UNIVERSITY OF OXFORD
AGRICULTURAL ECONOMICS RESEARCH INSTITUTE

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A STUDY OF THE RELATIVE ECONOMIC ADVANTAGES OF GRAZING YOUNG OR OLD CATTLE

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A. B.
December 1930. A. J.

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INTRODUCTION

A GREAT deal has been said and written recently in connexion with the greater demand for smaller joints of beef and mutton. That there has been a gradual change in the public demand for meat appears to be unquestioned. 'It is well known . . . that even the best overweight animals will not fetch so much per live-weight cwt. as an average quality medium or light-weight', according to a report of the Ministry of Agriculture and Fisheries based upon the following figures collected from 17 markets in different parts of the country in the summer of 1927:[1]

No. of markets.	*No. of Animals.*	*Under 8½ cwt.*	*cwt. 9–9½.*	*cwt. 9½–10.*	*cwt. 10–10½.*
		£	£	£	£
17	899	2·452	2·460	2·473	2·449

cwt. 10½–11.	*cwt. 11–11½.*	*cwt. 11½–12.*	*12 cwt. and over.*
£	£	£	£
2·394	2·363	2·344	2·310

The following extract from Weddel's Annual Report 1927 upholds the view that consumers prefer the smaller joints: 'For some years past a gradual change has been taking place in the public demand for meat. Everybody wants smaller joints nowadays . . . whatever the cause of this change in public taste may be, its effect upon the meat trade, both home-grown and imported, is profound, and appears likely to become more marked as time goes on.'[2] Evidence indicating the change in consumers' preferences does not all emanate from a non-agricultural source. Mr. P. F. Astill, a well-known Midland grazier, has maintained that Leicester butchers want smaller cattle. In his opinion 'the 9–10 cwt. live-weight animal, yielding 560–660 lb., was probably the most sought after during the summer'.[3]

[1] Ministry of Agriculture's Economics Series, No. 20, H.M. Stationery Office.

[2] W. Weddel & Co., Ltd., *Fortieth Annual Review of the Chilled and Foreign Meat Trade, 1927.*

[3] P. F. Astill, at Aberystwyth Conference, November 1928.

It has been maintained, however, that the farmers, and particularly the Midland graziers, who produce a large proportion of the beef killed from June to December, have either not realized the change or are unwilling to meet it, with the result that they are said to be still producing animals far too big and heavy and unsuitable to the requirements of the market. The graziers reply that big cattle are still in demand, and that in addition to other advantages they pay better than younger and smaller beasts. In view of this and the statements made with regard to the demands of the butchers and public for smaller weight animals a survey was commenced in the spring of 1928 in the Leicestershire-Northamptonshire area, with the primary object of obtaining information relative to the economy of feeding young and old cattle, of finding out how far the graziers have gone in the direction of feeding young cattle and of any difficulties associated with such a change. Other factors emerged in the course of the investigation, but attention was mainly directed to the problems mentioned above.

The farms from which the survey information was collected fall into two groups, which have been called in this report the 'Harborough area' and the 'Ex Harborough area'. The first of these is the main purpose of this study. The farms in this group are all situated in the district surrounding the town of Market Harborough and lying on both sides of the River Welland, which forms the boundary of the two counties. The area and the system of farming have been fully described elsewhere[1] so that it is unnecessary to describe it further here. The area may be said to contain some of the finest grazing land in England and Wales, on which cattle and sheep are fattened. It has been held that the graziers of these 'strong' lands are less disposed to consider the grazing of young cattle. Of the 87 farms constituting this survey 56 were in the 'Harborough area'.

The 'Ex Harborough area' is the convenient title given to the other 31 farms surveyed. These farms were somewhat widely scattered over the two counties of Northampton and Leicester. On all of them fattening of stock on grass was a part of the enterprise. On some of these farms the fattening of cattle and sheep

[1] J. Llefelys Davies, *Grass Farming in the Welland Valley*. Clarendon Press, Oxford. 2*s*. 6*d*.

formed, as in the 'Harborough area', the main part of the economy of the farms. As to the others, the farming was more mixed in character. Stock fattening was not of first importance. Dairying formed an important item of production, and there was a considerable amount of arable land. It was frequently found in this 'Ex Harborough area' that the stock fattening was not an integral part of the farm, but was carried on in grass fields hired annually for the purpose.

The procedure adopted in obtaining the information on which this report has been prepared was as follows. Each co-operating farmer was visited in April and May and was asked to give the following information in regard to his cattle:

(1) Number of cattle of each age, (2) breeds, (3) condition of cattle, i.e. lean, fair, forward, and half fat, (4) the date when grazing commenced, (5) the average live-weight per head, and (6) average value per head of stock at commencement of grazing season.

The graziers were asked to group their cattle into 3 classes by age: (1) under 2 years old, (2) 2 to 3 years old, and (3) 3 years old and over. There was also a fourth class labelled 'other cattle', into which graziers were requested to put barren heifers and cows. There were a considerable number of these on some farms. In many cases, especially on the smaller farms and on the 'Ex Harborough' farms, the information was asked for all the fattening cattle being grazed on each farm during the 1928 season. On the large farms, however, where the cattle grazed ran into large numbers, information was taken only for a sample. In every case the sample consisted of a bunch of cattle. In some cases the data for two or three bunches of cattle were taken from the same farm, each, so far as possible, being representative of one of the age classifications referred to above.

The weights of the cattle represent the farmers' estimates of a bunch of cattle as a whole. Weighbridges are not much in evidence on grazing farms, and an estimate was the only means of obtaining approximate weights at the commencement of the grazing season.

The value of the stock was taken to be the price at which the cattle were bought to put on the grass. Not all of the cattle, however, are bought in the spring to put direct on the grass. Considerable numbers are bought in the autumn, in the late

winter or early spring, and have to be maintained on the farm until the grass is ready. In other cases the cattle are bought in the autumn and wintered away on hay.[1] There were also farmers who bred their own stock. There was, therefore, no purchase price available to be taken as valuation at the commencement of grazing for cattle in these groups. In these circumstances the farmers' own valuation on a fair market price basis at the commencement of grazing was taken.

These were the particulars asked for at the beginning of the survey. During the season the farmers were asked to make a return weekly of all cattle sold, market at which sold, the weight and the price realized, as well as particulars of feeding stuffs used. A fair number of the graziers sent in these forms regularly, others preferred to give the figures when the sales of cattle were completed, while in the other cases it was found necessary to make calls at regular intervals to get the details required.

At the end of the grazing season, which paradoxically extended into 1929, farmers were asked to give the area and value of the grazing used by the cattle included in the survey, an estimate of the labour employed and its cost, and the buying price of cakes and other feeding stuffs used. Rail and market charges in respect of the cattle were also obtained.

The number of cattle in each age which were finally included in the survey is shown in the following table:

TABLE I

Number of Cattle in each age.

Group.	*'Harborough area.'*		*'Ex Harborough area.'*		*Total.*	
	Number.	*Per cent.*	*Number.*	*Per cent.*	*Number.*	*Per cent.*
Under 2 years old . .	43	3·3	98	13·6	141	6·9
Between 2–3 years old .	473	35·8	495	68·6	968	47·4
3 years and over . .	664	50·1	105	14·6	769	37·6
'Other cattle'	143	10·8	23	3·2	166	8·1
	1,323	100·0	721	100·0	2,044	100·0

[1] In two cases where this was done the costs for grazing accommodation, hay, and shepherding were 55*s.* and 60*s.* per head.

The information contained in this report is, therefore, based on a sample of 2,044 head of cattle, of which 1,323 relate to the 'Harborough area' and 721 to the 'Ex Harborough area'. Of the 'Harborough area' the largest group was of cattle 3 years old, 50·1 per cent. of the total cattle included in the survey in the area being of this class. Only 3·3 per cent. of the cattle were in the 2-year-old class. It was especially difficult in this area to find graziers with feeding-cattle of under 2 years old. Most graziers were emphatic that, with the class of stores available, cattle of this age could not be fattened during the summer on grass, their contention being that they would 'grow' rather than put on flesh.

In the 'Ex Harborough area' there was a great preponderance of cattle (68·6 per cent.) in the 2–3-year-old group. There was also a higher proportion (13·6 per cent. compared with 3·3 per cent.) of cattle under 2 years old than in the 'Harborough area'. There were only 14·6 per cent. of the cattle in this 'Ex Harborough area' in the class 3-year-old and over. The larger numbers of cattle in the younger classes in this area point partly to a difference in the system of farming. A good many of these cattle were bred and reared on the farms. The presence of yards and the supplies of roots, straw, and hay make it possible to bring the cattle forward more quickly. They are turned out in the spring as good stores at about 2 years old, and given good conditions and concentrated food will mature satisfactorily.

In the table above the 'Harborough area' is shown to graze a fairly large number of 'other cattle'. There was an increasing tendency, partly on account of cheapness and partly because less capital was required, for graziers to buy these cattle, which consisted of 2nd-calf heifers and other culls of dairy herds. Heifers and cows from dual purpose herds were only suitable for this purpose. The risk of buying cows and heifers from purely milk breeds was considered to be too great owing to the lack of constitution, as the result of intensive milk production, and to the difficulty of putting flesh on such animals. The idea was prevalent at the time that owing to the low prices for which dairy culls could be bought, coupled with the fact that they could be fattened without much expense and quickly, they paid better than turning out first-class beef.

In Table II the distribution of the cattle in the sample as between bullocks and heifers is given.

TABLE II

Sex of Stock.

Group.	*'Harborough area.'*		*'Ex Harborough area.'*		*Total.*	
	Number.	*Per cent.*	*Number.*	*Per cent.*	*Number.*	*Per cent.*
Bullocks . .	833	70·6	350	50·1	1,183	63·0
Heifers . .	181	15·3	161	23·1	342	18·2
Bullocks and heifers (not separately stated) .	166	14·1	187	26·8	353	18·8
	1,180	100·0	698	100·0	1,878	100·0
'Other cattle'	143	—	23	—	166	—
	1,323	—	721	—	2,044	—

TABLE III

Sex and different ages of Stock.

Group.	*'Harborough area.'*		*'Ex Harborough area.'*		*Total.*	
	Bullocks.	*Heifers.*	*Bullocks.*	*Heifers.*	*Bullocks.*	*Heifers.*
Under 2 years old . .	11	20	69	—	80	20
2–3 years old	251	137	214	146	465	283
3 years old and over .	571	24	67	15	638	39
	833	181	350	161	1,183	342

Normally it would always be expected to find more bullocks than heifers among grazing cattle, but it is noteworthy that while bullocks outnumbered heifers by only two to one in the 'Ex Harborough area', there were nearly five to one in the 'Harborough area'. On reference to Table III it will be seen also that in this area 571 (67·3 per cent.) out of 833 of the bullocks were over 3 years old, whereas 214 (60·1 per cent.) out of 350 bullocks in the 'Ex Harborough area' were between 2 and 3 years old. The heifers in both districts were nearly all between

2 and 3 years old, animals of over 3 years of age being uncommon. The preference for bullocks and for those of 3 years old in the 'Harborough area' is well known. It is claimed that the best grazing results on these 'strong' pastures are only obtained with cattle of this age. Several reasons are advanced for this view: (*a*) they do not scour on the early grass, (*b*) they put on a large live-weight increase, and (*c*) they fatten quickly. These considerations will be discussed later. In other areas the greater preponderance of heifers and of bullocks of 2–3 years old points again to the difference in farming conditions, when under more mixed farming conditions the farmer is able to rear stock for fattening on his own farm, whereas the specialized grazier can exercise a choice as to the class of animal which will suit his special environment.

