DEMAND PROSPECTS FOR BEEF

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Paper contributed to New Zealand Institute of Agricultural
Science Symposium "New Zealand Beef Production,
Processing and Marketing":
Hamilton, August 24-28th 1970

Agricultural Economics Research Unit Discussion Paper No. 15
Lincoln College, Canterbury, New Zealand

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ABSTRACT

The overall world demand projections for 1975 for beef, prepared by O.E.C.D., are presented and discussed. Recent beef production and consumption trends are compared with the projections, the optimum of which, in the light of this comparison, needs to be interpreted with great caution. A specific export projection for New Zealand indicates however that an increased export of 100,000 tons of beef could be achieved over the next decade at reasonable prices.

INTRODUCTION

Unlike lamb and mutton for which sizeable markets are confined to a few countries only, beef is a commodity of world-wide currency and the task of assessing the future prospects demands therefore that we take a world-wide view of the question, since the supply-demand-price situation in each major beef consuming country is likely to be affected by what is happening in the others.

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* Acknowledgment is due to Mr A.C. Hannah and Mr G. Fletcher for their assistance in preparing this paper.

For the same reason, and because there are still open to us some markets as yet unrestricted by quotas and other quantitative restrictions, we must be quite clear as to what level of prices we have in mind when we talk about future demand for our beef.

From what little research has been done it is apparent that beef prices in most countries are closely related to the supplies placed on the market. (This relationship between prices and supplies is the inverse of the price elasticity of demand which for beef appears to be quite high, i.e. consumer demand rises quite markedly for small changes in price.) We therefore can consider, within limits, a range of alternative quantitative export targets for beef depending on what prices we are prepared to accept.

I shall in the following treatment look first at the world scene and attempt an assessment of future price trends and then consider the prospect specifically for New Zealand's projected beef exports (the levels of which are discussed in the next section) over the next five years to 1975.

NEW ZEALAND BEEF EXPORT PROJECTION

The quantities of beef and veal likely to be available for export can be roughly calculated if we accept Dr R. W. M. Johnson's projection for 1980 of 2.6 million beef breeding cows, assume no increase in dairy cows and include the beef from 250,000 dairy calves retained for fattening. Adjusting the figures back to 1975 we secure a projected beef and veal production of around 430,000 tons. This in turn implies an export level of about 280,000 tons as follows:

	Production	Domestic Consumption	Export
	'000 tons carcase weight		
1959/60	236	103	133
1967/68	339	132	207
1968/69	371	132	239
1974/75	430	150	280

The increased quantity for which markets are required is therefore around 80,000 tons greater than 1967/68 and on the assumptions given this is the maximum we could have available. To allow for relaxation of some of those assumptions, especially the level of dairy cow numbers (and number of dairy calves fattened), we ought to consider a round figure of 100,000 tons increase over 1967/68 as a quantitative export target for 1975.

WORLD BEEF PROJECTIONS

A number of national and international agencies have published projections of future supply and demand for beef and veal of which the latest, and therefore the one I use in this paper, is that published by O.E.C.D. [1] and from which the figures given in Table I are extracted.

The table gives first a broad picture of the structure of beef and veal production, consumption and trade in a large part of the developed world in the O.E.C.D. base years 1961/63. Essentially, as the table shows, a group of mainly Northern Hemisphere net importing countries consumed 13,400 thousand tons of beef and veal of which they produced 11,700 thousand tons and imported, from a group of mainly Southern Hemisphere net exporters, about 1,700 to 1,800 thousand tons.

The last three columns of the table give the O.E.C.D. projections for 1975 of each of these three magnitudes.

It is important to discuss just how these, or any other, projections have been derived.

Future demand depends basically on forecasted changes in population forecasted changes in income per head and on the relationship between such income changes and the demand for beef at constant prices (i.e. the income elasticity of demand). When set against forecasted supply (depending on extrapolation of recent historical trends allowance for technical change etc.,) a discrepancy is usually apparent and the final task of the forecaster is to calculate, in the light of estimated price elasticity of demand, what price change is needed to either stimulate or choke off expected demand and so reconcile it with expected supply.*

This was the procedure to all intents and purposes adopted by O.E.C.D. in the present projections, except that an allowance was made right from the start for the effect on demand of rising beef prices which O.E.C.D. in any case expected would occur. This allowance was made by adjusting downwards (usually by around 20 per cent to 40 per cent) the income elasticities used which in most cases had a value of about 0.5.

Even with this procedure (which smacks somewhat of assuming what you wish to prove), the projection which emerges as shown in Table I, indicates for 1975 a considerable world excess of demand over supply of 861,000 tons, this being the excess of net imports required over net exports available from major net exporting countries, and this in turn implies further rises in beef prices (compared with 1961/62 and over and above those already allowed for by O.E.C.D.), to secure the necessary supply demand reconciliation.

In the event, the world has experienced, in the late 1960's, much higher prices for beef, possibly reflecting the very process implied by the O.E.C.D. forecasts and this, especially in Europe as we shall see, has already amended the picture considerably.

