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Sheep - Cost of production O.D.

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A review of the financial results for 57
Identical Hill Sheep Flocks during the
years 1955-56 to 1958-59.

by

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E. F. Nash.

July, 1960. Professor of Agricultural Economics.

INTRODUCTION.

A review of the financial results of certain hill flocks during the period 1956 to 1959 is justified on the grounds that during that period the sheep enterprise in Wales, as in the other countries of the United Kingdom, experienced an upsurge in the numbers of breeding ewes kept on farms, together with a boom and slump in the market for store sheep.

The distribution of the breeding ewes among the counties of Wales is given in Table I, Appendix A. In 1959 they carried 2778.0 thousand breeding ewes in all, as compared with 2380.7 thousand in 1956 and 2464.9 thousand in 1939. Thus between 1939 and 1959 the total number of breeding ewes in Wales increased by 313.1 thousand, or 12.7 per cent. Of the total increase between these two years, 309.4 thousand were to be found in the 'Mid-Wales' counties of Merioneth, Montgomery, Cardigan, Radnor and Brecon. The proportion of the total breeding ewes in Wales located in these counties increased from 48.8 per cent in 1939 to 54.4 per cent in 1959. On the other hand, there was a decline in the proportion in the 'North Wales' group (Anglesey, Caernarvon, Denbigh and Flint) from 26.5 per cent in 1939 to 24.5 per cent in 1959 and in the 'South Wales' group (Pembroke, Carmarthen, Glamorgan and Monmouth) from 24.7 to 21.1 per cent.

Between the years 1956 and 1959, however, the total number of breeding ewes in Wales rose by 397.3 thousand, or 16.7 per cent (See Table I, Appendix A). All counties in Wales shared in this increase, but it was proportionately more pronounced in the 'Lowland' counties. In the 'South Wales' group the number of breeding ewes in 1959 was 22.8 per cent more than in 1956, whilst in the 'North Wales' group the numbers rose by 15.9 per cent between 1956 and 1959. During the same period the increase in the number of breeding ewes in the 'Mid-Wales' group was 14.8 per cent.

The increased demand for breeding ewes in 1957 brought boom conditions to the store markets, and high prices were being paid in the summer and autumn sales. This demand was maintained during 1958, but prices did not reach the level of the previous year. The slump came in 1959, with a violent downswing in prices for breeding ewes. At the time various reasons were given for this situation, but in the main it was attributed to the long dry summer. As a result of the weather, keep became short and fat lambs came off farms in increasing numbers from August onwards, which led to a fall in their price. With plentiful and relatively cheap supplies of fat lambs the butchers cut their demand for fat ewes, so that the prices for this type of stock fell as well. The lowland producer was largely compensated for the fall in fat lamb prices by deficiency payments, but because of the depression in the market for fat ewes his natural reaction was to retain many of his ewes for at least another year. This reaction in turn reduced the demand in the store markets for replacements to the breeding flock.

The difference in average prices between 1958 and 1959 for fat lambs and fat ewes during the period August to October is shown in Table II, Appendix A.

SUMMARY AND CONCLUSIONS OF REVIEW.

The experience of the 57 identical hill flocks in Wales during the period 1955-56 to 1958-59 may be briefly summarised as follows. The boom conditions of 1957 brought them relatively higher returns than usual. There is no doubt that these higher returns contained something of a windfall element, but they compensated for many years when returns were relatively low. In 1959, however, the slump in prices brought the average price of draft ewes to 55.8 per cent of the average price in 1957, and 78.4 per cent of the price in 1955-56. As a reaction to this situation many of the ewes that were due to be drafted from these flocks were retained for another year, and relatively fewer lambs were assigned to flock replacement. To counterbalance the fall in the returns from the store market the producers sold relatively more lambs fat, though their ability to make use of this alternative market was in general limited by the number of lambs sufficiently forward to be graded.

It is possible that this year, 1959-60, could prove as critical to the hill sheep flocks as did the last one. Forecasting in this matter can be

notoriously misleading, but there are certain factors which can be taken into consideration. A fair proportion of the breeding ewes in the hill flocks last winter were spending their fourth winter on the hills. It is doubtful whether they had the stamina to withstand this experience, because the fall of lambs in the hill flocks this Spring was reported as being below average. If this report is generally true, then the outlook for the hill flocks will not be very favourable. From the lambs weaned this Spring will come the replacements for the breeding flock, and if the number weaned is below average then the scope for culling the older ewes will be limited, and thus the number of sheep for sale from the flocks will be affected.

If, on the other hand, the situation is not as bad as that, there will still remain the problem of the disposal of the older ewes. If the breeding ewes retained for another year last autumn are joined by those due to be drafted this year at the customary age, then the store market could be affected again this autumn. This situation calls for the exercise of careful management in the disposal of these older ewes in order to prevent any upset in the market.

In turning to the future there are two points which may be noted. Firstly, it has been shown that in June 1959, in those counties of Wales which contain considerable areas of rough grazings, there was a relatively greater concentration of breeding ewes than in June, 1939. Secondly, it is unlikely that the hill flocks will experience again a keen demand for store stock similar to that of 1957 and 1958. How these two points are to be reconciled is the problem. The hill sheep enterprise is conducted under a wide diversity of physical and environmental conditions, as can be seen from the results for the 57 identical flocks. These show a bread range, from the smaller flocks where a relatively high proportion of the returns are obtained from the sale of fat lambs to the larger ones where the returns are derived almost entirely from the sale of store stock. In between come the flocks showing some variation in this respect. It may be that as a result of their experience in the summer of 1959, some hill-flockmasters who are able to do so will turn their attention to the market for fat lambs much more closely than they have done in the past. This will give a somewhat greater measure of security to their own income from sheep and at the same time relieve the pressure in the store sheep markets, thus, indirectly, helping the traditional store sheep raisers. The question may be posed; but no general answer can be given, since so much depends on the particular circumstances of each hill flock.

FINANCIAL RESULTS FOR 57 IDENTICAL HILL FLOCKS IN WALES FOR THE YEARS 1955-56 TO 1958-59.

