AGRICULTURAL ECONOMICS RESEARCH UNIT

Lincoln College

STRATEGIC AND TACTICAL PLANNING IN INTERNATIONAL MARKETING POLICIES

by

B. P. PHILPOTT

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THE AGRICULTURAL ECONOMICS RESEARCH UNIT

The Unit was established in 1962 at Lincoln College with an annual grant from the Department of Scientific and Industrial Research. This general grant has been supplemented by grants from the Wool Research Organisation, the Nuffield Foundation and the New Zealand Forest Service for specific research projects.

The Unit has on hand a long-term programme of research in the fields of agricultural marketing and agricultural production, resource economics, and the relationship between agriculture and the general economy. The results of these research studies will be published as Unit reports from time to time as projects are completed. In addition, it is intended to produce other bulletins which may range from discussion papers outlining proposed studies to reprints of papers published or delivered elsewhere. All publications will be available to the public on request.

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NOTE

This paper is a reprint from the Proceedings of a Conference on Marketing, sponsored by the Department of Extension Studies and the Faculty of Commerce, University of Canterbury, in July 1965.

The aim of the Conference was to stimulate discussion on methods of market analysis and market planning, and in writing the paper considerable emphasis was given to this aspect.

B.P. Philpott.
STRA TEGIC AND TACTICAL PLANNING IN INTERNATIONAL MARKETING POLICIES

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1 INTRODUCTION

The rather grandiose title of this paper was chosen for me by the sponsors of this conference and I have taken the liberty of interpreting it to suit my own convenience. The matters which I want to discuss today are concerned with the role of market forecasting and projection. Planning the future marketing of our export agricultural products, like any other form of economic planning will only be as good as the information on which those plans are based and the particular information required refers to the likely future course of demand and prices for our products. I want to talk about both long term projections and about short term forecasts and marketing policy models based on them and I have chosen therefore to identify strategy with the long term development of marketing say over the next decade and tactics with the spot decisions and short term policies which have to be executed month by month and year by year. This I hope will become clearer as we proceed.

My major aim in this paper is to let you see what is feasible and possible and in general to stress the role of research in the field of marketing management; to give you some idea of the research in progress at the Agricultural Economics Research Unit; and to get your own criticisms, ideas and suggestions for further research in the field of marketing export agricultural products.

2 THE INTERNATIONAL ECONOMIC SETTING

2.1 I want, first, to take a brief look at the international setting in which we find ourselves as it affects the sale of our exports. The following seem to me to be the most important and relevant characteristics of the scene in the late sixties.

2.1.1 The decline in agricultural trade as a proportion of world trade as compared with its rapid growth in earlier years of our history.

2.1.2 The rise and apparent permanence of agricultural protectionism in America, Europe, Britain. To the extent that this protectionism is based on irrational economic considerations such as hangovers from the 1930's, political pressures, false doctrines about import saving, difficulties in multilateral trade etc., then this trend may be reversed and increased trade, based on the realities of comparative cost, emerge—as it already has to some extent with European beef imports—but it would be foolish to rely too much on this.

The most damaging aspect of this protectionism from N.Z. point of view is of course that the weapons frequently used are physical quotas about which a low cost producer can do absolutely nothing.

2.1.3 The failure of G.A.T.T. to deal with the problem of protection in agricultural trade.
2.1.4 The formation of E.E.C. and the ultimate inevitability in my view of Britain's entry.
2.1.5 The expiry in 1967 of the Ottawa agreements and the end therefore of a long period of free entry to the British market of our export food products to be replaced, most likely, by quota controlled imports of meat and dairy produce.
2.1.6 The fortunate and rapid rise of the Japanese market for N.Z. foods.
2.1.7 The general world trend towards large centralised marketing and trading agencies in agricultural products—either government or producer controlled. With this has grown up a tendency, mentioned before, towards greater quantitative control of agricultural trade, greater accent on price stability rather than price competition, a greater degree of planning in international agricultural trade so that the marketing of agricultural products has become much more like the marketing of industrial products.