PERFORMANCE COMPARED WITH PROJECTIONS

The O.E.C.D. projections are based on the years 1961/63. The figures for 1966/67, or the latest year, given in Table I (and some of them are provisional estimates), give us an indication as to how close to projected trends the actual figures are running, and for one or two major areas, what New Zealand market prospects look like.

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* For a detailed example of this procedure see [2].

North America

In the United States and Canada production and demand are moving much in the manner forecasted and New Zealand has already benefited from the emerging net import demand. Continuation of this growth in import demand is now however restrained, as far as the United States is concerned, to the annual increases of about $4\frac{1}{2}$ per cent in the quotas on beef. Fluctuations in United States imports which are mainly of manufacturing beef, are highly inversely correlated with cyclic fluctuations in slaughter of cull cows. The slaughter cycle is at present in a downward phase which implies steadily rising demand over the next few years. In addition the slaughter of cull cows does not share the same upward trend as characterised fed beef production, possibly because of the declining numbers of dairy cows.

In the face of these demand pressures it is difficult to see the quotas not being increased by more than the normal $4\frac{1}{2}$ per cent per annum to New Zealand's benefit (unless of course the demand for manufacturing beef is satisfied by synthetic meat). This could raise our growth rate in exports to U.S.A. from the present expected increase up to 1975 of about 30,000 tons to say 40,000 tons.

United Kingdom

Production is well ahead of target but consumption is running far behind due to the rise in deflated prices of around 25 per cent which occurred in the mid-sixties because of falling import supplies.

The O.E.C.D. projections imply a small fall in net import demand. A somewhat more favourable result is given in Edwards & Philpott [2], which uses rather higher and, we believe, more realistic income elasticities. This provides an estimate of a 30,000 ton market for New Zealand in 1975 at 1964/66 prices - somewhat lower than at present. As long as the British market is freely open to imports we could of course sell much more than this if it were available and provided we were prepared to accept lower prices.

One very important caveat however should be entered with respect to the United Kingdom market. Should beef prices there rise much more consequent upon U.K. entry into the E.E.C., the net import demand could be reduced substantially and even eliminated entirely if prices rose by up to 20 per cent.

Japan

The rise in net imports to 1975 projected for Japan is quite dramatic. Production increases are on there but consumption and therefore net imports, have been restrained by the 20,000 ton global quota, rising to 29,000 tons by 1972. Unless the Japanese are prepared to tolerate truly astronomical prices for beef, the growth in demand must soon burst the quota system asunder and by the mid-seventies net imports should be rising towards the O.E.C.D. level. New Zealand should enjoy a large part of this trade.

Europe

The relevant figures from Table I, for the countries of North Western Europe can be summarised as follows:

	1961/63			1966/67 or latest		1975		
	Prod'n	Trade	Cons.	Prod'n	Cons.	Prod'n	Trade	Cons.
E.E.C.	3671	+443	4114	3959	4019	4374	+796	5170
Other N.W. European Countries	820	-169	651	834	656	825	- 41	784
Total European Countries	4491	+274	4765	4793	4675	5199	+755	5954

For the whole of Western Europe the picture is much the same as for the United Kingdom. Production is well on trend and consumption has remained static again due to price rises of around 20 per cent in recent years.

The total production figures conceal substantial differences between countries. Production has risen very fast in Italy, Germany, Netherlands and Denmark (in this case a fall in production was projected) but in France a substantial decrease in production has occurred.

Beef production in Europe was assumed to come from holding cow numbers static but fattening a far greater proportion of calves, and this has been the typical development in most European countries. But in France cow numbers have continued to increase far beyond the O.E.C.D. projection. This has resulted from the continuation of high milk prices from which the French have refused to retreat and which Hannah, in unpublished work at A.E.R.U., has shown are strong influences on cow numbers.

Until such time as there is a revision of dairy policies in France (and this could quite easily take until 1975), it is difficult to see beef production rising rapidly and for this reason the European net import demand could rise substantially though in view of the higher prices now prevailing compared with the base year, this is unlikely to reach the high level projected by O.E.C.D.

As in America, the expected static or declining dairy cow numbers in Europe will mean a shortage of cull cows for manufacturing beef. A place in the European market for say 20,000 tons of manufacturing beef by 1975 is therefore easily envisaged.

Competitive Net Exporters

Finally we turn to the major net exports with whom we are in competition - mainly Australia and South America. Production in these areas is well behind trend, partly due to drought in Australia and the increase in production in Argentine and Uruguay is much more consistent with recent historical trends in those countries than it is with the 1975 projection given (and which in this case is an F.A.O. and not an O.E.C.D. projection). The projection must be regarded rather more as an expression of technical potential, which is undoubtedly vast, than of a realistic economic possibility.

A NEW ZEALAND EXPORT TARGET

In discussing the beef trends in each of the main areas of the world we made an assessment as to the increased quantities which could be sold by New Zealand by 1975.