The flocks surveyed were situated in the counties of Merioneth, Caernarvon, Denbigh, Montgomery and Brecon. Their distribution as between these counties was as follows:-

County.	No. of Farms.	Per cent.
Merioneth	26	46
Caernarvon	12	21
Denbigh	9	16
Brecon	8	14
Montgomery	2	3
	57	100

Just over half the flocks each year were in the size groups of 200 to under 600 breeding ewes. Over the four years, however, there was a trend towards relatively larger flocks.

The average number of breeding ewes per flock in the sample increased from 536 in 1955-56 to 573 in 1958-59. The distribution of the 57 identical hill flocks according to size is shown in Table 1.

Table 1.

Size Distribution of Hill Flocks.
57 Identical Hill Flocks.

Size Groups Breeding Ewes.	1955-56. No.	1955-56. %	1956-57. No.	1956-57. %	1957-58 No.	1957-58 %	1958-59. No.	1958-59. %
Under 200	9	16	8	14	8	14	7	12
200 & under 400	16	28	17	30	15	26	15	26
400 " " 600	13	23	13	23	15	26	14	25
600 " " 800	9	16	11	19	10	18	10	18
800 " over	10	17	8	14	9	16	11	19
Total	57	100	57	100	57	100	57	100

The average cropping and stocking of the farms in the sample for the four years are given in Tables I and II, Appendix B. It should be noted with regard to land utilisation that it is difficult to assess the effective total acreage of the farms concerned, other than that which was continuously in their sole occupation, because of the fact that many of them had grazing rights for a specified number of sheep on the open mountain. The average size of farm for the 57 identical hill flocks was 807.2 acres, of which 86.6 per cent consisted of rough grazing. Just over 1 per cent was composed of arable crops intended almost entirely for livestock consumption, and the remaining 12 per cent was under grass for hay and grazing.

The wide variation in the conditions under which the enterprise was conducted is indicated by the average land utilisation per farm for the flock size groups. The group with flocks of under 200 breeding ewes had the highest proportion of land under crops, and the lowest proportion classed as rough grazing. Most of these farms were to be found on relatively low ground, with milk production as the main enterprise, each farm having grazing rights for a specified number of sheep on the open mountain. At the other extreme were the farms with 800 breeding ewes and over, which had on the average 95 per cent of their land under rough grazing.

The financial results of the 57 identical hill flocks for the four years will be considered from the standpoint of three factors:-

1. The returns obtained from the enterprise;
2. The physical results of the enterprise;
3. The costs incurred in the conduct of the enterprise.

1. Returns.

The average price per head received for sheep by the 57 identical hill flocks during the period 1955-56 to 1958-59 is given in Table 2.

Table 2.

Average Prices per Head for Sheep Sold.
57 Identical Hill Flocks.

	1955-56.	1956-57.	1957-58.	1958-59.
	£. s. d	£. s. d	£. s. d	£. s. d
Draft Ewes	3.19. 1	5. 5. 6	5. 0. 0	3. 2. 0
Store Lambs	3. 5. 9	4. 2. 0	3.16.11	3. 4.11
Fat Lambs	4.10. 2	5. 1. 5	5. 3. 4	4.10.10
Store Wethers	3.18. 2	4.13. 2	4. 9.11	4. 4.10
Fat Wethers	4.10. 2	4.16.11	5. 2.11	4.16. 3
Rams & Ram Lambs	14. 9. 2	14.13. 5	14. 9. 4	12.19. 2

The conditions in the store market during the period under review are exemplified in the average prices per head paid for draft ewes and store lambs respectively. The fluctuation in the average price for draft ewes was greater than that for store lambs. In 1956-57 the average price per head for draft ewes rose by one-third over that for 1955-56; but there was a fall in 1957-58, and by 1958-59 the price was 22 per cent below that for 1955-56. In respect of store lambs the average price per head rose in 1956-57 by one-quarter over that for 1955-56 and then declined to £3. 4.11 in 1958-59 as compared with £3. 5. 9 in 1955-56. The differential in price as between fat lambs and store lambs averaged £1. 4. 0 over the four years, and the significance of this fact was not lost on the producers in 1958-59.

The average number of sheep sold per 100 breeding ewes in the 57 identical hill flocks is shown in Table 3. Two features may be noted with regard to the figures given.

In the first place, wethers accounted for 14 per cent of the total sheep sold per 100 breeding ewes in 1955-56. In the subsequent years there was a marked fall in the proportion of this class of sheep to the total number sold. Owing to the conditions obtaining in the store markets at that time there was less incentive to retain sheep to an older age. Lambs, in either fat or store condition, accounted for only 47 per cent of total sales in 1955-56, whereas in the following three years, the proportions were 52, 50 and 57 per cent respectively.

Table 3.

Number of Sheep Sold per 100 Breeding Ewes.
57 Identical Hill Flocks.

	1955-56.		1956-57.		1957-58.		1958-59.	
	No.	%.	No.	%.	No.	%.	No.	%.
Draft Ewes	25	38	27	38	27	39	23	32
Store Lambs	25	38	31	44	29	41	29	41
Fat Lambs	6	9	6	8	6	9	11	16
Wethers	9	14	6	9	7	10	7	10
Rams & Ram Lambs	1	1	1	1	1	1	1	1
Total	66	100	71	100	70	100	71	100

Draft ewes and store lambs accounted for about three-quarters of the total number of sheep sold per 100 breeding ewes in 1955-56. With the increased demand for this type of stock, co-inciding with improved lambing results, in 1956-57 and 1957-58 the proportion sold rose to four-fifths of the total. Store lambs formed a relatively higher percentage of the total in 1956-57 and 1957-58 than did draft ewes. In 1958-59, however, the number of draft ewes sold per 100 breeding ewes was relatively smaller than in any of the previous three years; the proportion of lambs sold in a store condition remained the same; and the figure sold fat had increased to 16 per cent of the total, as compared with 8 to 9 per cent in the previous years.

These changes in average prices per head, and in the proportions of the various categories of sheep sold, are reflected in the changes in the percentage distribution of returns from the sale of sheep and wool, as given in Table 4.

