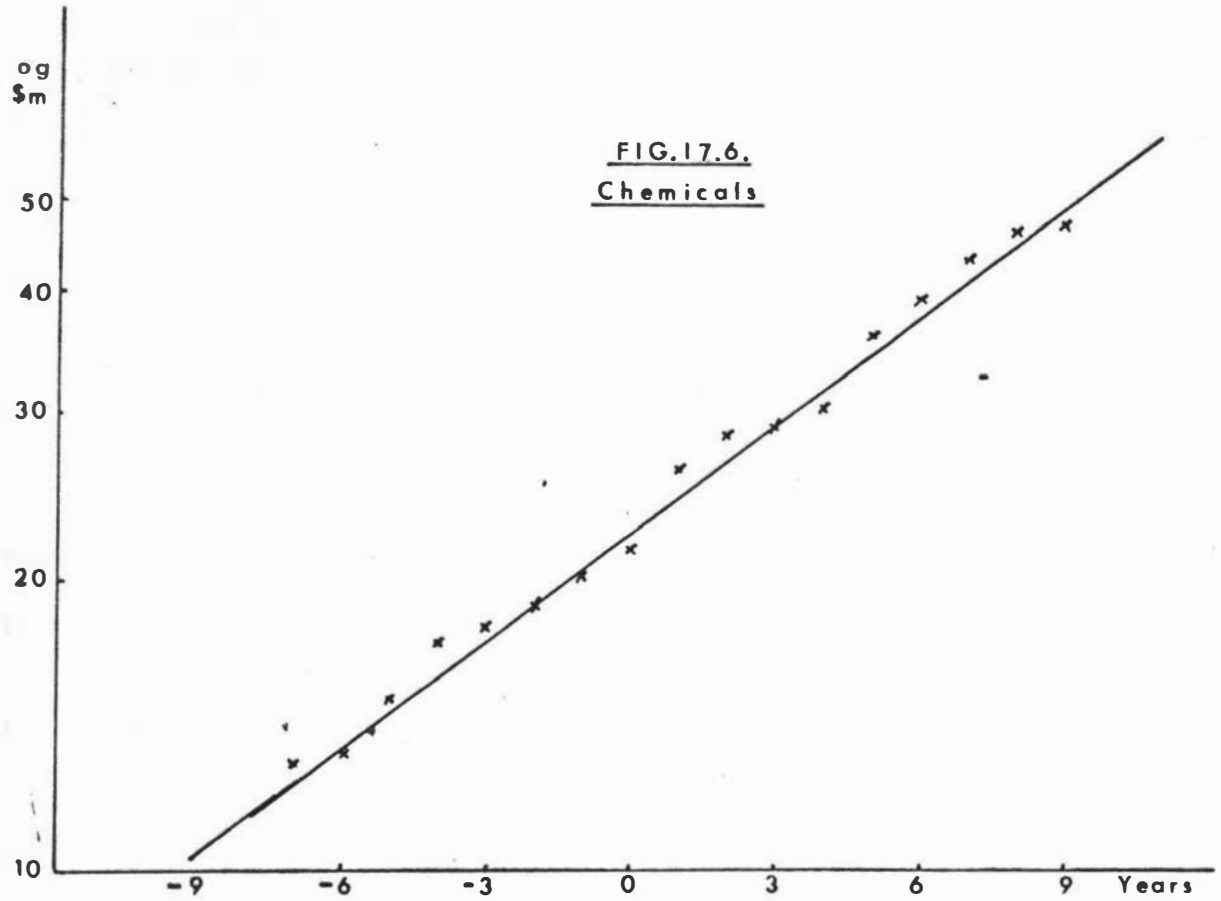


FIG. 17.6.
Chemicals

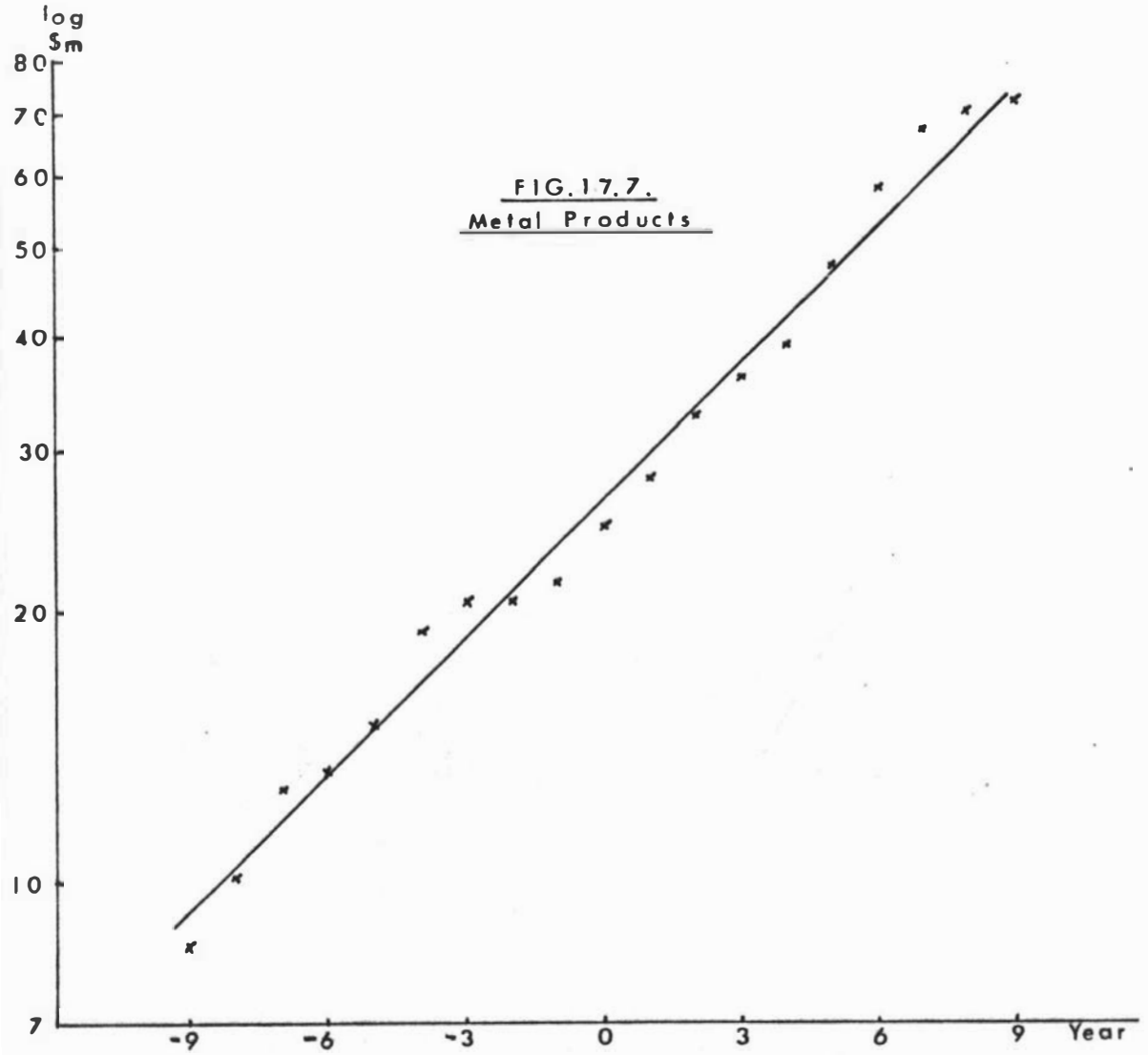


FIG. 17.7.
Metal Products

FIG. 17. 8.
Electrical

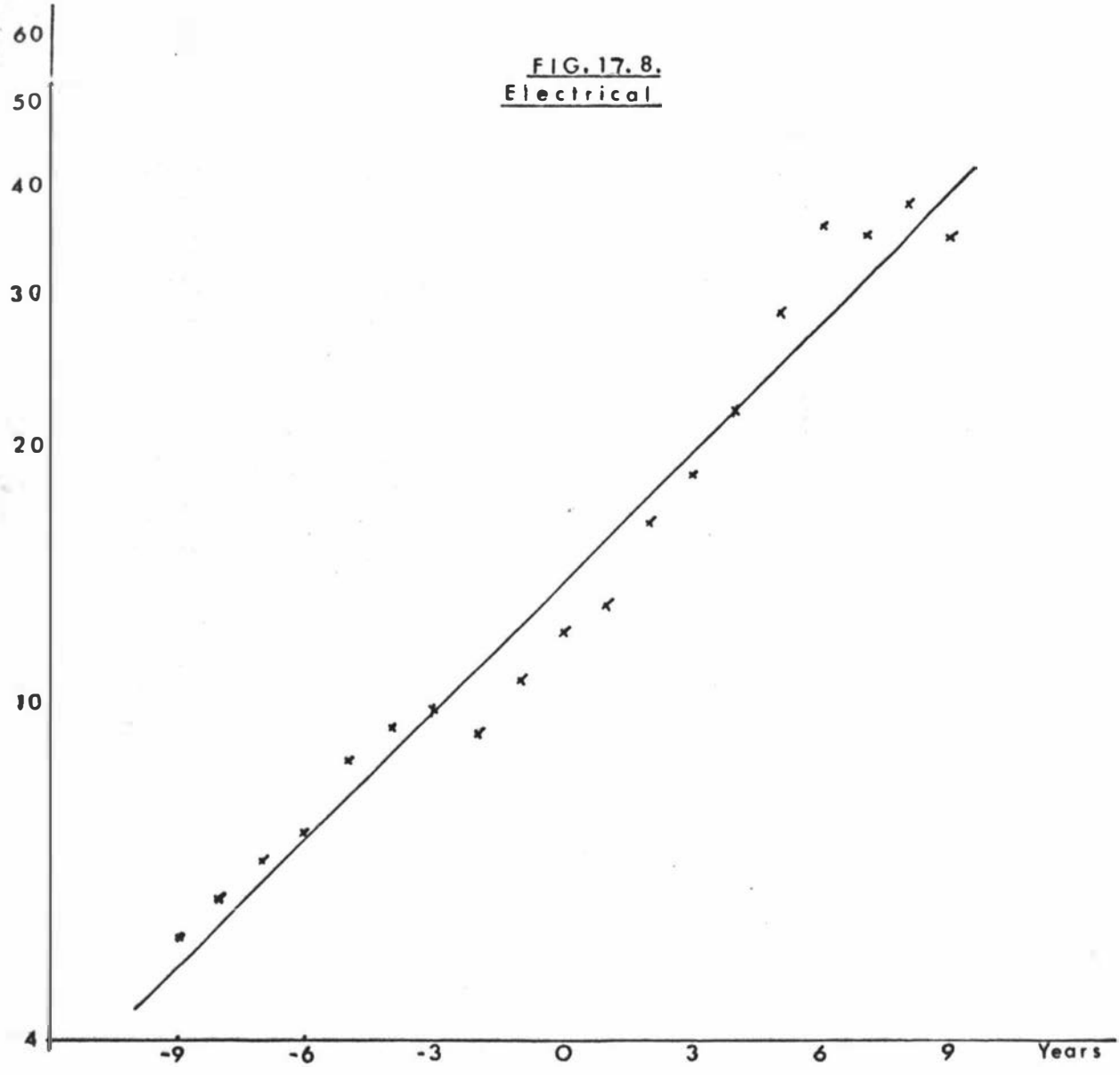


Fig. 18.3: shows Total Factory Product (value added, Col. (c))

$T.F. = (412.06)(1.1062^{x})$

Fig. 18.4: Textiles (Col. (e))

$T = (23.6)(1.0912^{x})$.

Fig. 18.5: Footwear/Apparel (Col. (g))

$F.A. = (39.779)(1.0556^{x})$

Fig. 18.6: Chemicals (Col. (i))

$C = (22.772)(1.0910^{x})$

Fig. 18.7: Metal Products (Col. (h))

$M = (26.25)(1.1225^{x})$

Fig. 18.8: Electrical Machinery and Appliances (Col. (m))

$E = (13.8)(1.1228^{x})$

The years 1958-63 are those in which import control was most severe; the years 1953-57 were most relaxed. If import controls stimulated manufacturing, one would expect that the cluster of crosses near year 0 would lie above the regression line and those in year -3 to -8 would lie below the line. In fact, there is no such pattern. In the only cases where any significant variation is apparent, Total Factory, Metal Products, Textiles and Electrical Goods show more rapid growth in the late fifties and less rapid expansion in the early sixties.

The conclusion must be that economic growth is dependent primarily on other factors - internal full employment, monetary and fiscal policies, natural expansion forces, world conditions, etc., and that controls on trade, at least in New Zealand, had little effect on the rate of economic growth.

