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THE ECONOMIC ORGANISATION AND FINANCIAL RESULTS
OF A SAMPLE OF MIXED FARMS IN WALES FOR THE
YEAR 1945.

by

OWEN T. W. PRICE, B.Sc.

Department of Agricultural Economics,
University College of Wales,
Aberystwyth.

1947.

The data on which this study is based relate to 65 farms distributed throughout the thirteen Welsh counties. The farms are essentially mixed enterprises in so far as there is no undue reliance placed on one or even a few forms of production. All of them sell some milk and in so far as there is any special emphasis, it may perhaps be on milk production which over all farms accounts for between 36 and 40 per cent of total receipts. The farms range in size from 28 to 500 acres and average 172 acres. The majority of them, however, are in the lower acreage ranges, about 70 per cent of them being less than 200 acres. Nevertheless, it has been considered desirable to classify the farms on a size basis in order to measure its influence on the associated factors of receipts and expenses and the resulting net farmers' earnings.

In a sample such as this it is only to be expected that the quality of land on farms will vary considerably even within each size group. One of the factors which has a marked influence on the complex condition known as fertility is altitude, and Table I gives some indication of the distribution of these farms at various heights above sea level. It must be pointed out, however, that altitude and productivity do not of necessity vary inversely, and that there may be wide variations in productivity of farms situated at similar altitudes and in fact such differences do seem to occur in this sample.

Table I.

Mean Altitude of Farms.

Size Groups (Acres).	Mean Altitude Range (Feet).					1000 & over.	Total No. of Farms.
	Under 400	400-600	600-800	800-1000			
0 - 99	6	5	4	1	-	16	
100 - 149	5	2	1	3	1	12	
150 - 199	6	5	3	3	-	17	
200 - 249	4	1	2	1	-	8	
250 - 299	2	1	3	-	-	6	
300 & over	3	1	-	2	-	6	
Total No. of Farms	26	15	13	10	1	65	

It will be seen from Table I that no size group is confined to a single altitudinal range, but that the variations are wider in some groups than in others. The sample contains quite an appreciable proportion of upland farms, about one-sixth of the total having a mean altitude of 800 feet and above. But altitude is only one of the many complex factors which affect productivity; other possible influences are the physical, biological, and chemical composition of the soil, topography, accessibility to markets, and possibilities of alternative uses of land. The net effect of these various combinations of factors tends to be reflected in rent.

Land Utilisation. The variations in altitude, size and rentals are also reflected in the cropping policy which in turn influences the stock-carrying capacity of farms. The land utilisation on a per farm basis and in terms of per 100 acres are set out in Tables II and III respectively.

Table II.

Land Utilisation (Per Farm).

	I.	II.	III.	IV.	V.	VI.	VII.
						300	All
Size Groups (Acres)	0-99	100-149	150-199	200-249	250-299	& over	Farms.
Number of Farms	16	12	17	8	6	6	65
	Acres	Acres	Acres	Acres	Acres	Acres	Acres
Wheat	1.2	2.5	7.1	5.6	8.5	5.0	4.6
Barley	3.3	3.2	3.0	2.0	4.2	22.9	4.9
Oats	7.4	16.0	17.3	25.3	26.7	21.2	16.8
Mixed Corn	2.0	3.2	4.4	6.1	11.9	9.2	4.9
Beans and Peas	0.8	1.1	0.5	2.9	-	1.5	1.0
Total Corn & Pulse	14.7	26.0	32.3	41.9	51.3	59.8	32.2
Silage (cereal legume)	-	0.6	0.3	1.0	-	2.7	0.6
Sugar Beet	0.2	0.2	1.0	1.1	0.8	1.3	0.7
Potatoes	1.5	2.5	3.4	4.2	5.7	5.6	3.3
Roots	1.5	2.0	2.8	3.0	5.3	4.3	2.7
Kale, Rape & Cabbage	1.2	5.7	6.0	9.6	12.8	7.8	6.0
Bare Fallow	-	0.1	-	-	-	-	-
Direct Reseeding	0.2	-	-	-	-	-	0.1
Total Tillage	19.3	37.1	45.8	60.8	75.9	81.5	45.6
Temp. Grass for Hay	2.7	7.1	9.1	13.9	6.7	8.9	7.5
" " " Grazing	0.1	0.4	9.3	-	1.6	5.7	3.2
" " " Silage	-	1.4	0.4	-	-	-	0.4
" " " Seed	-	1.4	1.4	3.5	-	2.0	1.2
Total Temporary Grass	2.8	10.3	20.2	17.4	8.3	16.6	12.3
Total Arable	22.1	47.4	66.0	78.2	84.2	98.1	57.9
Permanent Grass for Hay	10.2	12.9	20.6	17.6	36.3	37.6	19.3
do. for Grazing	29.2	49.5	70.6	89.7	112.7	100.9	65.5
do. Silage	-	-	-	0.2	0.2	-	0.1
Total Permanent Grass	39.4	62.4	91.2	107.5	149.2	138.5	84.9
Rough Grazing	4.5	13.5	12.7	23.4	37.8	129.3	25.2
Total Crops	66.0	123.3	169.9	209.1	271.2	365.9	168.0
Woodlands, etc.	1.4	3.3	5.9	9.6	2.8	2.8	4.2
Total Acreage	67.4	126.6	175.8	218.7	274.0	368.7	172.2

The proportion of tillage to total land area is determined largely by the directions of the respective County Agricultural Executive Committees. In determining tillage quotas consideration is taken of any special feature, such as

Table III.

Land Utilisation (Per 100 Acres).