In 1955-56 draft ewes and store lambs accounted for 52.5 per cent of the returns. In the two following years there was an increase in this proportion, to 62.3 per cent and 58.7 per cent respectively; but in 1958-59 it fell to 47.5 per cent. Since fewer draft ewes were being sold and relatively lower prices were being received for them, the proportion of the total returns which was derived from this source fell to 20.7 per cent. On the other hand, the proportion derived from the sale of store lambs remained about the same as in the previous year, while the figure for fat lambs increased to almost double that for the base year 1955-56.

Table 4.

Percentage Distribution of Returns from Sale of Sheep and Wool.

57 Identical Hill Flocks.

	1955-56.	1956-57.	1957-58.	1958-59
	%.	%.	%.	%.
Draft Ewes	28.5	32.9	32.1	20.7
Store Lambs	24.0	29.4	26.6	26.8
Fat Lambs	8.1	7.1	7.2	15.4
Wethers	10.5	6.1	8.0	8.7
Rams & Ram Lambs	3.8	2.5	3.9	3.1
Wool	25.1	22.0	22.2	25.3
Total	100.0	100.0	100.0	100.0

The average number of sheep sold per 100 breeding ewes, and the percentage distribution of the returns from the sale of sheep and wool for the 57 identical hill flocks grouped according to size are given in Tables III and IV, Appendix B. It will be seen that there is a tendency for the average number of sheep sold per 100 breeding ewes to decrease with increasing size of flock. The relatively favourable circumstances surrounding the conduct of the enterprise in the flocks with under 200 breeding ewes are revealed by the relatively high proportion of lambs which were sold fat in each year. At the other extreme, in flocks with 800 breeding ewes and over, almost all the sheep sold each year were store stock. The number of draft ewes per 100 breeding ewes sold from these flocks in 1958-59 was relatively lower than in any other year, and even under the circumstances prevailing for flocks in this group the proportion of lambs sold fat in 1958-59 was 9 per cent as compared with 5 per cent in 1955-56.

2. Physical Results.

The physical results of the 57 identical hill flocks need to be considered because of the close relationship which exists between the number of lambs weaned and the number of lambs sold in any one year.

The number of lambs weaned depends on the productivity of the breeding ewes and the losses in the lambs suffered at birth or afterwards. An estimate of the productivity of the breeding ewes per 100 ewes mated in the 57 identical hill flocks is given in Table 5.

Table 5.

Productivity of Breeding Ewes Per 100 Ewes Mated.

57 Identical Hill Flocks.

	1955-56	1956-57	1957-58	1958-59
Ewes: Lambing	87.8	89.6	90.3	89.5
Barren	8.4	7.5	7.3	6.8
Died	3.8	2.9	2.4	3.7
Total	100.0	100.0	100.0	100.0

The table reveals on the whole, a favourable picture. There was a fall in the percentage of barren ewes over the four years. Deaths in ewes were just under 4 per cent in the first and last year of the period, as compared with under 3 per cent in the mid-years. In addition to a relative increase in the number of ewes lambing there were relatively fewer losses in lambs during the last three years, 1956-57 to 1958-59.

Table 6.

Lambing Results per 100 Ewes Mated.
57 Identical Hill Flocks.

	1955-56	1956-57	1957-58	1958-59
Lambs: Born Alive	88	90	91	91
Died	11	9	8	9
Weaned	77	81	83	82

In 1955-56 losses in lambs were 12.5 per cent of the total. This proportion fell to 10 per cent in 1956-57, with a further decline to 8.8 per cent and 9.9 per cent in the two following years respectively. Thus the increased demand for breeding ewes and store lambs in 1956-57 coincided with relatively more favourable lambing results, as compared with 1955-56. There is very little variation in the lambing results for the last three years of the period under review.

In the hill flocks it is the usual custom to retain all the ewe lambs for flock replacement purposes. The disposal of the lambs weaned per 100 ewes mated is given in Table 7.

Table 7.

Disposal of Lambs Weaned per 100 Ewes Mated.
57 Identical Hill Flocks.

	1955-56.		1956-57		1957-58		1958-59	
	No.	%.	No.	%.	No.	%.	No.	%.
Retained: Ewe Lambs	37	48	38	47	39	47	37	45
Ram Lambs	2	3	1	1	1	1	1	1
Wether Lambs	7	9	5	6	7	8	5	6
Lambs Sold Fat	4	5	3	4	4	5	8	10
Lambs Sold as Stores or on hand for sale as Stores	27	35	34	42	32	39	31	38
Total	77	100	81	100	83	100	82	100

There is little variation in the actual number of lambs, per 100 ewes mated, retained for replacement purposes in each of the four years. In 1958-59, however, the proportion of the total lambs thus retained was relatively lower than in any of the other years. In 1955-56 40 per cent of the weaned lambs were sold, mainly in a store condition. In the following two years, with relatively better results, these sales represented 46 per cent and 44 per cent respectively. In 1958-59, however, 48 per cent of the lambs were sold, and the number sold fat per 100 ewes mated was twice as large as in the previous years. The retention of fewer lambs for flock replacement meant that breeding ewes in these flocks were being retained for another year, instead of being drafted in the customary manner.

The physical results by size of flock for the 57 identical hill flocks are given in Tables V, VI and VII, Appendix B. The estimate of the productivity of the breeding ewes per 100 ewes mated, given in Table V, Appendix B, shows a tendency for the proportion of barren ewes to increase with increasing size of flock. Moreover, the lambing results per 100 ewes mated, given in Table VI, Appendix B, reveal a tendency towards a relatively heavier incidence of deaths amongst lambs in the larger flocks. Similar trends were noted in an earlier report in this series.* The explanation lies in the

*Economic Studies in Sheep Farming in Wales: Number 1. General Report on Costs and Returns for 65 Hill Sheep Flocks for 1954-55 and 1955-56.

greater care and supervision of the breeding ewes which became possible as flocks decreased in size, and also perhaps in the more favourable conditions under which the relatively smaller flocks subsisted.