There is a considerable variety of breeds of stock carried in both districts. Individual tastes and experiences give rise to this condition of affairs. In the sample, Shorthorn and crosses of this breed were nearly half of the total. They were followed in order of numbers by Lincoln Red Shorthorn, Herefords, Devons, and Welsh and their crosses. Ireland, Wales, and the counties of Hereford and Devon were the main sources of supply of the store-cattle brought into the Harborough district. Several of the smaller graziers complained of the difficulties of getting suitable stores in local markets. The supply was limited because, firstly, many farmers who used to rear and sell store-cattle in the surrounding districts are now finishing them; secondly, milk producers do not rear so many cattle as formerly; and thirdly, the number of dealers from Ireland and Wales in the Leicester and Market Harborough markets has declined very considerably. This was attributed to the fact that many of the large graziers in the 'Harborough area' buy direct from the store-raising districts or from the primary markets of those districts, so that there is not now the same necessity for dealers to bring store-cattle to the grazing district markets. The stores bred locally were also said to be poor in quality, as they are bred from milk-producing herds and therefore are not first class for beef production.

II

GENERAL FINANCIAL RESULTS ON THE GRAZING FARMS IN 1928–9, COMPARING AGE CLASSES

The primary intention in the figures which follow is to trace, so far as possible, the influence of age of cattle grazed on the financial results. The purpose of this section is to analyse the financial results on these farms of fattening cattle of the three ages defined above, viz.: (1) cattle under 2 years old, (2) cattle between 2 and 3 years old, and (3) cattle 3 years old and over.[1]

In making the comparisons of the relative financial advantages of the three age groups of cattle, the group figures, i.e. the average results of a group, as well as the individual results on the various farms, are made use of, but in no sense is the question of the efficiency of the individual graziers being considered. It is being taken for granted that each grazier has made the best bargain possible in buying and selling his stock, that his treatment of them during the grazing season, either by way of grazing or of feeding, and other questions involved in general management, are not open to question. Of course, these matters raise important issues, but they were not the subject of the inquiry.

Table IV sets out a summary of the average financial results for the three age groups. The first impression conveyed by these figures is that the cattle in Group I—the young cattle—gave a more satisfactory profit than those of the other groups. The gross margin between buying and selling prices in Group I was £6 15*s*. per head and the profit £1 15*s*. per head, whereas in Group II and Group III the margins were only £5 9*s*. and £5 12*s*. and the profits 16*s*. and 14*s*. per head respectively. As between Group II and Group III it cannot be said that the cattle of medium age were clearly more profitable, as the gross margins and profits were very similar in both groups.

[1] Figures in respect of the group of 'other cattle' have not been included in the tables in the text, but they are shown for each farm where they were obtained in the tables of Appendix B.

TABLE IV

Comparison of financial results of grazing cattle.

Age Group.	*No. of Farms.*	*No. of Cattle.*	*Cost of stores per head.*	*Selling price per head.*	*Gross margin per head.*	*Expenses per head.*[1]					*Profit.*
						Grazing.	*Foods.*	*Labour.*	*Other expenses.*	*Total.*	
	No.	*No.*	£ s.	£ s.	£ s.	s. d.	s. d.	s. d.	s. d.	£ s.	£ s.
Group I: under 2 years old	8	141	17 12	24 7	6 15	47 11	25 3	16 7	10 6	5 0	1 15
Group II: 2–3 years old . . .	41	968	19 19	25 8	5 9	47 3	20 5	13 8	11 3	4 13	0 16
Group III: 3 years old and over .	28	769	23 18	29 10	5 12	54 8	21 0	13 5	8 6	4 18	0 14

On the question of expenses there appears to be no advantage in the young cattle. The *total* expenses in all three groups were very similar, although those in Group II were the lowest of the three groups, being £4 13*s.* per head. *Food* expenses, including grazing, were 73*s.* 2*d.* per head in Group I, 67*s.* 8*d.* per head in Group II, and 75*s.* 8*d.* per head in Group III, although it is to be noticed that the cost of purchased foods was highest in Group I.

The evidence so far goes to indicate that young cattle (Group I) were more profitable than those in Groups II and III, and the cattle of Group II a little more profitable than those of Group III. The main factor in the more favourable results of Group I was the high gross margin obtained, on average, in this group. It is necessary, however, to examine the evidence on which the averages are built in a little more detail by comparing (1) the gross margins obtained on the individual farms, (2) the variation in the expenses incurred per farm and, (3) the profits and losses of the farms making up each group.

1. *Variations of the gross margin within each group.*

Table V gives an outline of the variation in the gross margins, i.e. the difference between the cost of the stores and the prices realized for the fat cattle on the farms surveyed.

[1] Exclusive of a charge for management and interest on capital.

TABLE V

Variations of the gross margin.

Class of Cattle.		*Gross margin per head of*						*Total.*
		Over £10.	£ 8–10.	£ 6–8.	£ 4–6.	£ 2–4.	*Less than £2.*	
Group I: under 2 years old .	No. of farms.	—	2	1	3	2	—	8
	%	—	*25·0*	*12·5*	*37·5*	*25·0*	—	*100*
Group II: 2–3 years old . .	No. of farms.	3	2	11	13	11	1	41
	%	*7·3*	*4·9*	*26·8*	*31·8*	*26·8*	*2·4*	*100*
Group III: 3 years old and over .	No. of farms.	2	3	9	11	2	1	28
	%	*7·1*	*10·7*	*32·1*	*39·4*	*7·1*	*3·6*	*100*
All Groups .	No. of farms.	5	7	21	27	15	2	77
	%	*6·5*	*9·1*	*27·3*	*35·1*	*19·5*	*2·5*	100

The gross margin is probably of greater significance in this type of farming than in any other. The grazier's business is primarily one of buying store-cattle and selling them fat after a period of grazing on the farm. Three factors are involved in determining the gross margin, namely, the buying price, the live-weight increase secured during the period of fattening, and the selling price. All these factors will clearly influence the grazier's policy with regard to the kind of cattle with which he stocks his pastures, and it is absurd to expect him to carry younger animals unless the demand is expressed in a price for the small animal high enough to yield the grazier a gross margin as great or greater than the heavier animals.

Some light on each of the separate factors in the gross margin will emerge later. Meantime the extent of the margin as a whole will be considered in its relationship to the three age classes of cattle.

Referring, therefore, to Table V, where the gross margins are shown, not as averages for the groups as in Table IV, but as related to each of the farms, it will be observed that there is a great deal of variation in the gross margins obtained for the

cattle in each group. Viewing all the farms the gross margins ranged from less than £2 to over £10 per head. The margins obtained by most farms were between £4 to £6 per head, 27 having margins of this size, or 35·1 per cent. of the total farms. The next highest group was 21 farms, or 27·3 per cent. of the total, which had margins of £6 to £8 per head. There were, therefore, 48 farms (62·3 per cent. of the farms surveyed) which obtained gross margins of £4 to £8 per head. Seventeen farms (22 per cent.) obtained margins of less than £4 per head, and 12 farms (15·6 per cent.) obtained margins of more than £8.

Turning now to an examination of each of the age groups: in Group III (the mature cattle of 3 years and over) the gross margins earned ranged from less than £2 to over £10 per head. Of the 28 farms in this group 39·4 per cent. earned margins of £4 to £6 per head, and 32·1 per cent. earned margins of £6 to £8 per head. There were, therefore, 71·5 per cent. of the farms grazing cattle of this age which obtained a gross margin of £4 to £8 per head, a somewhat larger proportion than in the case of all the farms. There is, however, a much more significant difference in the farms earning more than £8 per head, or less than £4 per head. In this age group only 10·7 per cent. of the farms obtained gross margins of less than £4 as compared with 22·0 per cent. of all the farms. Nearly 18 per cent. of the farms in this group obtained gross margins of over £8. The result of this analysis is clearly to show that there was a better chance of earning a large gross margin in grazing mature cattle than in grazing the younger cattle.

The examination of the other two groups only serves to emphasize this result. The number of farms grazing young cattle was really too small to permit of a close analysis in this way, but the figures are given in Table V for the sake of what comparison is possible.

Farms grazing cattle of medium age (Group II) had only 58·6 per cent. of their number earning gross margins per head of £4 to £6. Of the others, 12·2 per cent. obtained margins of over £8, but, on the other hand, as large a proportion as 29·2 per cent. obtained less than £4 per head.

These figures are, of course, only for one year's operations, but so far as it can be seen from the above analysis the call of

the public for smaller joints is not being expressed in this area emphatically in the form of a higher gross margin per head.

There are, of course, other points still to be examined besides the gross margin.

2. *Variations of the total expenses within each group.*

The total expenses involved in the fattening and selling of the cattle on the farms in the survey may also be examined in more detail as follows:

TABLE VI

Variations of total expenses.

Class of cattle.		*Total expenses per head of*						
		Over £10.	£ 8–10.	£ 6–8.	£ 4–6.	£ 2–4.	*Up to £2.*	*Total.*
Group I: Under 2 years old.	No. of farms.	—	1	2	3	1	1	8
	%	—	*12·5*	*25·0*	*37·5*	*12·5*	*12·5*	*100*
Group II: 2–3 years old.	No. of farms.	1	—	5	22	13	—	41
	%	*2·4*	—	*12·2*	*53·6*	*31·8*	—	*100*
Group III: 3 years old and over.	No. of farms.	—	—	6	8	13	1	28
	%	—	—	*21·4*	*28·6*	*46·4*	*3·6*	*100*
All groups.	No. of farms.	1	1	13	33	27	2	77
	%	*1·3*	*1·3*	*16·9*	*42·9*	*35·0*	*2·6*	*100*

By comparison with the gross margins shown in Table V it would seem that total expenses are subject to rather less variation in extent, i.e. they tend to group themselves in much narrower limits. This would appear to be consistent with the graziers' own statements that the main factors to be watched in the cattle business are those of buying and selling the stock.

Taking all farms together, the greatest concentration of expenses is found between £4 to £6, this division having 33 or 42·9 per cent. of all farms in it. The division next in order of importance is that between £2 and £4 per head, where 27 farms appear. Together these two divisions contain 60 out of the 77 farms or 77·9 per cent.

The greatest concentration of farms in each of the age groups is seen to be as follows : Group I and Group II in the £4–£6 division, and Group III in the £2–£4 division. When the number of farms in each group with expenses less than £6 per head is taken, then the percentage of the farms in this range is 62·5 per cent. for Group I, 85·4 per cent. for Group II, and 78·6 per cent. for Group III. Group I is ruled out on account of the small number of farms, and, considering Group II as compared with Group III, there appears to be little difference in the extent of the expense involved. If anything, the balance of advantage is in favour of the younger age group.

3. *Variations of the profits and losses within each group.*

The ultimate economic test of every system of farming and of every variation of method in a system of farming is the extent of the profit left by it. The analysis of the relative financial advantages of the age groups of cattle may, therefore, be further pursued by an examination of the profits obtained. These are shown in Table VII.

The same age groups are maintained and divisions of 20*s.* are used for showing the variations of the profits and losses.

It will be noticed that a loss was shown on one of the 8 farms in Group I, on 11 of the 41 farms in Group II, and on 5 of the 28 farms in Group III. The relative percentages of these farms to the total number in each group is 12·5, 26·9, and 17·9 respectively. Group I being again ignored for purposes of comparison, and, comparing Group II with Group III, there is a smaller percentage of farms showing losses in the latter group.

Group III has also a greater proportion of the farms in the higher profit divisions than those of the other groups. For example, Group II has 14 farms showing profits of over 40*s.* per head, which was equal to 34·1 per cent. of the total number of farms in these groups, whereas Group III had 12 farms in the same divisions, which was equal to 42·9 per cent. of the farms in that group.

The evidence of financial results given in Table IV favoured the younger cattle. When the individual farms have been taken as the basis of the relative financial advantage of the three

Table VII

Variations of profits and losses.