2.2 To me, the general implication of all these factors is as follows:
(i) Because of its small size New Zealand's bargaining power in trade is very small indeed and the only bargaining power that we had in the past viz: the cheapness of our products, is becoming less and less valuable though it is still a selling point which we must continually use in the hope that one day overseas buyers will exercise commonsense and recognise cheapness as a virtue.

The weakness of our bargaining position in international trade, stemming from the smallness of our own market, provides a further argument if one were needed, for pressing on with closer economic ties with Australia.
(ii) We must match the overseas trend towards centralisation of marketing power, by similar developments in New Zealand and, recognising the diminished role of prices in international trade and the rise of planning, we must think in similar terms and develop a coherent long term view of what is feasible by way of increased agricultural exports, where we can sell them, in what quantities and at what prices.
(iii) These suggestions with regard to market planning are reinforced by the trend, already evident, towards general economic planning in New Zealand—especially in its present form of indicative planning and target setting. This relationship of market planning to general economic planning we now consider in rather more detail.

3 MARKET PLANNING IN RELATION TO NATIONAL ECONOMIC PLANNING

3.1 The process of economic planning is concerned basically with two things
(a) Establishing long term objectives for the economy
(b) Choosing the most efficient methods or policies for achieving these objectives.

Economic planning, in which attempts are made to push the economy towards some desirable goal, is thought to be a substitute for the free play of laissez-faire and the price mechanism which, while probably achieving the same end result, would probably do so more slowly and involve more mistakes and greater social cost.

In Western democratic societies the aim of economic planning is not to
<table>
<thead>
<tr>
<th>Purchases from</th>
<th>Primary</th>
<th>Processing</th>
<th>Secondary</th>
<th>Tertiary</th>
<th>Consumer</th>
<th>Govt.</th>
<th>Exports</th>
<th>Additions to Capital</th>
<th>Total Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Industry</td>
<td>—</td>
<td>138</td>
<td>43</td>
<td>4</td>
<td>26</td>
<td>3</td>
<td>67</td>
<td>4</td>
<td>285</td>
</tr>
<tr>
<td>Primary Processing Industry</td>
<td>1</td>
<td>—</td>
<td>9</td>
<td>2</td>
<td>20</td>
<td>—</td>
<td>137</td>
<td>4</td>
<td>173</td>
</tr>
<tr>
<td>Secondary Industry</td>
<td>34</td>
<td>2</td>
<td>—</td>
<td>59</td>
<td>224</td>
<td>20</td>
<td>19</td>
<td>164</td>
<td>522</td>
</tr>
<tr>
<td>Tertiary Industry</td>
<td>35</td>
<td>8</td>
<td>64</td>
<td>—</td>
<td>365</td>
<td>100</td>
<td>37</td>
<td>74</td>
<td>683</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Primary Inputs Used</th>
<th>Labour</th>
<th>Profits</th>
<th>Depreciation of Capital</th>
<th>Imports</th>
<th>Total Inputs</th>
<th>Labour Force '000</th>
<th>Real Capital £mn 54/55 Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>118</td>
<td>70</td>
<td>15</td>
<td>12</td>
<td>285</td>
<td>150.3</td>
<td>900</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>173</td>
<td>19.5</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>155</td>
<td>103</td>
<td>14</td>
<td>134</td>
<td>522</td>
<td>260.4</td>
<td>435</td>
</tr>
<tr>
<td></td>
<td>227</td>
<td>209</td>
<td>32</td>
<td>150</td>
<td>683</td>
<td>371.7</td>
<td>1360</td>
</tr>
</tbody>
</table>

TABLE I
NEW ZEALAND INTERINDUSTRY TRANSACTIONS

Intermediate Products Industry

Final Demand

Labour Force '000 150.3 19.5 260.4 371.7
Real Capital £mn 54/55 Prices 900 63 435 1360
supplant private enterprise and individualism but to provide a general framework in which it may operate more effectively and efficiently. The key requirement for the drawing up of a coherent consistent economy is adequate statistical information especially information concerning key economic relationships in the economy such as demand patterns, capital-output ratios etc.