In the disposal of weaned lambs per 100 ewes mated (Table VII, Appendix B) there is some variation as between the different size groups. Some flocks, such as those with under 200 breeding ewes, and those with between 200 and 400 breeding ewes, retained a relatively lower proportion of lambs for flock replacement in 1956-57; and this coincided with the sale of relatively more draft ewes and lambs per 100 breeding ewes from these flocks during that year (Table III, Appendix B). Both groups retained all their ewe lambs for replacement purposes in 1957-58, but differed in their practice in 1958-59. The flocks with under 200 breeding ewes retained 50 per cent of their weaned lambs in that year and this fact, together with their relatively fewer sales of draft ewes, meant that they had relatively greater flock numbers at the end of the year. In the flocks with between 200 and 400 breeding ewes fewer lambs were retained for replacement purposes in 1958-59, fewer draft ewes were sold per 100 breeding ewes, and an increased percentage of lambs were sold fat.

The next two size groups (400 to 600 and 600 to 800 breeding ewes) retained about the same proportion of lambs for replacement purposes in each of the first three years, which suggests that all the ewe lambs in these flocks were thus retained. These size groups, however, differed in their practice in 1958-59. In that year the flocks with between 400 and 600 breeding ewes retained relatively fewer ewe lambs and no wether lambs, and sold an increased proportion of lambs fat. The flocks with 600 to 800 breeding ewes retained 50 per cent of their lambs for replacement purposes in 1958-59, and sold relatively fewer draft ewes which meant a relative increase in flock numbers at the end of the year. In these flocks, however, fewer wether lambs were retained in 1958-59 and relatively more lambs were sold fat. Flocks with 800 breeding ewes and over showed a decline in the proportion of the ewe lambs retained in each year, the relatively lowest proportion being found in 1958-59. In that year 47 per cent of the lambs were sold and a slight increase occurred in the number sold fat.

3. Costs.

The total costs per 100 breeding ewes in the 57 identical hill flocks rose by 10.7 per cent during the four years, from £195 in 1955-56 to £216 in 1958-59. The detailed cost structure is given in Table 8.

The cost of feeding the flocks on the farms over the period varied, on the average, between 21 and 24 per cent of the total costs. The practice of hand-feeding is related to weather conditions during the winter, and thus shows a variation from year to year. Forage crops, chiefly rape, were used for feeding wether lambs in preparation for the market. Grazing costs consist of a share of the rental of the farm and sheep-walk together with the costs of fertilizers applied to grassland, and any other operations performed on grassland.

Table 8.

Total Costs per 100 Breeding Ewes.
57 Identical Hill Flocks.

	1955-56		1956-57		1957-58		1958-59	
	£.	%.	£.	%.	£.	%.	£.	%.
Hand Fed Foods	4	2	2	1	2	1	3	1
Grazing	41	21	40	19	41	19	40	19
Forage Crops	3	1	5	2	2	1	4	2
Agistment	52	27	63	30	65	30	65	30
Labour	62	32	63	30	66	31	67	31
Transport	5	3	5	3	6	3	6	3
Miscellaneous	28	14	30	15	32	15	31	14
Total	195	100	208	100	214	100	216	100

Transport and miscellaneous costs accounted for 17-18 per cent of the total costs. Transport costs relate to payments in respect of marketing sheep,

and also to the movement of sheep to and from other farms for wintering. Miscellaneous costs consist of payments for such items as serums and vaccines, dips and marking fluid and commission charges. A share of the general farm expenses has also been included under this head.

The two items which accounted for the increase in the total costs per 100 breeding ewes during the period were the cost of agistment and the cost of labour.

The cost of agistment in any year will depend on the number of sheep sent away over the winter and the average cost per head. If the number wintered away is expressed as a proportion of the number in the opening valuation in each year for the 57 identical hill flocks, it will be found that 26 per cent were wintered away in 1955-56, 30 per cent in 1956-57, and 29 per cent during each of the last two years of the period. In the meantime the average cost per head for wintering in these flocks had risen from £1.6.8. in 1955-56 to £1.9.5. in 1958-59.

The increase in the cost of labour can be attributed to increases in wage rates during the period under review. With the rise in the average number of breeding ewes per flock in the 57 identical hill flocks there has been a fall in the average manual labour requirements per 100 breeding ewes. This inverse relationship between average manual labour requirements and the number of breeding ewes is shown in Table 9.

Table 9.

Average Manual Labour Requirements per 100 Breeding Ewes.
57 Identical Hill Flocks.

Year.	Shepherding.	Other operations.	Total.	Average No. of Breeding Ewes per Flock.
1955-56	252	128	380	536
1956-57	254	123	377	537
1957-58	247	128	375	551
1958-59	237	122	359	573

4. Margins.

The margin is defined as the difference between production and the total costs per 100 breeding ewes. Production is defined as the difference between the Closing Valuation of sheep plus the receipts from the sale of sheep and wool and the Opening Valuation plus purchases of sheep.

Table 10.

Production, Costs & Margins per 100 Breeding Ewes.
57 Identical Hill Flocks.

	1955-56	1956-57	1957-58	1958-59
Production:	£.	£.	£.	£.
Opening Valuation of Sheep	610	624	618	610
Purchases of Sheep	17	12	10	9
Total (A)	627	636	628	619
Closing Valuation of Sheep	623	632	635	628
Sales of Sheep and Wool	342	433	413	342
Hill Sheep Special Payment	24	-	-	-
Total (B)	989	1065	1048	970
Production (B minus A)	362	429	420	351
Total Costs	195	208	214	216
Margin	167	221	206	135

Production in 1955-56 includes a special hill sheep payment made in January of that year in respect of the adverse conditions experienced during the previous one. The favourable conditions in the store markets in 1956-57 are reflected in the relatively high margin obtained in that year. Since 1956-57, however, the average margin per 100 breeding ewes has declined; and in 1958-59 it was lower than in 1955-56, after allowing for the inclusion of the special payment made in that year.

The distribution of the 57 identical hill flocks according to the margins obtained, excluding the special hill sheep payment in 1955-56, is given in Table 11.

Table 11.

Distribution of Flocks According to Margins per 100 Breeding Ewes.