Class of cattle.		*Profits per head of*					*Losses per head of*					*Total.*
		Over 80s.	80s.–60s.	60s.–40s.	40s.–20s.	20s.–0	0–20s.	20s.–40s.	40s.–60s.	60s.–80s.	*Over 80s.*	
Group I: Under 2 years old.	No. of farms.	—	1	1	1	4	—	—	1	—	—	8
	Per cent.	—	*12·5*	*12·5*	*12·5*	*50·0*	—	—	*12·5*	—	—	*100*
Group II: 2–3 years old.	No. of farms.	1	3	10	10	6	7	3	—	—	1	41
	Per cent.	*2·4*	*7·3*	*24·4*	*24·4*	*14·6*	*17·2*	*7·3*	—	—	*2·4*	*100*
Group III: 3 years old and over.	No. of farms.	4	1	7	5	6	4	—	—	—	1	28
	Per cent.	*14·3*	*3·6*	*25·0*	*17·8*	*21·4*	*14·3*	—	—	—	*3·6*	*100*
All groups.	No. of farms.	5	5	18	16	16	11	3	1	—	2	77
	Per cent.	*6·5*	*6·5*	*23·4*	*20·8*	*20·8*	*14·3*	*3·8*	*1·3*	—	*2·6*	*100*

groups of cattle it would seem that the balance is with the 3-year-old cattle. At any rate, it may be said that cattle under 2 years old and cattle of 2–3 years old were by no means superior in regard to profit earning than 3-year-old cattle.

III

FACTORS AFFECTING THE EXTENT OF THE GROSS MARGIN

In this section an analysis is given of the data of the survey in so far as they relate to the influence of the following factors upon the gross margins earned by graziers, namely:

1. Condition of stores.
2. Cost of stores.
3. Increase in live-weight.
4. Prices obtained for finished cattle.

1. *Comparison of age classes of cattle according to condition as stores.*

In the previous section the financial and other results of the cattle have been classified and discussed irrespective of the condition of the cattle when they commenced grazing in the spring. The utilization of pastures to the best advantage presupposes, however, the carrying of stores in varying condition at the commencement of the grazing season. Unfortunately, the quantity of data does not admit of exhaustive examination of the influence of condition of stores upon the profits and losses. It was necessary to combine the cattle in lean and in fair condition into one group. Those in forward and in half-fat condition were amalgamated into another group. It was also found essential to throw the cattle under 2 years old and cattle 2–3 years old into one group, obtaining thereby a comparison only between 3-year-old cattle and those under 3 years old.

The following table gives a summary of the average gross margins, costs and profits, and time taken to fatten off the cattle, arranged in the two classes according to condition. The first part of the table deals with cattle in lean and fair condition and the second part with those cattle which were in forward and half-fat condition.

TABLE VIII

Financial results of grazing cattle according to condition as stores.

Class of cattle.	*No. of farms.*	*No. of cattle.*	*Gross margin per head.*	*Expenses per head.*	*Profit per head.*	*Average time taken to fatten.*
			£ s.	£ s.	£ s.	*Months.*
(a) *Lean and fair condition.*						
Under 2 yrs. old.	36	799	5 3	4 7	0 16	5·5
2–3 yrs. old.						
3 yrs. old and over.	12	220	6 11	4 7	2 4	5·7
(b) *Forward and half-fat condition.*						
Under 2 yrs. old.	13	310	6 16	5 9	1 7	5·2
2–3 yrs. old.						
3 yrs. old and over.	17	480	5 19	4 18	1 1	4·0

Among *lean and fair* cattle those of over 3 years old (numbering 220 on 12 farms) left the better profit, which was £2 4*s.* per head as compared with the 16*s.* per head of the younger (numbering 799 on 36 farms). This difference was mainly due to a superiority in the gross margin as expenses were identical in both age classes. The time taken to fatten was about the same in both age groups, the average figure being 5·5 and 5·7 months respectively.

One explanation of the distinct superiority of the 3-year-old cattle may be mentioned. Of the 799 cattle in the younger age group 254 or 32 per cent. were caked throughout, as compared with 17 per cent. of the 3-year-old cattle. The importance of this difference is seen in the fact that cattle which were caked throughout the whole of a grazing season were not generally profitable. Seven farms out of 12[1] which fed cake all through the grazing season to cattle classed as 'lean and fair' showed a

[1] See Table XV (ii), Appendix B.

loss. The percentage of farms showing losses was therefore 58, which was a much higher percentage than is shown under any other method of feeding. The graziers' opinions were definitely that younger cattle require this additional feeding to get them fat. Only 2 of the 12 farms with cattle over 3 years old practised this method of feeding, as compared with 10 of the 36 farms carrying the younger cattle. Further, the average period of fattening of the 3-year-old cattle on the 2 farms mentioned was 4·0 months, whereas it took 5·0 months for the younger cattle on the 10 farms.

Examination of the group of cattle in *forward condition* in Table VIII shows that there was a slightly larger profit-margin in favour of the younger cattle. The 3-year-old cattle, however, were sold off more quickly by 1·2 months, or 37 days, in comparison with the younger age group, and this quicker turnover of capital invested in the older cattle must be credited to them.

A higher proportion of the forward cattle were caked throughout the grazing period than of the cattle in lean and fair condition. The financial results of this method of feeding were, as a rule, less satisfactory than where the cattle were fattened entirely on grass alone or where some cake was given only in the autumn. The figures,[1] however, show that the policy paid better with the forward cattle than with those classed as 'lean and fair'. Only 5 out of the 16 farms (or 31 per cent.) in the forward group caked throughout showed losses, as against 58 per cent. in the case of the lean and fair group.

Although the results shown in Table VIII exhibit certain tendencies, firstly the more satisfactory profits of the older cattle in the case of the lean and fair group, and, secondly, the slightly more favourable figures of the younger cattle in the case of the forward group, it must be remembered that only the average results of each group have been examined. It will be found, on examination of the tables in Appendix B, that there were satisfactory profits made by individual farms in all the age groups, and irrespective of methods of feeding. This does not contradict the indications of Table VIII, but it is wise to emphasize the warning that individual conditions of the cattle, the farm, or the

[1] See Table XVI (ii), Appendix B.

farmer himself may cause modifications of the average tendencies.

2. *Cost of stores.*

In comparing the cost of stores of the three age classes it is necessary to take account of the condition of the cattle when grazing commenced. In Table IX, where the cost of stores is shown, the cattle have, therefore, been subdivided into two classes: (1) Lean and fair, and (2) Forward, according to the information supplied by the farmers when the field data were secured.

TABLE IX

Cost of stores.

	No. of farms.	*No. of cattle.*	*Condition.*	*Cost per head.*	*Average live-weight per head.*	*Cost per cwt.*
				£ s.	*cwt.*	*s. d.*
Group I: Under 2 yrs. old.	5	106	Lean & Fair	18 11	7·8	47 6
Group II: 2–3 yrs. old.	18	491	Lean & Fair	19 13	8·5	46 4
	8	113	Forward	21 10	9·2	46 9
Group III: 3 yrs. old and over.	6	96	Lean & Fair	20 11	9·2	44 9
	15	481	Forward	25 2	9·9	51 0

The figures apply only to those farms—52 in number—where both the cost per head and the initial live-weight were obtained.

So far as the cattle in *lean and fair condition* is concerned, it appears from the averages shown above that the older cattle were cheaper to buy per cwt. While 2-year-old cattle which weighed 7·8 cwt. cost £18 11*s.* a head, 2–3-year-old cattle of 8·5 cwt. cost £19 13*s.*, and 3-year-old cattle of 9·0 cwt. cost £20 11*s.*, and the respective costs per cwt. were 47*s.* 6*d.*, 46*s.* 4*d.*, and 44*s.* 9*d.* The average figures, however, are not quite an adequate representation. The sample of 2–3-year-old cattle is satisfactory, and

it may be taken that the average cost is fairly stated at 46*s*. 4*d*. per cwt. The other two age groups, however, refer only to 5 and 6 farms respectively. Of the former, the average costs of stores purchased on the 5 individual farms were 42*s*. 6*d*., 43*s*. 9*d*., 49*s*., 49*s*. 5*d*., and 51*s*. per cwt. There were 2 other farms in this group where it was not possible to calculate the cost per cwt. The cost per head, however, was low at £13 10*s*. and £14 respectively.

On the 6 farms with 3-year-old cattle the average costs of stores were 41*s*. 2*d*., 44*s*. 9*d*., 45*s*., 46*s*., 46*s*. 3*d*., 46*s*. 3*d*. per cwt. There were 6 more farms in this group, with 124 cattle from which no initial weights were secured. The average cost per head of these cattle was £21 16*s*., and when these are added to the 96 cattle given in Table IX, the average price per head becomes £21 5*s*. If it is assumed that the average weight is not altered by the addition made, then the average cost per cwt. would have been 46*s*. 2*d*., which is almost identical with the cost of 2–3-year-old cattle. From this data it seemed that cattle in lean and in fair condition were bought or valued at very similar prices whatever the age.

In the case of the *forward cattle* (in which a comparison is only possible between Groups II and III) the figures in Table IX signify that there was a marked difference in the cost per cwt. of 2–3-year-old cattle and 3-year-old cattle, for which age classes figures are given. On the 8 farms with 2–3-year-old cattle, the stores cost 46*s*. 9*d*. a cwt. for cattle weighing 9·2 cwt. On the 15 farms with 3-year-old cattle the cost of stores was as much as 51*s*. per cwt. for cattle of 9·9 cwt. live-weight, a difference from the 2–3-year-old cattle of 4*s*. 3*d*. per cwt. The difference in price per head was £3 12*s*. (£21 10*s*. as compared with £25 2*s*.). There were 4 more farms with 177 cattle in the 2–3-year-old 'forward' class for which no initial weights were obtained. The cost per head of these was £22 12*s*. Adding the cost of these cattle to the 8 farms on which weights were got, the average cost per head becomes £22 4*s*. Assuming the average live-weight would have been the same at 9·2 cwt., the relative cost per cwt. is 48*s*. 3*d*. This still leaves the 3-year-old cattle dearer than cattle of 2–3-years-old by 2*s*. 9*d*. per cwt.

It was stated that good store-cattle of this age were dear in

1928, which might suggest that the difference of 2*s.* 9*d.* per cwt. is rather greater than normally would prevail. It is possible, however, that the traditional preference for strong cattle of the 3-year-old class causes the graziers to pay a higher price for them.

3. *Increase in live-weight.*

The difficulty of getting initial weights of cattle has already been commented on. The weights of cattle in the store condition, where obtained, were the farmers' estimates, and reliability depends on their experience and judgement. Altogether, opening and closing weights were given in respect of 1,280 cattle, on 52 farms. Of these 106 were under 2 years old at the beginning of the grazing season, 564 were between 2–3 years old, and 610 over 3 years old. The average increase in live-weight in respect of these cattle was as follows:

TABLE X

Increase in live-weight.

Age class.	*Live-weight increase per head during grazing period.*	*Time taken to fatten.*	*Live-weight increase per head per week.*
	cwt.	*Months.*	*lb.*
Under 2 yrs. old.	2·00	4·6	11·0
2–3 yrs. old.	2·02	5·3	9·7
3 yrs. old and over.	2·05	4·3	12·0

The amount of live-weight increase per head was in the neighbourhood of 2 cwt. for all age classes of cattle. Less time was necessary, however, to fatten the 3-year-old cattle, and the rate of increase in weight was higher in this group. This is seen by the figures given in the last column of Table X. Three-year-old cattle increased in live-weight at the rate of 12 lb. per head per week as against 11 lb. and 9·7 lb. in the other age groups.

The distribution of the live-weight increases per head per week obtained on each of the farms is shown in Table XI.