3.2 In New Zealand the objective of planning is to raise the rate of economic growth such that gross national product rises by 4 per cent per annum, consistent with full employment and overseas balance of payments equilibrium.

The most efficient way of achieving this depends on a host of factors, the implications of which can only be understood in the context of a full-scale input output model of the economy. Because the New Zealand economy is at present so heavily dependent on exports and because the export sector is so closely interrelated with the other sectors of the economy the basic question to be asked and answered in choosing the most efficient way of raising economic growth is, should there be increased exports, increased import substitution or an appropriate and efficient mixture of both of these things?

A condensed version of the input-output structure of the New Zealand economy in 1954/55 is given in Table 1. To use this to choose the most efficient way of raising gross national product we would need to project into the future, by appropriate amounts, the final demand shown in the top right section of the table and then by appropriate mathematical programming procedures we could answer the question ‘What allocation of resources between all other sectors would best produce this level of final demand and assure full employment and balance of payments equilibrium?’ Naturally in such an exercise we would need a much more detailed input output table of at least about 100 sectors but the principles remain unaltered.

3.3 The important items of information required to solve the programming problem set out above are as follows:

(a) Internal Demand Coefficients expressing the relationship between increases in gross national product and the internal demand for each sector’s product.

(b) Internal Production Coefficients expressing the amounts of capital and labour required per unit of output from each sector preferably after allowing for the effect of future technological change.

(c) Interindustry Coefficient expressing the interrelationships in production between different sectors.

(d) Export Demand Projections using known relationships between prices of each export product and the quantities which can be sold at that price to establish a range of possible export values for various different export product mixes.

3.4 Given all this information, and given the target rate of growth in gross national product, we could then solve the problem of finding the best or most efficient structure of the economy to provide this rate of growth. With such a structural blueprint of the economy, the appropriate policies could then be devised to achieve this desirable structure including the appropriate inducements to import substitution, the appropriate export incentives and the appropriate marketing policies and institutions to achieve the desirable export mix as far as different products are concerned.

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This is of course all very theoretical and academic though there is quite a lot of research work proceeding overseas and also in my own Department on such planning models. Their major usefulness at present is to explore the implications of various alternative structural changes in the economy and in particular the effects on economic growth of various alternative rates of export achievements in the future. But it will be a long time before economic planning can proceed, as it should, on the basis of such full scale planning models and in the meantime planning has to proceed by much more approximate methods.

3.5 Such approximate, but nonetheless broadly correct methods, underlie the planning involved in the agricultural export targets of 4 per cent per annum recently established by the Agricultural Development Conference. These targets have been shown to be essential if an overall economic growth rate of 4 per cent per annum is to be achieved over the next decade. This, however, is an overall agricultural export target and still requires to be broken down into specific export targets for each of our major export products. Strategic planning for future overseas marketing in New Zealand, I regard therefore as the setting of specific market projections or targets, product by product, and the establishment of appropriate marketing policies and institutions not only to achieve these product targets but also to implement the necessary quick tactical changes in posture demanded by unforeseen changing world conditions and by the inevitable amendment that such projections and targets will require as time goes by.

4 METHODOLOGY OF PROJECTIONS AND FORECASTING

4.1 There is not time to go into this matter in great detail and my main aim is to simply give a very brief description accompanied by some examples.

Projections of demand for export products depend basically on establishing the nature of the determinants of demand and then projecting forward the future changes which we think will occur in these basic determinants. Only a little is known about the determinants of demand for New Zealand’s main export products, even in established markets, but the following tables and diagrams, based on work at the Agricultural Economics Research Unit, suggest that prices and consumer incomes in Britain, at any rate, are important variables in explaining demand for various types of meat and dairy produce.