57 Identical Hill Flocks.

Margin per 100 Breeding Ewes	1955-56		1956-57		1957-58		1958-59	
£'s.	No.	%	No.	%	No.	%	No.	%
Under 50	4	19.3	-	1.8	1	3.5	4	24.6
50 & under 100	7		1		1		10	
100 " " 150	19	61.4	6	31.6	10	49.1	18	52.6
150 " " 200	16		12		18		12	
200 " " 250	7	19.3	15	66.6	10	47.4	8	22.8
250 " " 300	2		12		8		5	
300 " over	2		11		9		-	
Total	57	100.0	57	100.0	57	100.0	57	100.0

In 1955-56 just over 60 per cent of the flocks had margins per 100 breeding ewes of between £100 and £200, the proportion with margins of less than £100 and more than £200 being similar to one another. In the following year, 1956-57, about two-thirds of the flocks had margins per 100 breeding ewes which exceeded £200, and just under one-third had margins of between £100 and £200. In 1957-58 just under one-half of the flocks had margins of between £100 and £200, and a further 47.4 per cent had margins greater than £200. In 1958-59 just over one-half the flocks had margins of between £100 and £200, but nearly one-quarter had margins of less than £100.

The production, costs and margins, per 100 breeding ewes, by size of flock for the 57 identical hill flocks are given in Tables IX, X, XI, XII and XIII, Appendix B.

Appendix A.

Table 1.

Distribution of Breeding Ewes in Counties in Wales.

(June 4th Returns).

'000.

Counties	1939. No.	1939. %	1956. No.	1956. %	1957. No.	1957. %	1958. No.	1958. %	1959. No.	1959. %	Per cent Increase 1959 over 1956.
'North Wales Group':											
Anglesey	92.9	3.8	80.5	3.4	94.9	3.8	96.6	3.6	88.0	3.2	9.3
Caernarvon	198.2	8.0	217.1	9.1	224.9	8.8	232.2	8.7	238.1	8.6	9.7
Denbigh	283.0	11.5	244.8	10.3	262.6	10.3	277.7	10.3	294.8	10.6	20.4
Flint	80.0	3.2	43.2	1.8	46.3	1.8	51.5	1.9	58.0	2.1	34.3
Total	654.1	26.5	585.6	24.6	628.7	24.7	658.0	24.5	678.9	24.5	15.9
'Mid-Wales Group':											
Merioneth	249.4	10.1	293.1	12.3	312.5	12.3	315.7	11.8	322.0	11.6	9.9
Montgomery	315.7	12.8	333.4	14.0	351.9	13.8	371.8	13.8	372.6	13.4	11.8
Cardigan	179.3	7.3	173.6	7.3	188.9	7.4	196.0	7.3	206.8	7.4	19.1
Radnor	174.1	7.1	206.7	8.7	224.4	8.8	242.3	9.0	250.6	9.0	21.2
Brecon	284.3	11.5	310.2	13.0	327.5	12.9	346.0	12.9	360.2	13.0	16.1
Total	1202.8	48.8	1317.0	55.3	1405.2	55.2	1471.8	54.8	1512.2	54.4	14.8
'South Wales Group':											
Pembroke	81.0	3.3	59.9	2.5	65.9	2.6	72.8	2.7	77.7	2.8	29.7
Carmarthen	183.7	7.5	125.2	5.3	139.8	5.5	153.2	5.7	162.8	5.9	30.0
Glamorgan	197.0	8.0	153.9	6.5	159.7	6.3	170.0	6.4	176.3	6.3	14.5
Monmouth	146.3	5.9	139.1	5.8	145.2	5.7	158.4	5.9	170.1	6.1	22.3
Total	608.0	24.7	478.1	20.1	510.6	20.1	554.4	20.7	586.9	21.1	22.8
Total Wales and Monmouthshire	2464.9	100.0	2380.7	100.0	2544.5	100.0	2684.2	100.0	2778.0	100.0	16.7

Appendix A.

Table II.

Average Weekly Price per lb. Estimated Dressed Carcass Weight Fat Lambs and Fat Ewes.

August - October, 1958 and 1959.

1959.				1958.			
Date	Lambs up to 48 lb.	Fat Ewes. Light	Fat Ewes. Heavy	Date	Lambs up to 48 lb.	Fat Ewes. Light	Fat Ewes. Heavy
Week Ending	s. d	s. d	s. d	Week Ending	s. d	s. d	s. d
Aug. 5	2. 2½	1. 2¼	0.10¾	Aug. 6	3. 0½	1. 6¾	1. 2
12	2. 0¾	1. 1	0.11¼	13	2.11	1. 5¾	1. 2¼
19	1.11	1. 0¾	0.10¼	20	2.10	1. 5¾	1. 1½
26	1.10¾	1. 1	0. 9¾	27	2. 9¾	1. 6	1. 1¾
Sept. 2	1. 9¾	1. 1¼	0. 9¾	Sept. 3	2.10½	1. 4½	1. 1½
9	1. 8	0.11½	0. 9½	10	2. 9¾	1. 5	1. 1¾
16	1. 6¼	0. 9¾	0. 8½	17	2. 9½	1. 4½	1. 1½
23	1. 6½	0. 9¾	0. 8¾	24	2. 9½	1. 4¼	1. 0½
30	1. 6¼	0. 9¾	0. 8	Oct. 1	2. 8¾	1. 3½	1. 1
Oct. 7	1. 5½	0. 9½	0. 8	8	2. 8½	1. 3	1. 0¾
14	1. 6½	0.11	0. 8¼	15	2. 7¼	1. 3	1. 0½
21	1. 8½	0.11¼	0. 9¾	22	2. 7¼	1. 2½	1. 0¾
28	1.10½	1. 1	0. 9¾	29	2. 6¼	1. 4½	1. 0½

Source: Ministry of Agriculture, Fisheries and Food - 59 Representative markets in England and Wales.

Appendix B.

Table 1.

LAND UTILISATION.

(Average of 4 years 1955-56 to 1958-59).