TABLE XI

Distribution of weekly live-weight increase in lb.

	Farms having increases of							
	Under 10 lb.		*10–15 lb.*		*15 lb. and over.*		*Total farms.*	
Age classes.	*No.*	*Per cent.*	*No.*	*Per cent.*	*No.*	*Per cent.*	*No.*	*Per cent.*
Under 2 yrs. old.	3	60	1	20	1	20	5	100
2–3 yrs. old.	11	44	12	48	2	8	25	100
3 yrs. old and over.	6	27	12	55	4	18	22	100

The evidence of this table is to support the superiority of 3-year-old cattle to maintain the best rate of increase in live-weight.

4. *Prices obtained for finished cattle.*

The analysis of the prices received for the finished cattle resolves itself into two aspects (*a*) the time of selling in relation to the age classification of the cattle, and (*b*) the prices obtained for cattle in the three age groups, eliminating the influence of the seasonal fluctuation in prices.

(*a*) There is a very marked seasonal fluctuation in the prices of fat cattle. The problem is discussed in more detail in a later section, but the main facts may be emphasized here. Prices of fat cattle are usually higher than average during February to August inclusive and lower than average from September to January inclusive. (See Fig. 2 on p. 33.) The time of selling is, therefore, an important factor in the prices which the cattle are likely to command. Graziers are able to avail themselves of only three of the months of higher than average prices, and have to sell a large part of their stock in the months of lowest prices. The cattle included in this survey did not begin to come on the market in any number until June. The bulk of the stock was sold in July to October, but an appreciable amount was not marketed until November, December, and January.

The times of disposal of the cattle in each of the age classes are shown in the following table.

TABLE XII

Distribution of cattle sales.

Age group.		*Number of cattle sold in*											
		May.	*June.*	*July.*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Jan.*	*Feb.*	*Mar.*	*Total.*
I. Under 2 years old.	No.	—	16	14	17	20	22	4	10	24	—	—	127
	Per cent.	—	*12·6*	*11·0*	*13·4*	*15·7*	*17·3*	*3·2*	*7·9*	*18·9*	—	—	*100*
II. 2–3 years old.	No.	2	58	103	158	144	159	133	75	53	12	9	906*
	Per cent.	*0·2*	*6·4*	*11·4*	*17·4*	*15·9*	*17·6*	*14·7*	*8·3*	*5·8*	*1·3*	*1·0*	*100*
III. 3 years old and over.	No.	5	114	117	180	107	107	42	72	11	5	—	760
	Per cent.	*0·7*	*15·0*	*15·4*	*23·7*	*14·1*	*14·1*	*5·4*	*9·5*	*1·4*	*0·7*	—	*100*
All cattle.	No.	7	188	234	355	271	288	179	157	88	17	9	1,793
	Per cent.	*0·4*	*10·5*	*13·0*	*19·8*	*15·1*	*16·1*	*10·0*	*8·8*	*4·9*	*0·9*	*0·5*	*100*

* Another 50 cattle sold but dates of sale not obtained.

More of the 3-year-old cattle were in a forward condition in the spring than those of the other age groups, and the result is that a much larger proportion of the 3-year-old cattle were marketed in the earlier part of the year than of the other age classes of cattle. By the end of June:

12·6 per cent. of the cattle under 2 years old,
6·4 per cent. of the 2–3-year-old cattle, and
15·0 per cent. of the 3-year-old cattle

were sold. As the autumnal slump in cattle prices is usually most severe in October and November, it is of importance to note that by the end of September:

52·7 per cent. of the cattle under 2 years old,
51·3 per cent. of the 2–3-year-old cattle, and so much as
68·9 per cent. of the 3-year-old cattle

were sold.

It is safe to draw the conclusion that the grazier relies on 3-year-old cattle to get the market during the time of high prices—a point of some importance in the utilization of grazing fields and in the average returns of a season's grazing. The grazier is not yet convinced that younger cattle will fatten sufficiently quickly for this purpose. It was said that young cattle under 2 years old either fail to fatten or take a long time to do so. This belief is to some extent in evidence in the figures obtained in the survey. Fourteen out of the 141 cattle under 2 years old, equal to nearly 10 per cent., were not fat at the end of the period when the survey was closed down, and were being carried into the next grazing season. On the other hand, less than 2 per cent. of the 2–3-year-old cattle and 3-year-old cattle were unfinished. This defect in young cattle may be due partly to the condition of the cattle. It is a common complaint of graziers that forward beasts of 18–24 months old are not available, and judging by the condition of this class of cattle brought into the area the grazier is quite justified in favouring the older cattle.

A chart of the supply of all the cattle in the survey to the market is shown in Figure 1 (page 30).

(*b*) According to the inquiry by the Ministry of Agriculture in 1927, already quoted, it was shown that small-weight cattle gave the best prices per cwt., that prices increased up to

10 cwt., and that a progressive decline in the price took place as the cattle increased above that weight.[1] In so far as the cattle in the survey are concerned, while it is true that young cattle (which are taken as being synonomous with small cattle), realized the best prices per cwt., it did not appear that the 3-year-old cattle (which are taken as representative of the heavy

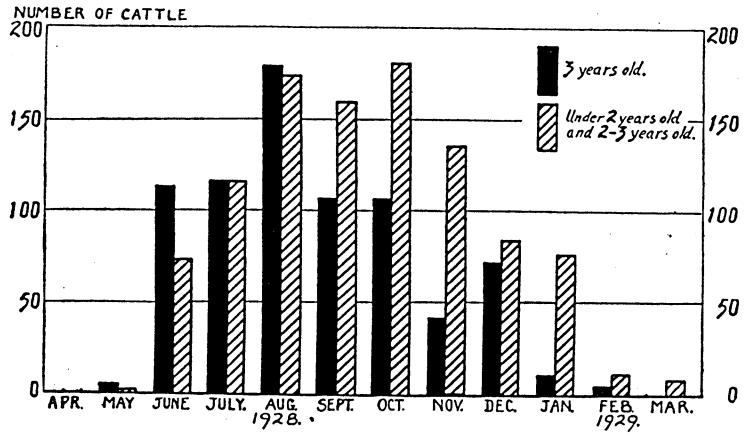

Chart 1. Monthly distribution of cattle sold, by age groups, April 1928 to March 1929.

cattle) fetched the poorest price per cwt. The figures of weights and prices per cwt. of the cattle in the three age groups, in each month when sales were taking place, are shown in Table XIII.

Although it is to be remembered that the number of 2-year-old cattle in the sample is small, the survey prices correspond with those given by the Ministry of Agriculture for this class of cattle. It is to be noticed that in all months of the year except December, the average prices of this class of cattle were superior to those of the other age groups. The average margin per cwt. of the young cattle group over that of the 3-year-old group was 10*d.* per cwt. Differences higher than average appear in the months of June, July, August, and January and smaller differences in September, October, and November.

[1] See page 7.

TABLE XIII

Average weight and price per cwt. for cattle sold in each month.

	Under 2 years old.			*2–3 years old.*			*3 years old and over.*		
Month of sale.	*No. of cattle.*	*Average weight.*	*Average price per cwt.*	*No. of cattle.*	*Average weight.*	*Average price per cwt.*	*No. of cattle.*	*Average weight.*	*Average price per cwt.*
1928.		*cwt.*	*s. d.*		*cwt.*	*s. d.*		*cwt.*	*s. d.*
June.	16	9½	58 9	44	10½	52 6	119	12	57 4
July.	14	9½	56 4	71	10½	54 5	111	13	55 4
Aug.	16	9¼	54 1	86	10	48 4	163	11½	50 10
Sept.	20	10	48 0	38	10	46 9	105	11¼	47 9
Oct.	6	9½	46 3	77	10½	45 1	125	11½	45 7
Nov.	4	11	47 2	73	10¾	45 9	34	11½	46 10
Dec.	10	9½	40 2	54	11	47 4	48	11¼	43 0
1929.									
Jan.	4	11	49 9	18	12	46 10	4	12	47 6
Average.	90	9¾	51 6	461	10½	48 5	709	11½	50 8

The surprising feature is the fact that the 3-year-old cattle sold better throughout the whole period than the 2–3-year-old cattle, though on average they were fully one cwt. heavier in weight. It was agreed among graziers that big cattle sold particularly well in the two early summer months of 1928, but that they held an advantage during five of the six remaining months of the selling period is contrary to expectations in view of the asserted demand for small joints. This point is discussed later.

The evidence of prices obtained for the cattle included in the survey appears, therefore, to favour the youngest class of cattle. The average prices of 3-year-old cattle was a little behind those of the cattle under 2 years old. The average prices obtained for the medium-age cattle of the 2–3 years old group were the least satisfactory.

Summarizing the points which have arisen in this section, it seems that, when the cattle are classified according to the condition of the stores at the commencement of grazing, the more satisfactory profits, in the case of stores which were in lean and

fair condition, were earned by the 3-year-old cattle. In the case of stores which were in forward and half-fat condition, results slightly more favourable were shown by the younger cattle.

The cost of lean and fair stores was not materially different for all age classes. In the case of forward stores, 3-year-old cattle were the most expensive to buy.

More of the 3-year-old cattle were marketed in the season of short beef supplies, when prices were higher than average.

The youngest age class of cattle secured the best average prices throughout the selling season. Three-year-old cattle, however, sold at only slightly lower prices throughout the season. The average prices realized for 2–3-year-old cattle were least satisfactory.

There was no material difference in the total live-weight increase in the three age classes. The 3-year-old cattle, however, were on the farms for a shorter period, and, therefore, they showed a better rate of live-weight increase compared with the other classes.

IV

SEASONAL FLUCTUATIONS IN FAT CATTLE PRICES

It is proposed in this section to deal in a more general way with one of the most important problems of the grazier, namely, the seasonal fluctuations of the market for fat cattle. Examination of the monthly average prices for the country shows that they tend towards a seasonal trend. Fat cattle prices generally are above the average for the year from February to August inclusive, and below the average from September to January inclusive, with the highest prices ruling in May and June and the lowest in November.

The seasonal fluctuation in the average monthly prices over the seven years 1922–8 for first- and second-grade cattle in Rugby and Northampton markets is shown in Figure 2 and the fluctuations are similar for the whole country.[1]

This typical fluctuation is, of course, mainly the result of the conditions of fat-cattle production in this country. The supply

[1] *Factors Affecting the Prices of Livestock in Great Britain: A Preliminary Study*. K. A. H. Murray, pp. 58–60. Clarendon Press, Oxford.

of fat cattle from December to April is drawn from the system of winter feeding in yards. The supplies from August to November are drawn from the grazing farms. The period of peak prices, May, June, and July, is the period of scarcity caused by the gap between the supplies drawn from these two sources.

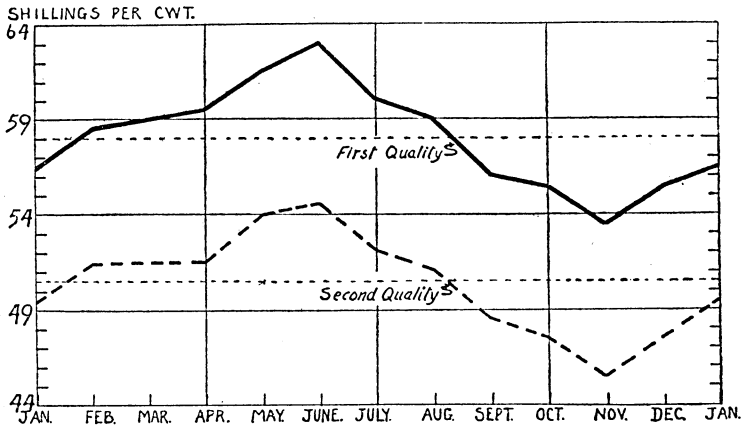

Chart 2. Average monthly prices of first and second quality fat cattle on Rugby and Northampton markets, 1922–8.