4.2 The tables and diagrams give the result of regression analyses explaining changes in British retail consumption of five types of meat, butter and cheese as measured by the National Food Survey from a large random sample of British households. Table 2 gives the results for meat, these results being in the form of price elasticities, cross elasticities, income elasticities and seasonal shift factors. The results for lamb and mutton and beef and veal together with the relevant equations are plotted on Diagrams I and II which give a picture of the fairly good degree of explanation of consumption variation achieved by the analysis. The important point to note about this analysis is the degree of substitution between different meats in Britain—a matter to which we will return shortly. (We are now in the Research Unit carrying this analysis further by investigating reasons for different trends and levels of meat consumption in different districts and regions of U.K.)
Table 3 gives results of a similar analysis for butter and cheese and the butter analysis is shown graphically in Diagram III. Lastly, in Diagram IV, we have the results of an analysis of factors affecting the trend in world wool prices as expressed in the following equation:

$$\text{Log Price of Wool} = 2.34 - 2.33 \text{Log Supply of Wool Per Head of world population}.$$  
$$- 0.14 \text{Log Supply wool type synthetic per capita.}$$  
$$+ 2.32 \text{Log Real Income per capita.}$$  
$$+ 0.16 \text{For years following end of textile rationing.}$$  
$$- 0.01 \text{Time.}$$

This equation indicates that in the recent past, other things equal:

(a) For every 1% rise in world per capita real incomes wool prices rose 2.3%  
(b) For every 1% rise in world per capita supply of wool prices fell 2.3%  
(c) For every 1% rise in world per capita synthetic supply wool prices fell 0.14%  
(d) There was a downward trend each year of 2.7%.

4.3 Numerous other and more complicated examples of demand analyses such as these could be given, but my purpose is only to give you examples of this sort of research as a basis for projection work which again is best illustrated by an example. In 1960 I did a provisional demand and price projection for lamb and beef in Great Britain in 1970. The results were presented in an unpublished paper to the N.Z. Association of Economists and the procedure was as follows.

(i) Given the expected rates of growth in British population and income and the income elasticities as given in Table 2, we calculated British demand at 1960 prices for lamb and beef, pork and poultry.

(ii) We then made some assumptions about the likely trend in supplies of these meats from Britain and the major exporting countries including an assumption of an increase of 4% per annum in supply of lamb and mutton from New Zealand, it being our purpose to explore the implications of this as a target figure.

(iii) These 1970 supply levels turned out to be, as we would expect, different from the 1970 demand levels and it was apparent that prices have to change to bring supply and demand into balance.

(iv) The extent of the price changes depended on solving set of equations involving the price elasticities and cross elasticities (again as in Table 2), so taking account of all the interrelationships between different meats.

(v) The conclusion we reached was that on the assumptions about levels of supply which we had used, prices of lamb and mutton would have fallen by about 16% by 1970, and prices of beef would have remained at their base year level even with a greatly increased supply from New Zealand and other suppliers.

Now this was very much a provisional piece of research but it served a useful purpose in indicating even then that beef was likely to be a very
### TABLE II
REGRESSION COEFFICIENTS FROM RETAIL DEMAND ANALYSES FOR MEAT IN U.K.

<table>
<thead>
<tr>
<th>Dependent Variable Log of Consumption of</th>
<th>Price of Lamb &amp; Mutton</th>
<th>Price of Beef &amp; Veal</th>
<th>Price of Poultry</th>
<th>Price of Pork</th>
<th>Price of Non-Carcase Meat</th>
<th>Real Disposable Income</th>
<th>2nd Quarter</th>
<th>3rd Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lamb &amp; Mutton</td>
<td>-1.43 (.18)**</td>
<td>.24 (.09)*</td>
<td>-54 (.20)*</td>
<td>1.44 (.30)**</td>
<td>.77</td>
<td>.06 (.20)**</td>
<td>.02**</td>
<td>.02**</td>
</tr>
<tr>
<td>Beef &amp; Veal</td>
<td>.38 (.16)*</td>
<td>-1.96 (.19)**</td>
<td>.33 (.18)</td>
<td>-0.09 (01)**</td>
<td>-0.09 (02)**</td>
<td>2.30 (.01)**</td>
<td>.95</td>
<td></td>
</tr>
<tr>
<td>Poultry</td>
<td>2.26 (1.06)*</td>
<td>-1.80 (.41)**</td>
<td>3.91 (.96)**</td>
<td>-5.42 (1.45)**</td>
<td>.87 (.97)</td>
<td>.24 (.08)**</td>
<td>.33 (.10)**</td>
<td>.73 (.96)</td>
</tr>
<tr>
<td>Pork</td>
<td>1.63 (.53)**</td>
<td>.42 (.20)*</td>
<td>-2.65 (.72)**</td>
<td>-1.25 (.48)**</td>
<td>-.12 (.04)**</td>
<td>-.18 (.05)**</td>
<td>-.69 (.89)</td>
<td>.89</td>
</tr>
<tr>
<td>Non-Carcase Meat</td>
<td>.34 (.09)**</td>
<td>-53 (.13)**</td>
<td>.26 (.08)**</td>
<td>.39 (.08)**</td>
<td>.92</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
1. All variables are expressed in logs so the coefficients are elasticities.
2. Figures in brackets are standard errors.
3. ** indicates that coefficient is significantly different from zero at 1% level.
4. * indicates that coefficient is significantly different from zero at 5% level.