57 Identical Hill Flocks.

	Under 200 Breeding Ewes		300 - 400 Breeding Ewes		400 - 600 Breeding Ewes		600 - 800 Breeding Ewes		800 & Over Breeding Ewes		All farms	
	Per Farm	Per 100 Acres	Per Farm	Per 100 Acres	Per Farm	Per 100 Acres	Per Farm	Per 100 Acres	Per Farm	Per 100 Acres	Per Farm	Per 100 Acres
Oats and Mixed Corn	4.8	3.47	6.7	1.47	6.5	1.16	9.8	1.13	1.8	0.08	6.1	0.75
Potatoes	0.4	0.30	0.4	0.09	0.3	0.05	0.4	0.05	0.2	0.01	0.3	0.04
Roots for Feeding	1.0	0.70	0.7	0.16	2.1	0.36	0.6	0.06	0.1	0.01	0.9	0.12
Green Crop	1.1	0.79	1.5	0.34	1.9	0.35	1.5	0.18	0.4	0.02	1.4	0.17
Hay	20.6	14.97	28.2	6.24	26.8	4.79	38.4	4.42	18.4	0.82	26.9	3.34
Grazing	50.8	36.82	47.6	10.53	74.1	13.24	90.0	10.36	85.6	3.79	68.2	8.45
Direct Reseeding	0.6	0.48	2.2	0.49	3.2	0.57	3.3	0.38	1.2	0.05	2.3	0.28
Rough Grazing	58.2	42.24	363.7	80.54	444.3	79.40	715.5	82.38	2146.1	95.20	699.1	86.61
Total	137.5	99.77	451.0	99.86	559.2	99.92	859.5	98.96	2253.8	99.98	805.2	99.76
Buildings, Roads & Woodlands	0.3	0.23	0.6	0.14	0.4	0.08	9.0	1.04	0.4	0.02	2.0	0.24
Total Farm Area	137.8	100.00	451.6	100.00	559.6	100.00	868.5	100.00	2254.2	100.00	807.2	100.00

Table II.

Numbers of Livestock Carried.

(Average of 4 years 1955/56 - 1958/59).

57 Identical Hill Flocks.

No. of Breeding Ewes	Under 200		200 - 400		400 - 600		600 - 800		800 & Over		All Farms	
	Per Farm	Per 100 Acres	Per Farm	Per 100 Acres	Per Farm	Per 100 Acres	Per Farm	Per 100 Acres	Per Farm	Per 100 Acres	Per Farm	Per 100 Acres
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Breeding Ewes	123	90	324	72	504	90	686	79	1257	56	559	69
Shearling Ewes	52	37	126	28	194	34	259	30	397	17	200	25
Wethers	1	1	22	5	46	8	144	17	194	9	75	9
Wether Lambs	18	13	27	6	43	8	69	8	118	5	52	7
Rams and Ram Lambs	7	5	13	2	21	4	30	3	50	2	23	3
Total Sheep	201	146	512	113	808	144	1188	137	2016	89	909	113
Cows in Milk and In Calf	11	8	13	3	18	3	13	2	16	1	14	2
Other Cattle 2 + years	3	2	4	1	6	1	14	2	7	-	7	1
Cattle 1 - 2 years	5	4	8	2	9	2	12	1	7	-	9	1
Calves 0 - 12 months	7	5	12	2	14	2	11	1	11	1	11	1
Total Cattle	26	19	37	8	47	8	50	6	41	2	41	5
Pigs	2	1	1	-	1	-	1	-	-	-	1	-
Poultry	165	120	52	12	36	6	45	5	28	1	58	7
Horses	1	1	1	-	2	-	3	-	9	-	3	-

Table III.

Number of Sheep Sold per 100 Breeding Ewes
by Size of Flock.

57 Identical Hill Flocks.

	1955-56		1956-57		1957-58		1958-59	
Under 200 Breeding Ewes:	No.	%.	No.	%.	No.	%.	No.	%.
Draft Ewes	23	31	32	33	28	36	25	31
Store Lambs	21	28	23	24	21	27	19	24
Fat Lambs	24	33	38	39	23	30	31	39
Wethers	3	4	1	1	1	1	1	1
Rams and Ram Lambs	3	4	3	3	5	6	4	5
Total	74	100	97	100	78	100	80	100
200 and Under 400 Breeding Ewes:								
Draft Ewes	31	42	32	39	27	36	28	34
Store Lambs	30	41	36	45	32	42	30	36
Fat Lambs	6	8	9	11	8	11	19	23
Wethers	6	8	3	4	6	8	5	6
Rams and Ram Lambs	1	1	1	1	2	3	1	1
Total	74	100	81	100	75	100	83	100
400 and Under 600 Breeding Ewes:								
Draft Ewes	28	38	30	40	31	41	27	33
Store Lambs	23	32	30	40	26	35	28	34
Fat Lambs	13	18	10	13	12	16	21	26
Wethers	8	11	4	6	5	7	5	6
Rams and Ram Lambs	1	1	1	1	1	1	1	1
Total	73	100	75	100	75	100	82	100
600 and Under 800 Breeding Ewes:								
Draft Ewes	26	38	28	41	31	42	28	39
Store Lambs	27	40	29	42	31	41	26	36
Fat Lambs	2	3	3	4	1	1	7	10
Wethers	12	18	8	12	11	15	10	14
Rams and Ram Lambs	1	1	1	1	1	1	1	1
Total	68	100	69	100	75	100	72	100
800 and Over Breeding Ewes:								
Draft Ewes	19	34	22	35	21	34	16	27
Store Lambs	24	43	32	51	29	48	31	52
Fat Lambs	3	5	2	3	2	3	5	9
Wethers	9	16	7	11	8	13	7	12
Rams and Ram Lambs	1	2	-	-	1	2	-	-
Total	56	100	63	100	61	100	59	100

Table IV.

Percentage Distribution of Returns from Sale of Sheep and Wool by Size of Flock.