Graziers are fully alive to the advantages of being able, in part at least, to command the favourable market in June, July, and August (May being almost impossible for them), and of avoiding so far as possible the slump in the October and November prices, which is caused by the flood of cattle off the grass. The industry, however, is governed by certain natural conditions of production which render impossible anything like a delicate adjustment to market conditions.

The grazier has a certain acreage of grass to be eaten off during the season, which may last from the middle of April to the end of November. Apart from estimating the total number of cattle which can be carried, the stocking policy—planned at the beginning of the season—is governed by the necessity of utilizing the grass to the fullest advantage. In the spring, therefore, the grazier is carrying stores in varying condition in order that the

cattle may not all be ready for market at the same time. Forward stores, because of their condition in the spring and being given the best grass, will be off in June, July, and August. Lean stores will be drawn out on to the better grass and will not generally reach the market until the latter part of the season. The grazier's problem, therefore, involves carrying the right proportions of stock in varying condition at the beginning of the season, and adjusting the management to the varying quality of grass available throughout the season.

The shortage of supplies of fat cattle on the market in the summer months and the apparent glut of supplies in the autumn would suggest that there is a lack of adjustment in the proportions of forward, fair, and lean stores put on the grass in the spring, but it may be due also to the fact that, with the best judgement in the world, some cattle will not fatten to time-table and grass may fail to fulfil the promise of the spring. Cattle may, therefore, be held on until the end of the season to be put on the market in much less than first-class condition.

Many graziers endeavour to avoid selling in the late period by two policies, either by caking the stock on grass throughout the whole period, or by deferring sale until the recovery of the market towards Christmas or the following January. The first policy endeavours to get the cattle to market before prices reach their lowest level, while the second aims at carrying over past the lowest price period. The forcing of cattle by means of cake was not a uniformly profitable policy as shown by the survey data for the year 1928. (See Table XIV.) But it must be remembered that the year 1928 was one of a series of years of depressed prices for fat cattle, and a policy of intensive feeding, which is unprofitable at such a time, is not necessarily so when generally good prices prevail. The question of the best feeding stuffs for fattening cattle on grass is one which might receive more consideration on the part of graziers.[1]

The other policy is to defer sale of cattle, which are in almost finished condition in autumn, until December or even later. The cattle are carried on November and December grass with a moderate ration of hay and cake. It is said that there is practically

[1] Linseed cake, cotton cake, and compound fattening cakes were the most popular concentrates used. Other kinds of cakes and meals were rarely fed.

TABLE XIV

Influence of method of feeding on financial results of grazing cattle.

Feeding of cattle.	*Total No. of farms.*	*Farms showing* PROFITS.		*Farms showing* LOSSES.	
		No.	*Per cent.*	*No.*	*Per cent.*
A. Cattle in lean and fair condition.					
Grass fed only.	15	13	86·6	2	13·4
Cake throughout.	12	5	41·7	7	58·3
Cake in autumn.	21	17	80·9	4	19·1
B. Cattle in forward and half-fat condition.					
Grass fed only.	6	6	100·0	0	—
Cake throughout.	16	11	68·7	5	31·3
Cake in autumn.	9	8	88·8	1	11·2

no live-weight gain obtained by so doing, but that the additional price per cwt. obtained when the cattle are sold on the improving market is more than sufficient to pay for the hay and cake. In practising this method, it is necessary to hold cattle for some 6 to 10 weeks at a cost of hay and cake of from 24*s.* to 40*s.* per head—equivalent to from 2*s.* 2*d.* to 3*s.* 8*d.* per cwt. for a beast of 11 cwt. live-weight.

It is problematical whether the practice of deferred sale is a good general policy or not. In the absence of suitable cover it must be difficult to keep the animals in condition, especially in inclement weather.

Many graziers give as the reason for the poor prices of cattle in October and November the fact that Norfolk and other yard feeders no longer come on to Midland farms to buy unfinished cattle, a practice which, prior to the fall in beef and cereal prices and to the increased laying down of land to grass, reached considerable dimensions. Many of the graziers are forced by the termination of hired grazings to put unfinished cattle on the fat stock market, thereby helping to kill the market and forcing others to adopt the policy of holding over in the hope of improved prices. It is not a practice which commends itself to the grazier, as he is not conveniently placed for feeding the cattle

satisfactorily at the time of year, whereas yard feeders have ample supplies of home-grown foods and suitable accommodation in which to house the cattle. A revival of the trade with the yard feeders in these unfinished cattle would have a steadying influence during October and November and there would seem to be mutual advantage in the trade.

Apart from the detrimental effect of supplies of poorly finished cattle forced on the market at the end of the grazing season, too great emphasis perhaps can be laid on the autumn slump in prices. It is a recognized feature of this business and the experienced grazier allows for it in the prices which he offers in the spring for lean stores. There is evidence of it in the figures shown for cost of stores. (See p. 24.)

Also, as has already been stated, the grazier has a given amount of grazing to be utilized through the whole season and his supply of grass does not taper off so gradually as to enable him, even if the live stock were tractable, to grade off his supplies to market as evenly as the market might demand. The fall in prices in autumn, therefore, while it might be lessened by the withdrawal of semi-finished cattle, is very largely the result of the very great dependence of this type of farming upon the materials of nature, namely, grass and live stock, with which the grazier has to work and is to a considerable extent discounted in the grazier's policy by the prices which he offers for lean stores.

There remains, however, the period of scarcity of fat cattle and the consequent peak of prices in June and July. Graziers are fully alive to the advantages of capturing at least a part of the early market. They are not, however, their own masters in the matter. Graziers draw their stores from the farmers in the store-rearing districts. The proportions, therefore, of forward, fair, and lean cattle which are put on the grass in the spring are very largely governed by the available supply of stores of each class and there does not appear to be a very close adjustment of the supply to the demand.

The graziers might be able to exercise more control over the proportions of stores of different condition in the spring by themselves carrying a larger number through the winter. By buying supplies in the spring they have to take what the

market offers, when it is too late to effect any preparation of the stores before putting them on the grass to fatten. Provision of some sheds in the fields and the reservation of more land for hay would be necessary, but neither of these should present an insuperable difficulty or involve any large outlay. The small additional cost would be balanced in part by the lower prices of stores ruling from August to January.

These conditions apply to the supply of stores of any age, but the supply of a younger class of stores in forward condition presents additional difficulties. In the more inaccessible and inclement areas where store raising is carried on, cows calve down mainly in the spring. It follows, therefore, that the majority of the store cattle are either two or three years old when the grazing season commences. The basis of the store raising system of farming is cheap natural food for the breeding and young stock. The system is adapted to supplying 3-year-old cattle in fair and forward condition, which make quick gains on the good grass, or 2-year-old cattle in lean or, at the best, fair condition.

It is difficult to see how it could be modified to supply in large numbers cattle of less than two years. A change would involve calving down a proportion of the cows in the summer and autumn, and this is not to be accomplished without a permanent increase in the costs of the system.

Failing a change to autumn and winter calving in the store raising districts, a radical change in the policy of breeding beef cattle so as to produce a smaller type of animal would seem to be necessary; a change which would take some considerable time to effect.

It seems probable that the graziers will have to look for supplies of stores which are to fatten out at two years old or thereabouts to those milk-selling farmers who are using beef bulls, a practice which is becoming more popular in some parts, although high prices for winter milk in areas which combine rearing with milk-selling have reacted against the raising of large numbers of autumn and winter born calves.

V

CONCLUSION

The survey, by means of which the information and figures used in this report were obtained, was carried out during the season 1928, when beef prices continued to stand at the low level which prevailed from 1924 onwards. Any deductions made from the figures must, therefore, be subject to the reservation made necessary by the existing level of prices.

The main purpose of the study was to examine the problem of readjustment by graziers to what is popularly believed to be a complete change in the public demand towards smaller joints of beef. The survey has shown that the graziers are fully alive to the question and that there are very few who have not given some thought to it. Not a large number, however, were trying out a system of fattening young cattle on grass and scarcity of cattle of this class has made it difficult to analyse the survey data as thoroughly as would be necessary for arriving at definite conclusions as to the financial results.

The survey, however, has revealed that the situation is not entirely one of inertia and natural resistance to change from a time-honoured system. The necessity for readjustment is not so acute as is commonly stated and there are some genuine difficulties in the way of readjustment which are not entirely within the control of the graziers themselves.

Some of the graziers, who claimed to have had experience of young cattle, were entirely against them on the ground that the pastures were too 'strong' and the young cattle scoured badly in consequence. Others, however, were of the opinion that if the young cattle were in good condition as stores they were not likely to suffer from scouring. No doubts were expressed of the capacity of this class of cattle when introduced to 'store' land or to second quality pastures. Most graziers have a considerable acreage of this land (some of which has been improved by slag and other artificial manures) and it would seem to be quite possible for graziers to extend their buying of young cattle and to feed them by progressive stages leading on to the first-class pastures as conditions permit.

It was also stated that young cattle grew without fattening, but again there was a contrary view held that, while they were slower to fatten than 3-year-old cattle, they did, given suitable store condition, put on sufficient live-weight in the season.

The difficulty of obtaining suitable stores is perhaps the most fundamental obstacle to fattening young cattle on grass. Stores are mainly derived from the specialized districts where a system of spring calving is universal and are, therefore, almost exactly either 2 or 3 years old when they come into the market. It is difficult to see how, without a change of system in the raising districts, large supplies of store cattle under 2 years can be secured. Such a change would involve autumn or winter calving which does not appear to be conveniently suited to the natural conditions of the raising districts.

Meantime, it seems probable that the grazier must look for supplies of stores which will fatten out at 2 years old to those milk-selling farming areas where beef bulls are used. This practice of combining milk-selling with rearing of young beef stock appears to be becoming more popular in some parts.

The question of baby-beef—i.e. animals of 16 to 20 months old—has not been discussed. It was the general consensus of opinion that baby beeves could not be handled by the graziers. All the experimental work on the subject has been confined to feeding in yards or boxes and it is generally accepted, if the production of baby-beef is to be successful, that the animals should receive no check in their feeding from birth to the time of sale. This necessity is hardly in keeping with the movement of stores from farm to market in the raising areas; rail transport to the grazing areas; and again from market to farms in these areas.

It is clear, however, from the survey that one of the main reasons why there has been no violent change in this grazing area to a system of fattening younger and smaller cattle is that there appears to be still a strong demand for large 3-year-old cattle. Not only were the prices obtained for 3-year-old cattle favourable throughout the season, but the profits returned from these cattle were satisfactory. It was quoted as the general experience of Leicestershire graziers that Leicester and Northampton markets will generally pay as much for big mature beef as for younger or smaller animals.

It would appear that the influence of the change in domestic demand for small joints upon the whole market for fat stock has been over-emphasized. The household trade has no doubt undergone a marked change and housewives no longer desire large joints of beef, but there is a large part of the beef trade which does not cater for households at all, but for the hotel and restaurant trade. It is also well known that the custom of lunching and dining out has increased very much in recent years. The relative proportions of the total production of beef which goes into one or other of these channels of consumption is unknown and cannot even be estimated from available data, but when it is remembered that the large joint of beef holds a place of honour *daily* in every inn, hotel, and restaurant in the country, whereas the household demand is a *weekly* one in competition regularly with mutton and pork, the influence of the hotel-restaurant trade cannot be ignored. There is presumably no trend in the hotel-restaurant trade towards small, immature beef, so that to assume that the demand for large 3-year-old cattle is dead because the household taste has changed is unjustifiable.