Data from Household Food Consumption Survey of British Ministry of Agriculture.
TABLE III
REGRESSION COEFFICIENTS FROM RETAIL DEMAND ANALYSIS FOR BUTTER AND CHEESE

<table>
<thead>
<tr>
<th></th>
<th>Consumption of Butter</th>
<th>Consumption of Natural Cheese</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Log Consumption of Butter = $-0.47 \times \log \text{Price Butter} + 0.90 \times \log \text{Income} + 4.08$</td>
<td>Consumption of Natural Cheese = $-1.38 \times \text{Price Natural Cheese} + 40.00 \times \text{Income} + 0.08s^{1} + 1.27$</td>
</tr>
<tr>
<td></td>
<td>$R^2 = .87$</td>
<td>$R^2 = .63$</td>
</tr>
<tr>
<td></td>
<td>(.06)**</td>
<td>(.38)**</td>
</tr>
<tr>
<td></td>
<td>(.17)**</td>
<td>(6.4)**</td>
</tr>
<tr>
<td></td>
<td>(.04)*</td>
<td>(.04)*</td>
</tr>
</tbody>
</table>

1. Standard Errors in brackets
2. ** indicates that the coefficient is significantly different from zero at 1% level
3. * indicates that the coefficient is significantly different from zero at 5% level
4. Variables are measured as follows:
   - Cons: ozs/head/week
   - Price: pence/lb
   - Income: £/head/week
   - deflated by retail price index
5. Data from Household Food Consumption Survey of British Ministry of Agriculture.
ACTUAL AND ESTIMATED VALUES OF CONSUMPTION OF LAMB AND MUTTON

Log Consumption Lamb and Mutton per head
= -1.43 Log Price Lamb and Mutton
+0.24 Log Price Poultry
-0.54 Log Price Pork
+1.44 Log Price Non Carcase Meat
+0.77 Log Real Disposable Income per head
+0.06 in second quarter of year
Log Consumption of Beef and Veal per head
= -1.96 Log Price Beef and Veal
  + 0.38 Log Price Lamb and Mutton
  + 0.33 Log Real Income per Capita
  - 0.09 in second and third quarter of year

ACTUAL AND ESTIMATED VALUES OF CONSUMPTION OF BEEF AND VEAL
ACTUAL AND ESTIMATED VALUES FOR THE CONSUMPTION OF BUTTER

Log Consumption Butter
= -.47 Log Price Butter
+ .90 Log Income
+ 4.08
Log Price of Wool

= 2.32 Log per cap. Real Income
-2.33 Log per cap. Supply Wool
-0.14 Log per cap. Supply of Synthetic
+0.16 in three years following Derationing of Wool Textiles
-0.01 Time

DIAGRAM IV

Wool Price 1934/38 = 100

5 year moving averages
profitable product—which has turned out to be correct. The example also serves to illustrate a most important point that projections are only as good as the assumptions used but, even at that, if they serve to highlight the implications of our assumptions—in this case that we would send 4 per cent more lamb and beef to Britain—then they can be extremely useful and revealing especially if we use them to establish what happens when we vary the assumptions.