It is still very possible, however, that controls had considerable effect on the direction of growth - that they channelled growth into lines of production which might otherwise not have developed. To what extent this is true cannot be established because no-one can positively say what would have happened had controls not existed. For example, in the absence of controls, it is unlikely that woollen textile and carpet manufacture would have enjoyed a comparable rate of expansion or that television sets would ever have been produced in New Zealand. But it is arguable that other industries - nylon, plastics, toy-making, etc. - which have not developed in New Zealand, have not done so because of the protection afforded woollen and electrical goods. The whole argument is inconclusive. What seems to be fairly clear is that, given Full Employment, manufacturing would have developed even in the absence of controls, although not necessarily in the same sectors.

A brief summary of the various effects of controls can assist in drawing a final conclusion.

Balance of Payments Effects:

Theory: The use of quantitative controls is attractive, especially in the short run. The desired stringency of control can readily be calculated in the light of current foreign exchange earnings, control is comparatively easily administered and imported commodities can be selected with a view to long-term growth requirements as determined by a control planning agency. Elasticities of demand and supply can be ignored; there is no danger of foreign price adjustment (dumping) or inelasticity of

home demand surmounting the kind of barrier imposed by tariff. Selected internal industry can be guaranteed protection and can plan expansion in an atmosphere of confidence. It is little to be wondered at, that such a policy is easily entered into, especially when one considers that political support can be won from benefiting groups.

The long-term effects of sustained controls depends partly on internal industrial growth and partly on foreign reaction. The analysis of Chapters 4 to 8 illustrates that increasing internal demand pressures are likely to place a strain on internal supply resources, creating inflationary pressures, labour shortages and a movement of resources away from exportable into the importable and internal sector. The result is a redirection of growth away from "natural" channels and a relative reduction in trade. Such a move may have desirable political and economic aspects, in that it reduces dependence on foreign countries, insulates the home country against economic changes abroad, makes prosperity less dependent on shifts in demand and the terms of trade and fosters national pride. At the same time it loses the benefits to be gained from specialization and exchange.

The possible effects of foreign repercussion can be demonstrated by an offer curve type analysis shown in Figure 18.9(a) adapted from I. F. Pearce 'The Problem of the Balance of Payments' (I.E.R. January 1961). The box A0B0 represents the production/consumption box of two countries. The home country, A, produces quantity A0 and the foreign country, B, produces B0. A set of community indifference curves (nct shown) from origin A would give a home

offer curve of the form OEa. Similarly, the foreign country would have an offer curve of the form OEb. 'Natural' free trade equilibrium is at E with country A consuming AN of her own product and importing AJ; Country B consumes BL of her own product, importing BM (= AN). The line OE (slope = $\frac{BM}{AJ}$) shows barter terms of trade.

If a situation of imbalance exists, there are a number of methods of returning to E. For example, when terms of trade are unduly favourable to Country A, such that terms of trade are as shown by OFG in Figure 18.9(b) with the home country aiming to consume at G and the foreign country at F, there is excess supply of home-country product equal to HN; there is, of course, a matching excess demand for the supply of foreign products but if stocks are held, such an excess may be quite acceptable for a considerable period of time.

The free trade way to equilibrium is to permit adjustment of the Terms of Trade until equilibrium is restored. Such an adjustment may take time and require a period of unemployment of up to UO (=HN) to maintain external balance until gradual readjustment induces a change in the terms of trade to OE at full employment. With completely specialized and immobile factors of production, the adjustment might be delayed indefinitely.

Direct control, either by tariff or quota, is imposed when exchange rate, price or employment levels are deemed to be fixed. The home offer curve is moved as shown in Figure 18.9(c) to OrG_{11}, in the case of tariff, or to OrG_{11} in the case of quota.