The graziers are emphatic as to the value of the 3-year-old cattle for capturing the market in the early part of the season when prices are high. The supply of forward stores of the 3-year-old group is greater and this class of cattle puts on liveweight increase quicker on the grass than the younger stock. Of the totals of the three classes of cattle sold, 55 per cent. of the 3-year-old class was off to market in May, June, July, and August, as compared with 37 per cent. of the 2-year-old class and 35 per cent. of the 2–3-year-old class.

The financial returns were favourable on those farms on which cattle in the 2-year-old class were fattened, although the number of farms available for study was scarcely adequate for definite conclusions.[1] Where the cattle were intelligently handled, they were financially successful. The prices obtained per cwt. for this class of cattle were the highest of the three, which would indicate a genuine demand for this class.

It would appear from the survey, however, that while there is a good demand for both the large mature cattle at 3 years old and for the small 2-year-old beasts, the intermediate age seems

[1] For details of each farm see Appendix A.

to fail to command as good a market. It must be remembered, however, that this class constitutes a large proportion of the total and it does not follow that there is no special demand for this intermediate type, but the prices would seem to indicate that the supply was in excess of what demand there was. It is, of course, possible to deduce that while the young cattle hit the domestic market and the 3-year-old cattle hit the hotel-restaurant market, this intermediate class is only second best to both of them and has no special market of its own, but the evidence available does not warrant so definite a conclusion. There would seem to be, however, justification for a reduction in the number of cattle of this class grazed.

To sum up briefly:

There is no evidence from the survey that the market in this district for large 3-year-old cattle is dead. On the contrary, this class fetched fair prices throughout the whole season and yielded at least as good returns as the younger age classes. Furthermore the grazier counts on the 3-year-old cattle to obtain the early market. Those of medium age, from 2–3 year old, fetched poorer prices and were not so profitable. Cattle of the 2-year-old class, where they were tried and intelligently handled, fetched prices slightly better than 3-year-olds and were profitable to the graziers. The main obstacle to an extension of grazing this youngest class is the supply of stores in suitable condition.

APPENDIX A

Farms grazing cattle under two years old examined in detail.

As the object of this inquiry was to endeavour to test the possibilities of feeding young cattle on grass, and particularly those cattle under 2 years of age, the details of the farms, eight in number, on which farmers were trying out this age class of cattle are given below.

(1) *Cattle in lean or fair condition.*

Farm 73. Ex-Harborough district.

The cattle in the 2-year-old class on this farm consisted of 6 Hereford yearling bullocks in fair store condition purchased in the late spring of 1928 at £13 10*s.* each. Grazing started in the beginning of May and no other foods were fed, the farmer regarding them as an experiment to see if they could be fattened on grass alone. The cattle, however, did not put on flesh and they were still in store condition at the end of the grazing season, consequently they were being kept to be fattened during 1929.

These were very young cattle and as the pasture was only of moderate quality it was hardly to be expected that they could be fattened without the assistance of concentrated food, especially considering their condition at the commencement of the grazing season.

The farmer considered that they had increased in value by £3 per head during the grazing season, with which he was content, as they had paid more than sufficient to cover the grazing, labour, and other expenses.

Farm 41. Harborough district.

The policy on this farm was to rear cattle for sale to feeders, as the land was not particularly suitable for fattening. The farmer bred Aberdeen-Angus Shorthorn crosses which were sold at 2 and 3 years old in the autumn to winter feeders.

So far as this inquiry is concerned this case is not particularly applicable, but it is interesting as indicating a line of business which was not expensive and yielded a good profit.

There were nine of these Aberdeen-Angus crosses under 2 years old on the farm, which were valued as fair stores at £14 a head on the 1st of May. They were sold at home off the grass in the first week of October in nice forward store condition at £19 a head. The gross margin was, therefore, £5 a head, a figure which compared favourably with that of cattle which were fattened on many of the grazing farms. Expenses for grazing, labour, and overhead came to £2 14*s.* 6*d.* per head, and a profit of £2 5*s.* 6*d.* per head remained.

Farm 85. Harborough district.

This lot consisted of 11 Lincoln Red bullocks, bought at £20 per head in the spring of 1928 in fair condition. They were put out to graze on the 16th of April. They had nothing except grazing until the 4th of June, after which they were given an allowance averaging 2 lb. of cotton cake per day until sold. Five of the bullocks were sold on 5 September and the remaining six on the 12th of October. The total amount of cake fed amounted to 1 ton 2 cwt.

The average period of grazing was 162 days. During this time they were estimated to have increased 24 cwt. in live-weight equal to 2·18 cwt. per head. The final selling weights were just short of 10 cwt. per head and the price realized was £23 12*s.* per head, or 47*s.* 5*d.* per cwt. This was less than the buying-in price of 49*s.* 5*d.* per cwt.

The gross margin of £3 12*s.* was insufficient to cover the expenses and a loss of £2 9*s.* 2*d.* per head was shown. It would appear that these cattle were bought too dear and they were not ready for sale until September and October, when a lower level of prices was operating.

Farm 34. Harborough district.

The 2-year-old cattle on this farm comprised 9 bullocks and 3 heifers of the Shorthorn breed. These were in fair condition when put out to graze on 1st May, 1928, and were estimated to weigh 8 cwt. each and were valued at £17 a head, equal to 42*s.* 6*d.* a cwt.

One bullock was sold at the end of August and the three heifers in the beginning of December. The remainder of the bullocks were unsold in March 1929 and they were being kept for the next grazing season.

Estimates of the value and weight of the unsold cattle were made and by adding these to the price realized and weight of the cattle sold the resulting average value was £22 8*s.* 4*d.* and the weight 9·75 cwt. per head. This would give the gross margin as £5 8*s.* 4*d.* per head and the live-weight increase 1·75 cwt.

The four cattle which were sold had 15 cwt. of fattening cake between them.

A small profit on this lot of cattle of 14*s.* 6*d.* a head was shown, but as the bulk of the capital involved in the purchase of the cattle would have to lie out for more than a year the profit would only represent a very small return on the outlay.

Farm 71. Harborough district.

This lot of cattle is perhaps the most interesting of all those in the 2-year-old group. They consisted of 53 Devon Red steers bought

as yearlings in July 1927 at a cost of £14 17*s.* 6*d.* a head on the farm. They were wintered out of doors, and besides grazing they received an allowance of grass-nuts amounting to 3 lb. per head per day from 16th November 1927 to 13th December 1927. Thence they received 4 lb. of grass-nuts per head per day until the 20th of May 1928. During the whole of the period they had also moderate rations of poor quality hay. The quantity of cake fed amounted to slightly over 15 tons at a cost of £159 and of hay 20 tons at an estimated cost of £60. The cost of wintering, exclusive of land and labour, was therefore £219 or £4 2*s.* 8*d.* per head, which brought up the cost of the stores in May to £19 0*s.* 2*d.* per head.

All the cattle were disposed of by the 1st of October 1928 and only the last two lots, consisting of 9 steers, which were finished on cake, received anything except grazing. The average price realized was £26 16*s.* 1*d.* per head which left a gross margin of £7 15*s.* 11*d.* per head over their value in May. Full details of the costs of the cattle, prices, and costs of maintenance are given in the following statement:

	Estimated live-weight. cwt.	*Cost per cwt.* s. d.	*Total cost.* £ s. d.
1. *Cost of cattle.*			
53 Devon steers in July 1927	331	47 7	788 7 6
Cost of wintering 1927–8	—	—	219 0 0
Total cost to May 1928	410	49 9	1,007 7 6

			Live-weight cwt.	*Price per cwt.* s. d.	*Total price.* £ s. d.
2. *Sales of cattle.*					
1928	June 4	5 steers	50	67 0	162 10 0
	11	6 ,,	57¼	55 6	158 15 0
	18	5 ,,	47¾	56 1	134 0 0
	July 9	3 ,,	29½	58 6	86 5 0
	16	5 ,,	48	56 9	136 5 0
	30	6 ,,	58	54 10	159 0 0
	Aug. 6	5 ,,	47¼	55 4	130 15 0
	23	4 ,,	37	51 7	95 10 0
	27	5 ,,	46	57 0	131 5 0
	Sept. 17	6 ,,	61½	49 3	151 10 0
	Oct. 1	3 ,,	30½	49 4	75 0 0
		53 ,,	512¾	55 5	1,420 15 0

	£	s.	d.	£	s.	d.
3. The gross margin was therefore (£1,420 15s. less £1,007 7s. 6d.)				413	7	6
4. Maintenance costs:						
Grazing 80 acres at 30s.	120	0	0			
Feeding stuffs: 12 cwt. for last 2 lots sold	6	12	0			
Labour for year	54	3	4			
Marketing tolls, commissions, and other expenses	14	13	10			
Overhead expenses on farm	18	0	0			
				213	9	2
Profit				£199	18	4

The maintenance costs were slightly over £4 a head and the profit was equal to £3 15s. 5d. per head.

The weight of the steers when bought in July 1927 was stated to be 6·25 cwt. At the close of the wintering the average weight was estimated to be 7·75 cwt. and the selling-weights were actually 9·67 cwt. From the commencement the live-weight increase was 3·42 cwt., of which 1·50 cwt. was the gain made up to the middle of May 1928 and the remainder 1·92 cwt. was the average increase from that date until sold.

The earliest batch of cattle were sold 35 days, and the last lot, sold in October, 155 days from the 1st of May. The average length of the summer grazing period of fattening was only 84 days.

The farmer was particularly well satisfied with these cattle. They had matured quickly and consequently he had obtained the high prices prevailing in the early part of the summer, for which market it was thought only the 3-year-old cattle could be finished in time on grass. The grass on the farm could not be considered as being of super quality, since only some 30 acres out of 180 acres of grazing are thought good enough to feed a bullock to the acre. It will be noticed that the area grazed throughout by these beasts was approximately 1½ acres per head.

It should be noticed also that the price of these cattle was well maintained during August, September, and October, and is evidence of the demand for these small cattle and also of their condition at the time of sale. Most of the cattle were described by the farmer as of prime quality.

Farm 53. Ex-Harborough district.

The 2-year-old cattle in this case were a bunch of 10 Aberdeen-Angus cross-bred bullocks reared in the Cotswolds and bought on the 21st of March 1928 for £18 10s. a head. The farmer estimated their weight at 7¼ cwt. each and classed them as fair stores.

They had an allowance of hay until the first week in May when the grass was good enough to carry them.

Six of the cattle were sold towards the end of October and beginning of November. These received no concentrated foods. The remaining four were sold in January out of the yards. They were yarded on 14 November and from then received a full winter ration which averaged 5 lb. cake, 20 lb. clover hay, and 56 lb. roots per head per day.

Full particulars of costs and selling prices were as follows:

	Estimated live-weight cwt.	*Cost per cwt.*	*Total cost.*
1. *Cost of cattle.*		*s. d.*	*£ s. d.*
10 A.A. + bullocks	72½	51 0	185 0 0

	Live-weight cwt.	*Price per cwt.*	*Total price.*
2. *Sales of cattle.*		*s. d.*	*£ s. d.*
1928 Oct. 27 2 steers	23	49 7	57 0 0
Nov. 7 4 ,,	45	47 2	106 5 0
1929 Jan. 5 3 ,,	32	50 7	81 0 0
12 1 steer	11	47 3	26 0 0
10 steers	111	49 0	270 5 0

3. Gross margin (£270 5*s.* less £185)			85 5 0
4. Maintenance costs:	*£ s. d.*	*£ s. d.*	
Grazing 13 acres		35 0 0	
Feeding stuffs:			
Hay for 10 cattle in spring 1928	7 10 0		
Winter ration for 4 cattle	16 10 8		
		24 0 8	
Labour		6 0 0	
Market expenses		2 5 0	
Overhead expenses, &c.		2 18 6	
			70 4 2
Profit			£15 0 10

The average selling price was £27 0*s.* 6*d.* per head, the gross margin £8 10*s.* 6*d.* per head, expenses £7 0*s.* 5*d.* per head, and the profit £1 10*s.* 1*d.* per head, which was good. The gross margin was high. This was not due particularly to favourable selling prices, as these

were below the average buying in cost per cwt., but to the large live-weight increase which was 3·8 cwt. per head.