An example of a wool price projection¹ is given in Table 4. In this projection we attempted to answer the question ‘What will be the effect on prices if New Zealand wool production continues to increase at its present rate of 2% per annum (i.e. assumption (i) in Table 4); and what would be the effect if New Zealand wool production were stepped up to 5% per annum?

The key fact which emerges is that present rates of wool production can continue with prices declining if synthetic output increases do not exceed 17% per annum—a very high rate indeed. An increase in New Zealand production to 5% per annum would require synthetic output increases of less than 10% per annum if prices were not to decline. In addition to this we can establish the effect on prices of different rates of synthetic growth and show that, even if synthetic growth rates greatly exceeded the critical figures shown in the table, the decline in wool prices would still be fairly small.

5 STRATEGIC PROJECTIONS REQUIRED

5.1 We have done a lot more work on these sorts of projections since then, paying particular attention not only to the price reactions on the demand side but also allowing for the effect of changed prices on supplies of meat from our competitors but these are not yet ready for publication.

But the indications are that we should be increasing our production of wool, beef and mutton and slowing down our increase in lamb.

A very detailed set of projections for the dairy produce market has recently been completed by Mr A. R. Frampton of the Research Unit.²

TABLE 4
PROJECTION OF WOOL PRICES 1960-70 USING REGRESSION RESULTS IN DIAGRAM III

1. The Coefficients of the Regression Model are:
(a) Rise in real income per head in 22 countries of: 3.0% p.a.
(b) A 1% rise in supply of wool per head causes a 2.3% fall in wool prices.
(c) A 1% rise in synthetic supply per head causes a 0.14% fall in wool prices.
(d) Each year wool prices fall 2.7%—trend effect.

2. Assumptions re future growth rates of data:
(a) Rise in real income per head in 22 countries of: 3.0% p.a.
(b) Rise in population in 22 countries of: 1.2% p.a.
(c) Wool Supply in 22 countries:
   (i) With N.Z. production increasing at present rate world production will increase at 2.0% p.a. so world production per capital will increase at 0.8% p.a.
   (ii) With N.Z. production increasing at 5% p.a. world production will increase at 2.6% p.a. so world production per capital will increase at 1.4% p.a.

¹This projection and others like it are discussed more fully in my “Economic Implications of Increased Wool Production” A.E.R.U. Publication No. 5.
3. Implications for Wool Prices:

<table>
<thead>
<tr>
<th></th>
<th>Assumption (i)</th>
<th>Assumption (ii)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Effect of Income</td>
<td>3.0 x 2.3</td>
<td>+6.9% p.a.</td>
</tr>
<tr>
<td>(b) Effect of Wool Supply</td>
<td>0.8 x 2.3</td>
<td>+6.9% p.a.</td>
</tr>
<tr>
<td>(c) Effect of Time Trend</td>
<td>1.4 x 2.3</td>
<td>-1.8% p.a.</td>
</tr>
<tr>
<td>Net Effect of (a), (b), (c).</td>
<td></td>
<td>-2.7% p.a.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+2.4% p.a.</td>
</tr>
</tbody>
</table>

Allowable growth in production of Synthetic for Wool price stability (net effect ÷ 0.14)

This indicates, surprisingly enough, that provided we secure 75 per cent of the emerging Japanese market, we can increase dairy produce exports by 4 per cent per annum. In the absence of the Japanese market our target increase should be virtually zero.

5.2 Nevertheless this is only scratching the surface and what is needed is a thorough and continuing country by country and product by product examination. Such an examination is, by the way, being conducted on a world wide basis by the United States Department of Agriculture for the products in which it is interested as actual or potential exports and agricultural exports are of far less significance to that country than they are to us.

5.3 Lastly let me insist again that this task of export demand projection must be a continuing one. Projections and targets are not immutable but, almost by definition, they should be subject to amendment as time goes by and as conditions change and our experience in doing projection work improves.