FIG. 17.9a

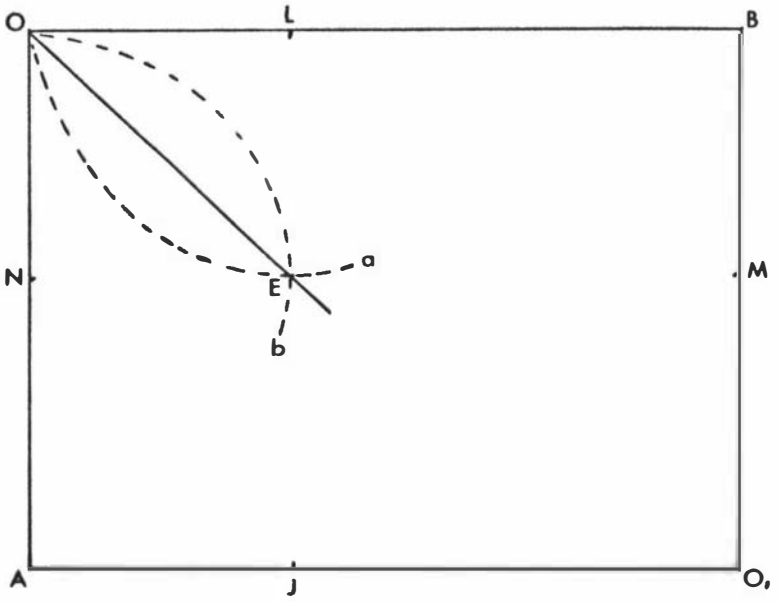


FIG. 17.9b

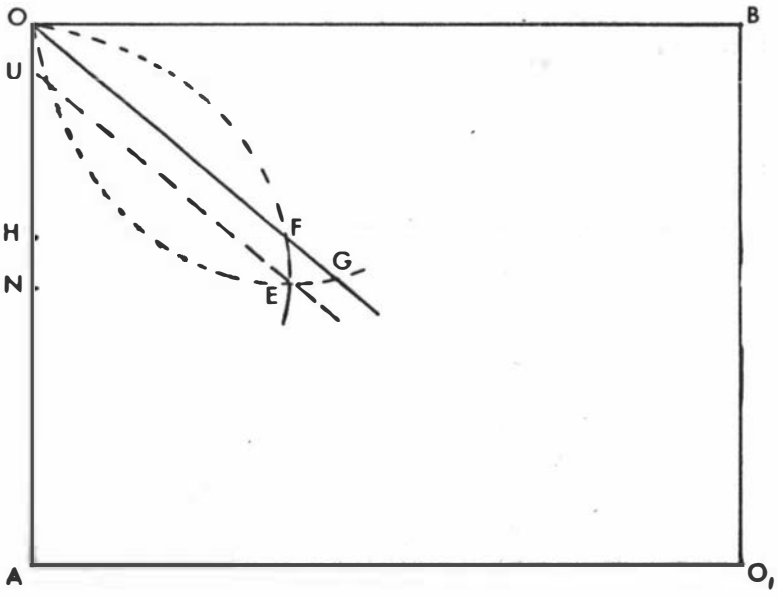
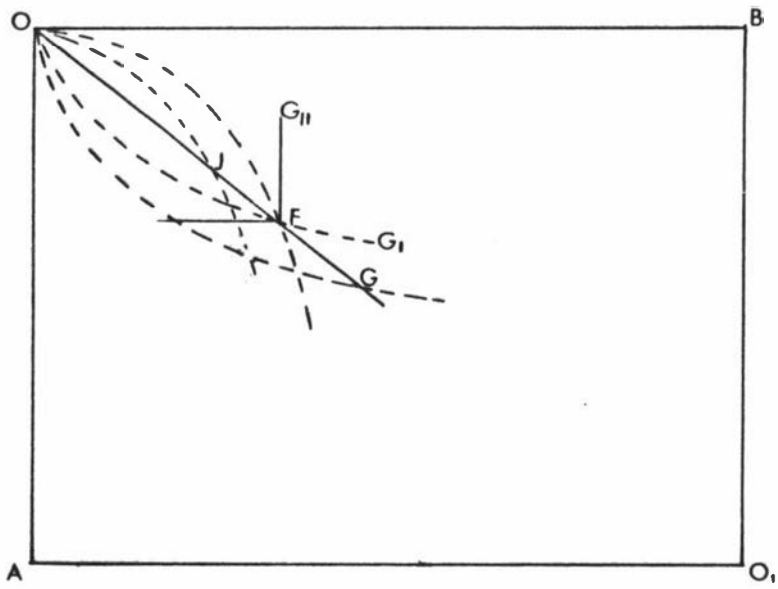


FIG. 17.9c



As long as the foreign country does not react, balance is restored at F by forcing home consumers from G to F - on to a lower indifference curve.