Expenses were high owing to the costs of wintering four of the cattle.

The average length of the grazing period from the 1st of May was 213 days.

Farm 72. Harborough district.

The cattle in this case consisted of 20 Shorthorn heifers in fair condition on the 1st of May. The average cost was £17 10*s.* and the average weight about 8 cwt.

They were grazed along with sheep on moderate grazing rented at 30*s.* an acre until the 31st of July, after which they followed some 2–3-year-old cattle on a first-class pasture, rented at 70*s.* per acre with shepherding, until the end of August. They were then put on a third field rented at £2 an acre in which they remained until disposed of. Altogether it was estimated that they had had the equivalent of 26 acres of grazing.

Selling commenced on 27 August when 2 heifers were sold, and 5 more were sold 3 weeks later on 17 September. Neither of these lots had cake. The 13 cattle sold subsequently to this had 4 lb. of grass fattening nuts for a month to six weeks prior to sale, and the total quantity consumed was 21 cwt. at a cost of £12 0*s.* 5*d.*

Selling was completed on 3 December.

Particulars of the costs and sales are given in the following statement:

	Estimated live-weight.	*Cost per cwt.*	*Total cost.*
1. *Cost of cattle.*	*cwt.*	*s. d.*	£ *s. d.*
20 Shorthorn heifers on 1 May, 1928.	160·0	43 9	350 0 0

2. *Sales of cattle.*			*Live-weight cwt.*	*Price per cwt.*	*Total Price.*
(*a*) Fat cattle:				*s. d.*	£ *s. d.*
1928	Aug. 27	1 heifer	10·0	45 6	22 15 0
	Sept. 17	5 heifers	50·5	45 9	115 10 0
	22	4 ,,	38·0	46 2	87 15 0
	Dec. 3	7 ,,	66·0	43 2	142 10 0
		17 ,,	164·5	44 9	368 10 0

			£	s.	d.
Total, fat cattle			368	10	0
(*b*) Other cattle:					
Aug. 27	1 heifer (screw)		12	5	0
Oct. 8	2 heifers (with calves)		59	5	0
	20		440	0	0
3. Gross margin (£440–£350).			90	0	0
4. Maintenance costs:					
Grazing		50 0 0			
Feeding stuffs		12 0 5			
Labour		9 12 0			
Market costs		6 5 0			
Veterinary and overheads		5 10 0			
			83	7	5
Profit			6	12	7

Sales averaged £22 per head, the gross margin was £4 10*s.* per head, expenses £4 3*s.* 4*d.*, and the profit was therefore 6*s.* 8*d.* per head.

It will be noticed that none of these cattle was sold during the early summer when prices were higher, which accounts for the low average price obtained for the fat cattle. This price, however, was slightly higher than the buying-in price. The returns were affected by the fact that one of the heifers went 'wrong' and was sold for £12 5*s.* On the other hand this was compensated by the excellent price received for two of the heifers which proved to be in calf and were sold with their calves at foot.

The average weight of the 17 cattle sold was 9·7 cwt., which makes the live-weight gain to be 1·7 cwt. The length of the grazing period was 157 days.

(2) *Cattle in forward condition.*

Farm 79. Ex-Market Harborough district.

The 2-year-old cattle on this farm were a mixed bunch of 20 Aberdeen Angus crossed Shorthorn and Hereford crossed Shorthorn cattle. They were valued at £15 10*s.* on the 7th of May, when they were put out to graze. Prior to this they had been receiving a ration of concentrated food and were classed as cattle in forward condition.

They were on 20 acres of pasture throughout the summer, receiving no cake, but were not fat and from the middle of September till their sale in January 1929 they received a ration of 10 lb. of cake and meal per day, made up of 4 lb. linseed cake, 4 lb. cotton cake, and 2 lb. bean meal.

The average price realized was £25 6*s.* per head and the gross margin was £9 16*s.* per head. Owing to the cost of wintering on cake, costs were high. They were as follows:

	Total cost. £	*s.*	*d.*
Maintenance costs:			
Grazing 20 acres	40	0	0
Feeding stuffs:			
10 tons at £11 10*s.*	115	0	0
Labour	12	16	8
Marketing expenses	6	0	0
Overhead expenses	4	10	0
	178	6	8

The expenses were, therefore, £8 18*s.* 4*d.* per head, of which £5 15*s.* represented concentrated food. The profit was 17*s.* 8*d.* per head.

The length of the period from commencement of grazing until the cattle were sold was approximately 7 months.

APPENDIX B

TABLE XV. *Cattle in lean and fair condition as stores.* (i) *Grass fed.*

Farm number.	*No. of cattle.*	*Increase in live-weight per head.*	*Cost and returns per head.*			*Expenses per head.*					*Profit (+) or Loss (−) per head.*	*Average cost of stores.*	*Average price fat.*	*Acres of grazing per head.*	*Average time taken to fatten.*
			Cost of stores.	*Selling price.*	*Margin.*	*Grazing.*	*Foods.*	*Labour.*	*Other costs.*	*Total cost.*					
		cwt.	£ s.	£ s.	£ s.	s. d.	s. d.	s. d.	s. d.	£ s.	£ s.	per cwt. s. d.	per cwt. s. d.	acres.	months.
a. 2 *years old.*															
73	6	—	13 10	16 10[1]	3 0	30 0	—	17 0	—	2 7	+0 13	—	—	1·0	7·0
41	9	—	14 0	19 0[2]	5 0	40 0	—	10 0	4 6	2 14	+2 6	—	—	1·0	5·2
a. 2–3 *years old.*															
70	18	—	19 0	25 12	6 12	51 11	—	11 0	13 10	3 17	+2 15	—	—	1·0	5·7
52	10	1·5	18 0	24 3	6 3	54 0	—	10 1	10 11	3 15	+2 8	38 0	44 7	1·7	5·5
78	40	2·7	19 10	24 15	5 5	35 0	—	11 0	11 0	2 17	+2 8	47 6	46 1	1·3	4·7
82	12	2·2	22 10	29 0	6 10	89 0	—	11 0	4 6	5 5	+1 5	46 3	48 4	1·0	6·5
41	10	—	18 0	23 0[3]	5 0	40 0	—	10 0	4 6	2 15	+2 5	—	—	1·0	3·5
18	20	1·7	21 10	26 0	4 10	56 0	—	15 0	7 4	3 18	+0 12	46 6	47 2	0·9	5·1
17	12	1·5	16 0	19 0	3 0	35 0	—	12 0	4 6	2 11	+0 9	44 0	42 3	1·0	4·2
40	15	—	16 0	20 10	4 10	50 0	—	6 6	4 6	3 1	+1 9	—	—	1·0	4·5
b. 3 *years old and over.*															
5	18	1·3	22 0	25 0	3 0	39 0	—	15 0	11 0	3 5	−0 5	46 3	46 8	1·2	4·7
48	31	—	20 0	26 14	6 14	75 0	—	5 4	16 2	4 16	+1 18	—	46 8	1·2	5·6
48	5	—	16 15	20 12	3 17	75 0	—	5 1	14 6	4 15	−0 18	—	43 0	1·2	5·0
75	46[4]	—	26 0	34 18	8 18	35 0	—	27 4	4 8	3 7	+5 11	—	54 5	1·0	5·3
40	8	—	19 0	24 7	5 7	50 0	—	6 6	10 0	3 7	+2 0	—	48 9	1·0	3·5
c. *Other cattle.*															
22	11	2·1	13 0	19 0	6 0	70 0	—	20 0	10 0	5 0	+1 0	37 2	41 10	1·3	7·4
35	10	1·5	16 0	19 11	3 11	69 0	—	11 6	9 6	4 10	−0 19	37 8	39 11	1·1	4·9
40	2	—	18 0	21 15	3 15	50 0	—	6 6	9 6	3 6	+0 9	—	38 8	1·0	2·5

[1] These bullocks were unsold at the end of the grazing season. Valued as stores.
[2] Sold as forward stores.
[3] Sold as forward stores.
[4] 18 of these cattle were of forward condition and were sold in July at 60*s.* a cwt.

TABLE XV

Cattle in lean and fair condition as stores. (ii) *Caked throughout.*

Farm number.	*No. of cattle.*	*Increase in live-weight per head.*	*Cost and returns per head.*			*Expenses per head.*					*Profit (+) or Loss (−) per head.*	*Average cost of stores.*	*Average price as fat.*	*Acres of grazing per head.*	*Average time taken to fatten.*
			Cost of stores.	*Selling price.*	*Margin.*	*Grazing.*	*Foods.*	*Labour.*	*Other costs.*	*Total cost.*					
		cwt.	£ s.	£ s.	£ s.	s. d.	s. d.	s. d.	s. d.	£ s.	£ s.	per cwt. s. d.	per cwt. s. d.	acres.	months.
a. 2 *years old.*															
85	11	2·2	20 0	23 12	3 12	78 0	21 0	13 0	9 0	6 1	−2 9	49 5	47 5	—	5·4
34	12	1·7	17 0	22 8	5 8	38 4	14 10	29 2	11 6	4 14	+0 14	42 6	46 0	1·6	7·5
a. 2–3 *years old.*															
57	50	2·0	21 0	26 4[1]	5 4	66 0	39 7	12 0	6 0	6 4	−1 0	46 8	47 6	1·2	4·3
47	39	—	18 3	22 0[2]	3 17	28 6	29 10	11 6	16 0[2]	4 6	−0 9	—	—	—	5·6
63	3	—	19 0	22 19	3 19	47 0	36 0	11 6	4 6	4 19	−1 0	—	54 0	1·0	2·7
88	22	1·9	16 10	20 6	3 16	54 4	14 5	16 0	12 1	4 17	−1 1	47 2	45 4	1·5	6·0
62	69	1·8	20 0	23 15	3 15	39 5	27 6	9 6	10 0	4 6	−0 11	44 5	44 1	1·0	4·0
9	26	2·0	21 19	23 0[3]	1 1	75 4	30 0	12 4	6 9	6 4	−5 3	51 8	43 10	1·5	7·0
85	10	2·0	22 10	30 0	7 10	78 0	12 7	13 0	9 0	5 13	+1 17	50 0	54 7	—	4·2
20	12	—	16 0	19 18[4]	3 18	50 0	4 4	10 0	10 2	3 14	+0 4	—	—	1·0	4·3
b. 3 *years old and over.*															
63	15	—	18 0	25 4	7 4	47 0	33 0	12 0	4 6[5]	4 16	+2 8	—	50 11	1·0	2·4
68	23	2·6	18 2	28 6	10 4	70 0	26 5	3 5	6 10[6]	5 7	+4 17	41 2	50 2	1·5	5·0
c. *Other cattle.*															
18	11	3·3	15 0	21 15	6 15	50 11	38 2	13 8	11 2	5 14	+1 1	37 6	38 3	0·9	3·8

[1] One poor beast sold for £16.
[2] One was a screw. Marketing costs high, some of the cattle being sent to Birmingham.
[3] Ten beasts unsold at end of season and valued at less money per head than in the spring.
[4] One heifer was a screw and fetched £1.
[5] Marketing costs deducted from price realized.
[6] Sold privately. No marketing expenses.