6 TACTICAL SHORT RUN FORECASTING AND POLICY MODELS

6.1 In the introduction to this paper I identified strategic planning with setting up and acting on long term market projections. I want now to refer briefly to tactics which I identified with short term forecasting and short term policies to be executed month by month rather than over say a decade.

The methodology of short term forecasting and tactical marketing policy models based on such forecasting is basically similar to that mentioned above in connection with long term projections. Nevertheless it is more difficult because we are concerned with forecasting the immediate future rather than exploring the implications for the long term of a range of various assumptions about the key variables. Mathematical programming methods, which I referred to briefly in the case of national economic planning are used and have been used for short term marketing policy models for New Zealand as follows:

(i) Optimum scheduling of meat supplies to Britain

Taylor1 used a short term regression model to estimate the effect on monthly

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prices of New Zealand lamb in Britain, of supplies arriving and stocks in

store. On the basis of his results he showed how the arrivals of lamb could be

programmed to increase total annual sales revenue.

(ii) Optimum scheduling of New Zealand butter supplies to Great Britain

Candler and Townsley\(^2\) have estimated the retail demand function for butter

and also shown how to calculate the revenue maximising levels of supply.

Townsley\(^3\) has carried this work forward and shown successfully how the

technique of dynamic programming could be used to set a monthly schedule

of supplies which would earn New Zealand £2 million more than at present.

At Lincoln we are carrying this programming work forward with reference
to meat but again as with our projection work, the limitation of research
resources means we are only scratching the surface.

6.2 Let me then list some of the areas in which programming and short term
market policy models of the sort described above are required.

(a) Models for Negotiations on Possible Meat Quotas in U.K.

If, as I believe likely, we are eventually faced with controlled marketing
of meat in Britain we are in no position to bargain from strength but will need
to use weapons of skill, intelligence and cunning to ensure we get the best
deal possible. Our negotiators will need to be better armed than their oppo­

nents with forecasts of the effect on British meat prices of various levels of New
Zealand quotas, various levels of British subsidies etc. In my view our experi­

ence under post-war Bulk Purchase arrangements for meat was disastrous in
that we accepted far too low a price because our negotiators were unaware
of the high level to which free market prices would have gone in the absence
of bulk purchase and, in the interests of a stability which we did not require,
we accepted prices which were far too low and sacrificed millions of pounds
of potential revenue.

(b) Models for Forecasting the Lamb Kill and the Levels of Butter Fat Produc­
tion in the ensuing Season

If quotas are imposed then we shall want to know what amount of lamb
above quota has to be disposed of and where it can be disposed of most
profitably.

(c) Models for deciding on the best uses for milk production, butter, cheese,
powders, casein etc., under existing and forecasted overseas marketing con­
ditions.

(d) Models to assist in Optimum Pricing Procedures and stock holding policies
for centralised Wool Market Organisations.

—and so on.

\(^2\) W. V. Candler and R. J. Townsley “A Study of the Demand for Butter in the United

\(^3\) “The Maximisation of Revenue from New Zealand Sales of Butter in the United Kingdom—
7 CHANGING MARKET STRUCTURES

7.1 When discussing in Section 4, the estimation of demand elasticities as a basis for projections, I was careful to insist that such estimates and the projections on which they are based assumed that the market structure remains the same in the future as in the past. By market structure in this context I mean the existing pattern of tastes and preferences and selling methods. These things can, however, be changed or so we are told by advertising and promotion changes in grading, packaging, display etc.

It is particularly important that we try to measure the monetary effect of advertising and promotion because if the future level of exports based on projections I spoke of earlier turned out to be inadequate for economic growth we have to decide whether exports can most economically be increased by price reductions or more promotion. Moreover we can reasonably expect in the future that non price competition will become more important in agricultural products.

7.2 Measurement of the effects of advertising and promotion is notoriously difficult. There has been some work done in the United States, much of it by the U.S. Department of Agriculture, using regression methods and market promotion experiments. But there has been no work done in this field, as far as I know, in New Zealand or on New Zealand products overseas. Not only do we know very little scientifically, about the returns earned from our promotion effort, but we have very little information of any sort as to the consumers of our products, their characteristics, incomes, tastes, preferences, grading requirements, etc.