Unfortunately, the foreign sector is made up of many countries and such a move is likely to create reduced demand for one or more of these countries. In a multilateral trading world, those affected are likely to carry out similar restrictive policies which have cumulative effects around the world. The final effect, which is likely to be delayed and not traceable to the initial cause of restriction by the home country, is that the foreign offer curve is likely to shift to OJK, producing an imbalance similar to the original. The only difference is that world trade is reduced and everyone is worse off.

The lesson to be learned is that it is neither ethical nor practical to try to 'export' unemployment or deficit; the foreigner is unlikely to permit such policies to take effect.

A complication arises in that, while the imposition of control is likely to invite retaliation, the removal of control is not likely to induce similar reaction abroad, since it confers upon foreigners a trading advantage which they may be delighted to accept and feel no obligation to pass on. This is easily seen by considering the effect in Figure 18.9(c) of a return of home offer curve to OG. Thus, imposition of control is the unilateral act of one country; removal of control is often possible only by international agreement. In such a context the problem for a small country like New Zealand is not one of considering the removal of control, but of substituting tariff for quantitative import control.

Practice: In practice, the balance of payments effects of import control in New Zealand have been even less successful than the theoretical analysis has indicated. A glance at the current account balance column on Page 243 shows that, over the period in question, the size of deficit tended to grow. Once again, conclusions are drawn from conjecture rather than from observable fact because it cannot be stated definitively whether import levels would have been higher or lower in the absence of controls, and to what degree export growth would have compensated for any import growth. What is clear is that it is impossible for such a country as New Zealand to cure balance of payments' problems by direct control. A large proportion of imports (see Table page 276) is in the form of investment goods which are essential to growth. As manufacturing grows, this kind of import requirement increases. In addition, much of the manufacturing which has developed in the last twenty years has been in the assembling and processing of partly-manufactured imported inputs. A reduction of consumer imports is partly offset by the increase in intermediate goods. This lack of success in maintaining external equilibrium during the decades of the fifties and sixties no doubt had the beneficial side effects of helping to reduce the inflationary pressures normally associated with over full-employment. Significantly, the rectifying of external disequilibrium and the restoration of full employment from 1968 onwards contributed to the inflationary pressures of the ensuing years.

It is reasonable to conclude, in the balance of payments context, that the basic cause of recurring deficits was that the

New Zealand currency was over-valued. Import controls might well have corrected a short-term deficit, but were of little use as a means of longer-term control of trade. Exchange rate adjustment was inevitable and the argument for fluctuating or 'adjustable peg' rates is very strong. Accompanied by selective tariff, this appears to be a more flexible and more effective external policy measure.

Full Employment:

Theory: Quantitative controls, in transferring demand to internal sectors, maintains employment in those industries which are threatened by foreign competition. Two results are possible:

1. In conditions of under-employment, work will be created or maintained and the economy may approach nearer the full-employment level. However, this result is entirely dependent on there being no foreign reaction, which could "re-export" unemployment, though not necessarily to the same sector.
2. In conditions of full-employment, protection of industry must result in the transfer of productive factors from other sectors. The act of protection is an acknowledgement of the relative inefficiency of the protected sector and it must be concluded that any such transfer is likely to lead to a mis-allocation of resources.

In the New Zealand context, this suggests that the introduction of (temporary) Import Control in 1938 had some justification on the two grounds that it maintained employment and provided the opportunity for the establishment of infant industry. There seems little ground for the continuation of controls after 1948, although there might be a case for the protection of one or two infant

industries deemed worthy of some temporary support. The general level of employment, as distinct from the protected sector, appears to depend primarily on other factors - Government monetary and fiscal policy, population and demand growth, technology, world economic conditions, etc. - and is not significantly influenced by trade control.

One side effect of the combined full employment / protection policy is the somewhat paradoxical effect on mobility. Labour shortages in some sectors causes excess mobility of labour. New Zealand has one of the highest figures in the world, averaging 33% per annum (1955-66) compared to 28% for Australia, 20% for U.S.A. and 18% for Great Britain. This mobility is highest in semi-skilled manufacturing; the highest regional level being in Lower Hutt, which exceeds 100% per annum. By contrast, the support extended to declining industry reduces incentive to move from such areas and occupations - the labour turnover in Westland is less than 10%.

Other Economic Effects:

Monopoly: Trade restrictions of any kind are likely to foster monopoly growth. The greater the protection afforded, the greater the possibility of monopoly. Import controls are the most severe and most effective protective measures available and it must be concluded that they are most conducive to monopoly.