We conclude this paper by bringing these figures together into a total export market projection for 1975. In addition to the markets we have discussed and evaluated, we have allowed below for a further modest increase of 6,000 tons to "Other Countries," consisting mainly of West Indies, Pacific, South East Asia and the Middle East.

Export destinations of beef for the last three years are also given for comparison. These are measured in tons shipping weight whereas our projections are in terms of carcase weight.

	Destinations of N.Z. Beef & Veal Exports			Possible Market Projections for 1975	
	'000 tons Shipping Weight			'000 tons carcase weight	
	1967	1968	1969	1968	1975
United States	77.0	95.0	82.0	113	153
Canada	2.0	3.0	35.0	4	8
United Kingdom	8.8	8.6	16.5	13	33
Japan	3.0	2.0	3.0	3	13
Europe	2.4	1.9	1.9	3	23
Others	14.8	17.5	19.6	24	30
Total	108.0	128.0	158.0	160	260

Taking a very cautious and conservative view of the future, we conclude therefore with the answer to our original question, viz, we could sell, at roughly present prices, an extra 100,000 tons of beef by 1975.

REFERENCES

[1] AGRICULTURAL PROJECTIONS FOR 1975 AND 1985
O.E.C.D. Paris 1968

[2] EDWARDS, D.R. & PHILPOTT, B.P, Supply and Demand Projections of the United Kingdom Meat Market in 1975. Agricultural Economics Research Unit Research Report No. 57.

[3] FOOD & AGRICULTURAL ORGANISATION OF THE UNITED NATIONS "Agricultural Commodities - Projections for 1975 and 1985" Rome 1967.

ACTUAL & PROJECTED BEEF & VEAL PRODUCTION, CONSUMPTION & TRADE IN MAJOR COUNTRIES

	1961/63			Per Capita	1966/67 or latest year		1975		
	Prod'n	Trade	Cons.	Cons.	Prod'n	Cons.	Prod'n	Trade	Cons
	'000 met. tons			Kg	'000 met. tons		'000 met. tons		
Mainly Net Importers of Beef & Veal									
United States[a]	7,464	+ 715	8,179	43.8	8,953	9,565[b]	9,875	+1,342	11,21
Canada	730	- 53	677	36.0	865	n.a.	1,003	+ 24	1,02
United Kingdom	801	+ 396	1,197	25.8	909	1,159	883	+ 392	1,27
Belgium Luxembourg	205	+ 21	226	23.5	240	235	244	+ 30	27
Germany	1,082	+ 160	1,242	20.9	1,199	1,306	1,315	+ 189	1,50
Italy	455	+ 365	820	15.5	717	917	525	+ 645	1,17
Finland	84	+ 1	85	18.3	n.a.	n.a.	108	+ 10	11
Norway	57	- 2	55	14.8	55	54	58	+ 4	6
Sweden	156	- 5	151	19.9	165	146	136	+ 31	16
Switzerland	112	+ 28	140	23.4	109	140	133	+ 42	17
Greece	40	+ 33	73	7.2	48)		69	+ 64	13
Portugal	46	+ 12	58	6.0	n.a.)	n.a.	64	+ 33	9
Spain	170	+ 43	213	7.0	172)		230	+ 144	37
Turkey	124	- 7	117	6.8	n.a.)		163	+ 34	19
Japan	164	+ 5	169	1.7	190		242	+ 104	34
TOTAL NET IMPORTS	11,690	+1,712	13,402		13,622		15,048	+3,088	18,13
Net Exporters of Beef & Veal									
France	1,655	- 89	1,566	30.2	1,493	1,314	1,978	- 96	1,88
Netherlands	274	- 14	260	20.3	310	247	312	+ 28	34
Austria	155	- 18	137	18.5	156	140	180	- 17	16
Denmark	256	- 173	83	18.1	265	92	210	- 111	9
Ireland	261	- 215	46	16.5	355	48	365	- 309	5
Yugoslavia	213	- 87	126	7.0	n.a.	n.a.	284	- 52	23
Australia	911	- 405	506	45.2	906	648	1,228	- 602	62
New Zealand	275	- 157	118	47.5	345	134	419	- 268	15
Argentine	2,424	- 606	1,818	85.2	2,588	n.a.	2,942	- 705	2,23
Uruguay	295	- 72	223	85.6	238	n.a.	355	- 95	26
TOTAL NET EXPORTS	6,719	-1,836	4,883		6,656		8,273	-2,227	6,04
"WORLD" TOTAL	18,409	- 124	18,285		20,278		23,321	+ 861	24,18

(a) 1961/63 figures from F.A.O.

(b) Estimated from U.S.D.A. Statistics

Notes on Table I

The figures in this table come mainly from the O.E.C.D. projections but since O.E.C.D. does not provide estimates for Argentina and Uruguay, without which world beef trends cannot really be properly assessed, we have included data for these countries secured from the F.A.O. [3] projections. Statistics of production and consumption for 1966/67 or latest year are derived from F.A.O. and O.E.C.D. Year Books and E.E.C. Agricultural Statistical publications.