I suggest we need a greatly expanded effort of overseas market research aimed at filling these gaps in our knowledge and combined with research on the effects of promotion and the best allocation of resources in this field.

As a teacher I am always impressed by the fact that the aim of many of our graduates, as soon as they leave University, is to travel overseas before they settle down. But I am disturbed by the fact that many of them settle down overseas where their talents are apparently recognised faster than they are in New Zealand. I wonder if we could not utilise the energies of our young graduates and their urge to travel by employing them in a locally based Overseas Market Intelligence Agency which could organise market research overseas and so ensure that New Zealanders abroad are working for the benefit of New Zealand.

8 FROM PROJECTIONS TO POLICY

8.1 Projections forecasting and policy models are all very well as guides to desirable policies but the final important question must now be posed as to how we turn them into actual operational policies. What sort of marketing system do we require to achieve the market targets which I have proposed we should set. In judging the efficiency of a marketing system we have, in my view, to consider it as a communication system passing signals from consumers to producers and vice versa. Bearing in mind all I have said before, we want
the signals passed to producers to refer, as far as possible, to the product mix **required in the future** and not just to what is required in the present, since by the time production decisions are made the present has become useless history. It is the purpose of projections to provide signals about the future. In particular we must ask what are the relative roles in the marketing system of the future, of private enterprise on the one hand and centralised marketing boards, on the other.

8.2 *The Marketing Board Approach*. By this I mean the sort of marketing system embraced in New Zealand by the Dairy Board and in Britain by the operation of an integrated forward pricing policy administered by the Ministry of Agriculture. This policy has been successful in bringing forward the supplies of products required and dampening down the supplies of those in surplus.

The Board approach seems to me to have the following advantages.

(i) A Board is better fitted to take account of and act on projections and forecasts which, as I have outlined them, are the key ingredients in future marketing planning.

(ii) A Board can more easily administer a coherent integrated price policy including differentials aimed at bringing forth the supplies of the sorts of products required. This is the sort of policy which has been successfully operated for milk by the Dairy Board.

(iii) Centralised marketing can more easily programme supplies to different markets, earning different average net returns, though not necessarily different marginal net returns. I believe in this context, that there is no bigger piece of nonsense in New Zealand than the hullabaloo which breaks out periodically about the £3 million loss of the Meat Export Development Company. As far as New Zealand as a whole is concerned this loss must be offset by the extra income from the lower supplies of lamb sold in Britain. In a national marketing agency this loss would be subsumed into the general operations of the organisation.

(iv) Administration of quotas imposed by overseas countries would be more easily handled by a Board.

(v) A Board would provide the right sort of channels through which to provide export incentives for increased agricultural production, a matter which so far has defeated the wit of the Agricultural Development Conference.

(vi) A Board can more easily programme and schedule supplies to British market, suggested as desirable by the research work I mentioned earlier.

(vii) Promotion and advertising are more easily administered and evaluated by an agency handling the product.

8.3 *The Private Enterprise Approach*.

Against the list of advantages adduced above for the Board approach it is difficult to set an equally long list for private marketing agencies but the two advantages given are enormously important.
(i) Private systems are free of producer and other pressure politics.

(ii) Private systems utilise and place a premium on individual enterprise initiative and energy, all of which are likely, to some extent, to be dulled in a large integrated marketing organisation.

8.4 I must admit that my own subjective preference is for the first of these two systems viz the integrated Board approach; because it is more conducive to the philosophy of market forecasting and projections which I have made the keynote of this paper; because I believe that we must in New Zealand match the concentrations of buying power which are occurring; and because I believe we must shift agricultural marketing more towards the systems and attitudes characterising industrial marketing. But I repeat this is a subject judgment and a firm opinion on this issue must await research devoted to measuring objectively, by simulations and other methods, the efficiency of the two systems.

Perhaps we should try to get the best of both worlds by opting for a mixed arrangement with ingredients of both systems but this is an issue which I can fairly leave with you for the discussion period following.
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2. The New Agricultural Economics Research Unit, B. P. Philpott
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