Consumption: To the extent that some commodities are not obtainable, their substitutes of inferior quality and the home-produced article of higher price, there is a loss of consumer satisfaction.

Foreign Exchange: Restrictions placed on the availability and use of foreign exchange holdings induce New Zealand nationals to withhold, whenever possible, foreign exchange earnings and build up private stocks of overseas holdings. Other considerations are present - the evasion of tax on income and the attraction of higher interest rates on foreign money markets, but an important consideration is that, once money is paid into the official reserve, it is frozen.

None of these three effects can be quantified. They involve such indefinables as consumer satisfaction or require unavailable statistics on illegal or evasive acts which, by their very nature, are undisclosed. The degree to which import controls have had such effects is therefore largely a matter of opinion. It is indisputable, however, that all three effects have taken place to some extent.

Administrative Problems:

It should be sufficient to gather together and list some of the problems of administration involved in an Import Control system.

(a) Sorting Applications: The allocation of import licences and / or foreign exchange to individual applicants is necessarily a somewhat arbitrary process. Importers tend to overstate requirements, anticipating some reduction in their application. The 'honest' dealer, who does not make exaggerated claims, can be penalized.

(b) Estimates and Notification: Import requirements for any given time period must be assessed at least one year in advance in order that importers be notified, claims received, appeals

heard and licences issued. This means that officials must anticipate changes in demand, investment and production requirements and export earnings for a future period.

(c) New Firms: Access to import licences is necessary for the growth of any new company - trader or producer. To the degree that licences are issued to firms on the basis of previous allocations, and goods re-allocated by importers to established customers, new firms find themselves without the necessary requirements for growth or forced to pay excessive prices to acquire the goods - even to the extent of buying up older firms in order to obtain their licences.

(d) Transfer of Licences: One of the greatest problems has been the dilemma of maintaining a balance between flexibility and control. Rigid control means that each licence is specific to an importer, for a closely defined commodity from a specified source. But, with changing demand and supply conditions, this can result in over-importation of unwanted goods and shortages of wanted ones. On the other hand, increased interchangeability of licences increases the possibility of evasion of regulations, misallocation of funds and importation of 'undesirable' high-profit luxuries instead of those commodities deemed necessary.

(e) Payment: Placing orders, receiving goods, and payment frequently fall into three separate licensing periods. For heavy machinery and transport equipment (e.g. a ship) some years may elapse between initial order and final payment.

This makes it difficult for importers to plan ahead with confidence when there can be no certainty about future availability of funds or licences. It makes it equally difficult for the administration to match licence allocation with exchange usage, especially if licences are issued in general terms for a variety of commodities from different sources, being paid for at different times.

(f) Bureaucracy: As with all control, a very real cost is the large administrative machinery required to operate. The Department of Industries and Commerce, for instance, grew from fewer than 100 officials in 1938 to over 400 in 1969 and much of the growth is due to the administration of import control regulations. The Customs Department has grown comparably and every government official is matched by an employee in the private sector engaged in operating the regulations.

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W. D. Rose — Manufacturing Exports, Import Substitution and Industrial Development
N.Z.I.E.R. (1970)

APPENDIX A

The computer programme used for the process whose results are presented and analysed in Chapters 5 and 6 is reproduced below:

I.B.M. 1620 FORTRAN

A. FREE TRADE.

```
51 Z CAP = 100.0
   PI    = 1.00
   PX    = 1.00
   PN    = 1.0
   PM    = 1.0
   DI    = 20
   ZI    = 20
   DXH   = 10
   DXF   = 20
   ZX    = 30
   DN    = 50
   ZN    = 50
   DM    = 20
   YEAR  = 0
   PRINT 200
   READ, GIY, GNY, GXI, GI, GN, GX, EIY, ENY, EXY, EMY, EI,
         EN, EXH, EXF, EM
   PRINT 201, GIY, GNY, GXY, GI, GN, GX, EIY, ENY, EXY, EMY,
         EI, EN, EXH, EXF, EM
   PRINT 202
50 IF (SENSE SWITCH 9) 2,1
 1 IF (ZI GI-DI EI)20,40,20
20 DPI = ((DI EIY-ZI GIY) 0.05)/(ZI GI-DI EI)
   GO TO 41
40 DPI  = 99
41 DDI  = DI EIY*0.05+DI EI*DPI
   DZI=ZI*GI*DPI+ZI*GIY*0.05
   DDM  = DM*EMY*0.05
```

```
      IF(DXH*EXH+DXF*EXF-ZX*GX)21,42,21
   21 DPX=((ZX*GXY-DXH*EXY)*0.05/(DXH*EXH+DXF*EXF-ZX*GX))
      GO TO 43
   42 DPX=99
   43 DDXH=DXH*EXY*0.05+DXH*EXH*DPX
      DDXF=DXF*EXF*DPX
      DZX=(ZX*GXY*0.05)+(ZX*GX*DPX)
      IF(ZN*GN-DN*EN)22,44,22
   22 DPN=((DN*ENY-ZN*GNY)*0.05)/(ZN*GN-DN*EN)
      GO TO 45
   44 DPN=99
   45 DZN=ZN*GNY*0.05+ZN*GN*DPN
      DDN=DN*ENY*0.05+DN*EN*DPN
      DI=DI+DDI
      PI=PI+DPI
      ZI=ZI+DZI
      DXH=DXH+DDXH
      DXF=DXF+DDXF
      ZX=ZX+DZX
      PX=PX+DPX
      DN=DN+DDN
      ZN=ZN+DZN
      PN=PN+DPN
      DM=DM+DDM
      DPM=0
      PM=PM+DPM
      ZCAP=ZCAP*1.05
      EH=ZCAP-(ZI+ZX+ZN)
      EF=DXF*PX-DM
      YEAR=YEAR+1
      PRINT 203,YEAR,DI,ZI,PI,DXH,DXF,ZX,PX,DN,ZN,PN,DM,PM,EH,EF
      IF(YEAR-20.)50,51,51
  200 FORMAT (76HO, GIY GNY GXY GI GN GX EIY ENY EXY EMY E
     II  EN  EXH  EXF  EM)
  201 FORMAT (1H, 15F5.1//)
```

```
202  FORMAT (136HO    YEAR    DI    ZI    PI    DXH    DX
     1F       ZX       PX       DN       ZN       PN       DM       PM
     2       EH       EF)
203  FORMAT (IH,15F9.3//)
  2   END
```

B. TARIFF:

PI was given the value 1.25 for the processing section, but value 1.00 was retained for calculation of external balance.

C. CONTROL:

The following adjustments were made to the Free Trade programme:

```
  1  DM = DFX PX.....(inserted after 50 1F.......)
 20  DPI=(((DI*EIY-YI GIY*.05)+.66*DDM)/(ZI*GI-DI*EI)
 41  DDI=DI*EIY 0.05+DI EI*DPI.66 DDM
 22  DPN=((DN ENY-ZN GNY)*0.05+.33 DDM)/(ZN GN-DN EN)
     DDN=DN ENY 0.05+DN EN*DPN+.33 DDM
     EH=ZCAP-(DI+DXH+DXF+DN)
```

APPENDIX B

The programme used for the Chapter 8 analysis used the same introduction as that shown in Appendix A and was then adjusted as follows:

```
20 DZI=(((DI EI)-(ZI GI)) .03)/(ZI GIY)-(DI EIY)
   GO TO 41
40 DZI = 0.05
   PRINT 205
41 IF ((ZN GNY)-(DN ENY))21 , 42, 21
21 DZN=(((DN EN)-(ZN GN)) .03)/ZN GNY)-(ON ENY))
   GO TO 43
42 DZN = 0.05
   PRINT 204
43 DZXF = (DXF EXF) .0?
   DXFB = (DXF+DZXF) 1.03
   DZX=(((DXH EXH)+(DXF EXF)-(ZX GX)) .03)/((ZX GXY)-(DXH EXY))
   DZCAP=((ZI DZI)+(ZN DZN)+(ZX DZX)) 1.03
   ZCAP = ZCAP 1.03 + DZCAP
   DZCAP= ZCAP - 100
   DDM = (DZCAP EMY 0.2)+(DM EM 0.03)
   DM  = DM + DDM
   DXF = DXFB
45 ZI  = (ZI+ZI DZI) 1.03
   ZN  = (ZN + ZN DZN) 1.03
46 ZX  = (ZX + ZX DZX) 1.03
   XB = DXF - DM
PRINT
```

Adjustments for Tariff and Control Policies were comparable with those of Appendix A.

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