TABLE XV. *Cattle in lean and fair condition as stores.* (iii) *Caked in autumn.*

Farm number.	*No. of cattle.*	*Increase in live-weight per head.*	*Cost and returns per head.*			*Expenses per head.*					*Profit(+) or Loss(−) per head.*	*Average cost of stores.*	*Average price fat.*	*Acres of grazing per head.*	*Average time taken to fatten.*
			Cost of stores.	*Selling price.*	*Margin.*	*Grazing.*	*Foods.*	*Labour.*	*Other costs.*	*Total cost.*					
		cwt.	£ s.	£ s.	£ s.	s. d.	s. d.	s. d.	s. d.	£ s.	£ s.	per cwt. s. d.	per cwt. s. d.	acres.	months.
a. 2 *years old.*															
71	53	1·9	19 0	26 16	7 16	45 3	2 6	20 5	12 4	4 0	+3 16	49 0	55 5	1·3	2·7
53	10[1]	3·8	18 10	27 0	8 10	70 0	48 1	12 0	10 4	7 0	+1 10	51 0	49 0	—	8·3
72	20	1·7	17 10	22 0	4 10	50 0	12 0	9 7	11 9	4 3	+0 7	—	—	1·3	5·7
a. 2–3 *years old.*															
58	35	2·7	18 10	24 16	6 6	63 6	9 7	4 10	10 6	4 8	+1 18	44 10	46 7	1·2	5·9
80	10	—	14 0	23 11	9 11	52 0	42 0	14 2	5 10	5 14	+3 17	—	45 3	1·3	7·2
87	62	1·9	19 8	23 4[2]	3 16	34 0	4 1	13 10	7 9	2 19	+0 16	47 6	46 7	1·0	8·0
73	5	—	16 0	27 2	11 2	50 0	30 0	15 0	35 6	6 10	+4 12	—	51 1	1·5	7·4
46	26	2·1	17 15	23 5	5 10	24 3	42 5	10 0	7 8	4 4	+1 6	47 0	49 11	1·0	6·4
38	18	2·7	20 0	26 2	6 2	46 8	5 5	21 4	8 1	4 2	+2 0	47 1	46 4	1·3	5·2
43	25	2·5	21 10	28 7	6 17	42 0	15 10	20 1	11 6	4 9	+2 8	49 1	52 2	1·2	5·8
3	9	—	17 0	19 19	2 19	34 5	26 8	9 0	10 2	4 0	−1 1	—	43 4	—	5·8
48	26	—	16 15	19 12	2 17	75 0	4 8	5 4	11 8	4 17	−2 0	—	41 11	1·2	6·7
76	12	2·6	16 17	20 13	3 16	54 5	20 1	6 3	10 9	4 11	−0 15	41 5	41 4	1·2	3·4
23	30	2·0	19 5	24 17	5 12	54 2	9 4	13 0	7 3	4 4	+1 8	45 4	47 0	1·5	6·1
25	12	3·4	18 0	28 5	10 5	50 0	76 0	20 0	11 3	7 17	+2 8	40 0	45 7	1·2	7·0
39	40	—	16 19	23 13	6 14	46 9	10 5	18 0	12 8	4 8	+2 6	—	45 6	1·1	6·3
b. 3 *years old and over.*															
27	19	—	20 0	27 5[3]	7 5	60 0	38 11	15 0	6 10	6 1	+1 4	—	—	1·0	6·9
10	32	1·5	23 0	26 9	3 9	55 0	14 2	16 2	6 3	4 12	−1 3	—	—	1·3	5·5
3	7	3·3	18 0	24 0	6 0	34 5	17 2	9 0	10 7	3 11	+2 9	45 0	42 6	—	6·6
3	9	3·1	18 10	23 12	5 2	34 5	20 0	9 0	10 6	3 14	+1 8	46 3	42 5	—	6·0
15	7	3·2	19 0	25 9	6 9	40 0	13 9	10 0	10 9	3 14	+2 15	44 9	43 3	1·2	6·4
c. *Other cattle.*															
73	2	—	17 5	23 13	6 8	50 0	30 0	15 0	35 3	6 10	−0 2	—	43 0	1·5	7·0
5	40	—	16 0	20 0	4 0	40 0	5 6	18 9	9 9	3 14	+0 6	42 8	—	1·2	4·7
76	4	2·0	14 5	20 0	5 15	53 9	17 0	6 3	10 9	4 8	+1 7	31 8	36 1	1·2	3·7

[1] Yarded in winter.

[2] Including 12 not fat, valued as stores.

[3] Including 9 unsold and not fat.

TABLE XVI

Cattle in forward condition as stores. (i) *Grass fed.*

Farm number.	*No. of cattle.*	*Increase in live-weight per head.*	*Cost and returns per head.*			*Expenses per head.*					*Profit(+) or Loss(−) per head.*	*Average cost of stores.*	*Average price fat.*	*Acres of grazing per head.*	*Average time taken to fatten.*
			Cost of stores.	*Selling price.*	*Margin.*	*Grazing.*	*Foods.*	*Labour.*	*Other costs.*	*Total cost.*					
		cwt.	£ s.	£ s.	£ s.	s. d.	s. d.	s. d.	s. d.	£ d.	£ s.	per cwt. s. d.	per cwt. s. d.	acres.	months.
a. 2–3 *years old.*															
75	113	—	24 10	29 12	5 2	35 0	—	27 4	23 10	4 6	+0 15	—	57 2	1·0	5·3
42	40	—	24 0	29 2	5 2	50 0	—	15 0	10 2	3 15	+1 7	47 1	—	—	7·0
b. 3 *years old and over.*															
82	17	—	26 0	31 16	5 16	88 0	—	12 0	9 5	5 9	+0 7	—	48 11	1·0	2·6
13	37	3·0	30 0	38 0	8 0	50 8	—	10 1	4 7	3 5	+4 15	52 2	52 5	1·0	2·2
84	17	1·0	26 0	31 2	5 2	54 0	—	2 0	5 0	3 1	+2 1	48 4	52 11	1·0	4·5
10	20	1·0	22 0	29 8	7 8	54 3	—	14 3	6 0	3 14	+3 14	44 0	53 9	1·3	3·3
c. *Other cattle.*															
53	12[1]	—	14 0	20 14	6 14	57 4	—	12 0	9 5	3 19	+2 16	—	41 10	—	3·5

[1] Including 2 in calf.

TABLE XVI

Cattle in forward condition as stores. (ii) *Caked throughout.*

Farm number.	*No. of cattle.*	*Increase in live-weight per head.*	*Cost and returns per head.*			*Expenses per head.*					*Profit(+) or Loss(−) per head.*	*Average cost of stores.*	*Average price fat.*	*Acres of grazing per head.*	*Average time taken to fatten.*
			Cost of stores.	*Selling price.*	*Margin.*	*Grazing.*	*Foods.*	*Labour.*	*Other costs.*	*Total cost.*					
		cwt.	£ s.	£ s.	£ s.	s. d.	s. d.	s. d.	s. d.	£ s.	£ s.	per cwt. s. d.	per cwt. s. d.	acres.	months.
a. 2–3 *years old.*															
54	18	—	23 0	27 17	4 17	56 0	33 0	5 0	5 0	4 9	−0 2	—	53 10	1·0	2·0
88	16	2·0	20 0	26 6	6 6	54 0	10 3	16 0	13 7	4 14	+1 12	47 1	49 10	1·5	3·6
86	20	1·4	18 0	25 5	7 5	60 0	29 0	13 0	13 2	5 15	+1 10	42 5	51 0	1·5	2·8
79	30	—	19 0	35 6	16 6	40 0	189 0	12 10	10 6	12 13	+3 13	—	—	1·0	7·0
84	4	1·7	22 10	26 0	3 10	54 0	27 6	1 6	4 6	4 7	−0 17	50 0	48 4	1·0	3·0
72	14	1·9	20 12	29 8	8 16	61 5	51 3	10 0	8 2	6 11	+2 5	46 10	54 1	1·0	2·9
b. 3 *years old and over.*															
77	50	3·0	23 0	27 2	4 2	38 0	13 6	10 0	9 10	3 12	+0 9	54 1	47 1	1·2	5·4
1	16	2·4	22 5	27 16	5 11	43 4	7 10	11 9	10 2	3 13	+1 18	51 7	50 7	1·0	2·7
10	18	1·6	27 0	31 0	4 0	53 6	24 2	13 6	6 0	4 17	−0 17	54 0	53 5	1·3	3·0
9	112	2·0	25 6	30 12	5 6	75 4	30 0	9 8	7 0	6 2	−0 16	50 7	50 11	1·4	3·4
27	18	—	28 0	39 13	11 13	60 0	72 7	15 0	8 3	7 16	+3 17	—	67 2	1·0	2·9
42	8	2·0	26 10	33 2	6 12	50 0	43 9	15 0	10 2	5 19	+0 13	48 2	50 11	—	3·5
85	20	3·0	27 0	34 10	7 10	78 0	28 10	13 0	9 0	6 9	+1 1	60 0	56 8	—	3·5
34	69	1·4	25 14	25 7	−7	34 2	62 6	23 11	10 2	6 11	−6 18[1]	51 1	46 4	0·5	4·9
4	2	1·0	22 0	28 0	6 0	62 0	38 6	3 9	6 0	5 10	+0 10	44 0	50 10	0·9	3·5
16	30	1·8	29 16	35 4	5 8	28 10	19 6	11 0	7 5	3 7	+2 1	55 8	56 8	0·9	3·8
c. *Other cattle.*															
19	65	2·0	17 8	23 8	6 0	43 0	35 6	20 0	9 6	5 8	+0 12	—	—	1·0	4·3
54	9	—	15 15	20 0	4 5	40 0	15 0	5 0	—	3 0	+1 5	—	—	1·0	3·7

[1] 3 screws and 2 died of Johnne's disease.

TABLE XVI

Cattle in forward condition as stores. (iii) *Caked in autumn.*

Farm number.	*No. of cattle.*	*Increase in live-weight per head.*	*Cost and returns per head.*			*Expenses per head.*					*Profit(+) or Loss(−) per head.*	*Average cost of stores.*	*Average price fat.*	*Acres of grazing per head.*	*Average time taken to fatten.*
			Cost of stores.	*Selling price.*	*Margin.*	*Grazing.*	*Foods.*	*Labour.*	*Other costs.*	*Total cost.*					
		cwt.	£ s.	£ s.	£ s.	s. d.	s. d.	s. d.	s. d.	£ s.	£ s.	per cwt. s. d.	per cwt. s. d.	acres.	months.
a. 2 *years old.*															
79	20	—	15 10	25 6	9 16	40 0	115 0[1]	12 10	10 6	8 18	+0 18	—	—	1·0	7·0
a. 2–3 *years old.*															
11	3	1·4	21 7	28 7	7 0	35 0	19 6	11 2	11 1	3 17	+3 3	44 2	51 2	1·0	5·0
29	16	—	16 0	20 1	4 1	36 4	15 0	4 6	7 5	3 3	+0 18	—	—	0·9	5·3
15	10	2·2	21 10	26 11	5 1	40 0	6 0	10 0	6 7	3 3	+1 18	52 1	50 7	1·2	5·1
14	6	1·0	22 0	27 15	5 15	53 4	7 8	13 4	18 6	4 13	+1 2	47 7	54 1	1·3	3·8
b. 3 *years old and over.*															
22	45	2·0	21 8	26 14	5 6	75 10	25 2	13 0	10 0	6 4	−0 18	46 10	47 7	1·3	5·1
19	33	2·0	21 0	29 3	8 3	43 0	5 9	20 0	10 2	3 19	+4 4	—	—	1·0	4·7
14	25	1·7	23 16	28 19	5 3	54 6	9 5	13 7	15 2	4 13	+0 10	47 7	48 2	1·3	4·1
6	12	2·5	20 10	26 10	6 0	54 6	9 0	5 0	3 6	3 12	+2 8	46 10	46 1	1·0	5·7

[1] Yarded in winter.

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