57 Identical Hill Flocks.

	1955-56	1956-57	1957-58	1958-59
	%.	%.	%.	%.
Under 200:				
Ewes	22.9	28.9	26.7	21.0
Store Lambs	17.6	16.5	15.3	13.5
Fat Lambs	26.0	32.3	21.2	32.0
Store Wethers	0.6	0.2	0.6	0.6
Fat Wethers	2.5	0.3	-	-
Rams and Ram Lambs	10.2	5.5	18.1	13.1
Wool	20.2	16.3	18.1	19.8
Total	100.0	100.0	100.0	100.0
200 - 400:				
Ewes	31.8	35.7	30.9	22.8
Store Lambs	25.7	30.0	27.4	24.0
Fat Lambs	7.9	9.7	9.7	23.3
Store Wethers	3.1	0.1	4.2	1.3
Fat Wethers	3.1	3.2	2.1	3.8
Rams and Ram Lambs	5.4	2.0	4.6	2.4
Wool	23.0	19.3	21.1	22.4
Total	100.0	100.0	100.0	100.0
400 - 600:				
Ewes	30.5	33.3	34.4	20.9
Store Lambs	20.1	25.9	21.5	22.5
Fat Lambs	15.2	10.4	14.4	24.0
Store Wethers	6.0	2.9	3.6	3.4
Fat Wethers	1.7	1.3	1.1	1.4
Rams and Ram Lambs	2.8	4.0	3.8	4.0
Wool	23.7	22.2	21.2	23.8
Total	100.0	100.0	100.0	100.0
600 - 800:				
Ewes	29.4	34.3	33.6	25.0
Store Lambs	26.7	29.6	28.5	25.3
Fat Lambs	2.0	3.3	0.9	9.9
Store Wethers	9.7	7.1	10.2	11.6
Fat Wethers	4.9	1.7	0.8	0.9
Rams and Ram Lambs	3.2	2.6	3.9	2.5
Wool	24.1	21.4	22.1	24.8
Total	100.0	100.0	100.0	100.0
800 and Over:				
Ewes	25.5	30.1	30.3	17.0
Store Lambs	25.2	33.8	31.0	33.3
Fat Lambs	4.2	2.1	2.4	7.5
Store Wethers	6.6	5.8	9.8	6.4
Fat Wethers	6.8	2.3	0.7	5.1
Rams and Ram Lambs	3.2	1.0	1.6	2.0
Wool	28.5	24.9	24.2	28.7
Total	100.0	100.0	100.0	100.0

Table V.

Productivity of Breeding Ewes Per 100 Ewes Mated by Size of Flock.

57 Identical Hill Flocks.

	Breeding Ewes.				
	Under 200	200 - 400	400 - 600	600 - 800	800 and Over
1955-56:					
Ewes - Lambing	90.9	91.4	88.5	87.6	85.7
Barren	4.4	5.6	7.2	8.8	10.3
Died	4.7	3.0	4.3	3.6	4.0
Total	100.0	100.0	100.0	100.0	100.0
1956-57:					
Ewes - Lambing	93.1	94.9	91.8	89.6	85.0
Barren	3.8	4.1	4.9	7.5	11.4
Died	3.1	1.0	3.3	2.9	3.6
Total	100.0	100.0	100.0	100.0	100.0
1957-58:					
Ewes - Lambing	95.1	93.0	93.5	91.8	85.7
Barren	3.5	4.9	4.4	6.3	11.2
Died	1.4	2.1	2.1	1.9	3.1
Total	100.0	100.0	100.0	100.0	100.0
1958-59:					
Ewes - Lambing	92.7	92.3	92.4	92.2	85.5
Barren	4.0	5.1	4.1	5.7	9.6
Died	3.3	2.6	3.5	2.1	4.9
Total	100.0	100.0	100.0	100.0	100.0

Table VI.

Lambing Results Per 100 Ewes Mated
by Size of Flock.

57 Identical Hill Flocks.

	Breeding Ewes.					
	Under 200	200 - 400	400 - 600	600 - 800	800 and Over	All Flocks.
1955-56:						
Lambs - Born Alive	93	91	89	88	86	88
Died	8	8	10	10	15	11
Weaned	85	83	79	78	71	77
1956-57:						
Lambs - Born Alive	99	96	92	90	86	90
Died	5	8	9	12	10	9
Weaned	94	88	83	78	76	81
1957-58:						
Lambs - Born Alive	100	95	95	92	86	91
Died	6	8	8	9	9	8
Weaned	94	87	87	83	77	83
1958-59:						
Lambs - Born Alive	99	95	94	92	86	91
Died	5	7	7	8	12	9
Weaned	94	88	87	84	74	82

Table VII.

Disposal of Weaned Lambs per 100 Ewes Mated.

By Size of Flock.

57 Identical Hill Flocks.

	1955-56.		1956-57.		1957-58.		1958-59.	
	No.	%	No.	%	No.	%	No.	%
Under 200 Breeding Ewes:								
Retained: Ewe Lambs	40	47	39	42	45	48	47	50
Ram Lambs	2	2	2	2	3	3	3	3
Wether Lambs	6	7	4	4	-	-	-	-
Sold as Fat Lambs	9	11	18	19	15	16	21	22
Sold as Store Lambs or on Hand for Sale	28	33	31	33	31	33	23	25
Total Weaned Lambs	85	100	94	100	94	100	94	100
200 - 400 Breeding Ewes:								
Retained: Ewe Lambs	40	48	39	44	41	47	39	44
Ram Lambs	2	2	1	1	1	1	1	1
Wether Lambs	6	7	4	5	7	8	1	1
Sold as Fat Lambs	3	4	7	8	3	4	15	17
Sold as Store Lambs or on Hand for Sale	32	39	37	42	35	40	32	37
Total Weaned Lambs	83	100	88	100	87	100	88	100
400 - 600 Breeding Ewes:								
Retained: Ewe Lambs	38	48	40	48	41	47	40	46
Ram Lambs	2	2	2	2	1	1	2	2
Wether Lambs	6	8	3	4	5	6	-	-
Sold as Fat Lambs	8	10	3	4	9	10	13	15
Sold as Store Lambs or on Hand for Sale	25	32	35	42	31	36	32	37
Total Weaned Lambs	79	100	83	100	87	100	87	100
600 - 800 Breeding Ewes:								
Retained: Ewe Lambs	37	47	38	49	41	49	42	50
Ram Lambs	2	3	1	1	1	1	1	1
Wether Lambs	10	13	7	9	8	10	7	8
Sold as Fat Lambs	1	1	2	3	1	1	5	6
Sold as Store Lambs or on Hand for Sale	28	36	30	38	32	39	29	35
Total Weaned Lambs	78	100	78	100	83	100	84	100
800 and Over Breeding Ewes:								
Retained: Ewe Lambs	35	49	34	45	34	44	31	42
Ram Lambs	1	1	1	1	1	1	1	1
Wether Lambs	7	10	6	8	9	12	7	10
Sold as Fat Lambs	2	3	1	1	1	1	3	4
Sold as Store Lambs or on Hand for Sale	26	37	34	45	32	42	32	43
Total Weaned Lambs	71	100	76	100	77	100	74	100

Table VIII.

Production, Costs and Margins Per 100 Breeding Ewes.

57 Identical Hill Flocks.

	1955-56	1956-57	1957-58	1958-59
Production:	£.	£.	£.	£.
Opening Valuation of Sheep	610	624	618	610
Purchases of Sheep	17	12	10	9
Total (A)	627	636	628	619
Closing Valuation of Sheep	623	632	635	628
Sales of Sheep	256	338	321	255
Value of Wool	86	95	92	87
Hill Sheep Special Payment	24	-	-	-
Total (B)	989	1065	1048	970
Production (B-A)	362	429	420	351
Costs:				
Hand Fed Food	4	2	2	3
Grazing	41	40	41	40
Forage Crops	3	5	2	4
Agistment	52	63	65	65
Labour	62	63	66	67
Transport	5	5	6	6
Miscellaneous	28	30	32	31
Total	195	208	214	216
Margin (Production - Costs)	167	221	206	135

Table IX.

Production, Costs and Margins Per 100 Breeding Ewes
by Size of Flock.
57 Identical Hill Flocks.
Under 200 Breeding Ewes.

	1955-56	1956-57	1957-58	1958-59
Production:	£.	£.	£.	£.
Opening Valuation of Sheep	622	640	633	662
Purchases of Sheep	31	38	36	15
Total (A)	653	678	669	677
Closing Valuation of Sheep	661	637	688	663
Sales of Sheep	350	503	463	368
Value of Wool	89	98	102	91
Hill Sheep Special Payment	23	-	-	-
Total (B)	1123	1238	1253	1122
Production (B - A)	470	560	584	445
Costs:				
Hand Fed Foods	7	3	4	7
Grazing	62	62	71	61
Forage Crops	3	9	6	4
Agistment	47	50	55	53
Labour	73	76	80	76
Transport	3	3	4	5
Miscellaneous	42	39	46	41
Total	237	242	266	247
Margin (Production minus Costs)	233	318	318	198

Table X.

Production, Costs and Margins Per 100 Breeding Ewes by Size of Flock.

57 Identical Hill Flocks.

200 and Under 400 Breeding Ewes.

	1955-56	1956-57	1957-58	1958-59
Production:	£.	£.	£.	£.
Opening Valuation of Sheep	598	594	578	555
Purchases of Sheep	24	16	12	12
Total (A)	622	610	590	567
Closing Valuation of Sheep	630	607	595	557
Sales of Sheep	286	376	325	279
Value of Wool	86	90	87	81
Hill Sheep Special Payment	24	-	-	-
Total (B)	1026	1073	1007	917
Production (B - A)	404	463	417	350
Costs:				
Hand Fed Foods	2	-	1	2
Grazing	63	57	63	56
Forage Crops	5	7	1	2
Agistment	44	43	48	46
Labour	74	76	80	81
Transport	5	3	5	3
Miscellaneous	32	37	39	36
Total	225	223	237	226
Margin (Production minus Costs)	179	240	180	124

Table XI.

Production, Costs and Margins Per 100 Breeding Ewes by Size of Flock.

57 Identical Hill Flocks.

400 and Under 600 Breeding Ewes.

	1955-56	1956-57	1957-58	1958-59
Production:	£.	£.	£.	£.
Opening Valuation of Sheep	628	637	643	666
Purchases of Sheep	13	25	11	14
Total (A)	641	662	654	680
Closing Valuation of Sheep	605	658	660	673
Sales of Sheep	293	352	362	304
Value of Wool	91	101	98	95
Hill Sheep Special Payment	24	-	-	-
Total (B)	1013	1111	1120	1072
Production (B - A)	372	449	466	392
Costs:				
Hand Fed Foods	2	-	1	4
Grazing	52	49	48	57
Forage Crops	5	10	2	11
Agistment	49	61	57	50
Labour	58	62	65	64
Transport	4	4	4	5
Miscellaneous	27	31	31	36
Total	197	217	208	227
Margin (Production minus Costs)	175	232	258	165

Table XII.

Production, Costs and Margins per 100 Breeding Ewes by Size of Flock.

57 Identical Hill Flocks.

600 and Under 800 Breeding Ewes.

	1955-56	1956-57	1957-58	1958-59
Production:	£.	£.	£.	£.
Opening Valuation of Sheep	648	647	658	660
Purchases of Sheep	9	7	12	6
Total (A)	657	654	670	666
Closing Valuation of Sheep	652	644	665	675
Sales of Sheep	257	350	336	271
Value of Wool	82	96	95	89
Hill Sheep Special Payment	24	-	-	-
Total (B)	1015	1090	1096	1035
Production (B - A)	358	436	426	369
Costs:				
Hand Fed Foods	2	1	2	1
Grazing	36	39	43	40
Forage Crops	1	2	2	2
Agistment	45	64	66	63
Labour	61	56	62	71
Transport	3	3	4	3
Miscellaneous	27	26	30	31
Total	175	191	209	211
Margin (Production minus Costs)	183	245	217	158

Table XIII.

Production, Costs and Margins per 100 Breeding Ewes by Size of Flock.

57 Identical Hill Flocks.

800 and Over Breeding Ewes.

	1955-56	1956-57	1957-58	1958-59
Production:	£.	£.	£.	£.
Opening Valuation of Sheep	584	613	591	575
Purchases of Sheep	17	4	5	5
Total (A)	601	617	596	580
Closing Valuation of Sheep	611	620	611	606
Sales of Sheep	212	284	272	207
Value of Wool	84	94	87	83
Hill Sheep Special Payment	25	-	-	-
Total (B)	932	998	970	896
Production (B - A)	331	381	374	316
Costs:				
Hand Fed Foods	7	4	3	3
Grazing	25	24	24	25
Forage Crops	1	1	1	1
Agistment	63	75	77	80
Labour	58	61	62	62
Transport	8	9	10	9
Miscellaneous	26	29	30	27
Total	188	203	207	207
Margin (Production minus Costs)	143	178	167	109