Size Group (Acres).	I. 0-99	II. 100-149	III. 150-199	IV. 200-249	V. 250-299	VI. 300 & over	VII. All Farms.
	Acres	Acres	Acres	Acres	Acres	Acres	Acres
Wheat	1.8	2.0	4.0	2.6	3.1	1.4	2.7
Barley	4.9	2.5	1.7	0.9	1.5	6.2	2.8
Oats	11.0	12.6	9.9	11.5	9.8	5.7	9.8
Mixed Corn	3.0	2.5	2.5	2.8	4.3	2.5	2.8
Beans and Peas	1.1	0.9	0.3	1.3	-	0.4	0.6
Total Corn and Pulse	21.0	20.5	18.4	19.1	18.7	16.2	18.7
Silage	-	0.5	0.2	0.5	-	0.7	0.3
Sugar Beet	0.3	0.1	0.6	0.5	0.3	0.4	0.4
Potatoes	2.2	2.0	1.9	1.9	2.1	1.5	1.9
Roots	2.2	1.6	1.6	1.4	1.9	1.2	1.6
Kale, Rape, and Cabbage	1.8	4.5	3.4	4.4	4.7	2.1	3.5
Bare Fallow	-	0.1	-	-	-	-	-
Direct Reseeding	0.3	-	-	-	-	-	0.1
Total Tillage	28.6	29.3	26.1	27.8	27.7	22.1	26.5
Temporary Grass for Hay	4.0	5.6	5.2	6.4	2.4	2.4	4.3
" " " Grazing	0.2	0.3	5.3	-	0.6	1.6	1.9
" " " Silage	-	1.1	0.2	-	-	-	0.2
" " " Seed	-	1.1	0.8	1.6	-	0.5	0.7
Total Temporary Grass	4.2	8.1	11.5	8.0	3.0	4.5	7.1
Total Arable	32.8	37.4	37.6	35.8	30.7	26.6	33.6
Permanent Grass for Hay	15.1	10.2	11.7	8.0	13.3	10.2	11.2
" " " Grazing	43.3	39.1	40.2	41.0	41.1	27.3	38.0
" " " Silage	-	-	-	0.1	0.1	-	0.1
Total Permanent Grass	58.4	49.3	51.9	49.1	54.5	37.5	49.3
Rough Grazings	6.7	10.7	7.2	10.7	13.8	35.1	14.6
Total Crops	97.9	97.4	96.7	95.6	99.0	99.2	97.5
Woodlands etc.	2.1	2.6	3.3	4.4	1.0	0.8	2.5
Total Acreage	100.0	100.0	100.0	100.0	100.0	100.0	100.0

the amount of rough grazing, type of soil, and drainage, on individual farms. Other things being equal, therefore, it may be expected that those farms with a small proportion of rough grazings will tend to have a large proportion of tillage area. This is not universally true, however, as many farmers with big ewe flocks have endeavoured to reclaim rough land, especially with the use of rape as a pioneer crop, and have in some cases exceeded the tillage areas stipulated by the Agricultural Executive Committees. This is probably the reason for the large proportion of tillage area shown in Group II. Temporary grassland tends to be greater on the highland farms, where an appreciable amount of reseeded and

reclaiming has been carried out during the war years. This results in a large proportion of total arable land on farms where the mean altitudes are high. Permanent pastures and rough grazings together are greatest on the smallest farms situated at low altitudes. The actual proportion of rough grazings, however, tends to increase with increasing size of farm, particularly at the higher elevations. Group II shows a large proportion of rough grazings in comparison with the size groups both above and below it, a feature which may be attributed to the high mean altitude of these farms. Thus, although the proportion of tillage land to total area is largely predetermined, farmers are allowed considerable freedom of choice of crops to be grown within the specified area.

Most farmers in Wales consider oats to be a safer fodder crop than barley and it will be observed that in nearly every group oats is the main cereal grown. Many farmers, however, favour barley as a nurse crop for "seeds" when these are undersown with cereals. On the higher land farms and on relatively poor land, rape has within recent years been extensively used as a nurse crop, and it may be clearly discerned that where the proportion of rape to tillage area is high that of barley is low, indicating that there is a certain amount of substitution for this purpose. In the group of largest farms the amount of barley is very high owing to the inclusion of one farm where a considerable area is grown for sale, and on which there is no oats.

In no group does wheat amount to more than 16 per cent of the total tillage area. The variation in proportions of wheat grown depend largely upon the location of farms within each size group; thus lowland farms on good land and farms in the border counties, such as Monmouth and Montgomery tend to grow more than those in other areas.

The acreages of pulse crops grown are not of major importance and feature in the cropping schedules of only 7 of the 65 farms in the sample. It should be borne in mind however that even small areas of peas or beans provide an important addition to the winter protein supplies and are particularly valuable for milk production as well as for feeding to young stock. The farms on which pulse crops are grown nearly all show an appreciable dependence on dairying as a source of income.

The type of roots or green crops grown depend largely upon the quality of land on farms and the purpose for which these crops are intended. Sugar beet and potatoes are grown mainly for sale, or in the case of the latter for consumption on the farms. The proportions under the two crops do not show a wide variation between the different size groups. Sugar beet is grown in 10 cases, 9 of these farms being in Montgomeryshire.

The distribution of the remainder of the roots and green crop area would appear to depend on three main factors, which may be summarised thus:-

- (i) As the area of the farm increases there is some tendency to increase the proportion of rape, as a labour-saving crop, in preference to other green crops and roots.

(ii) Farmers on low-lying farms tend to substitute kale or cabbage for rape as a green crop for fodder, whereas the reverse is generally the case on higher ground.

(iii) At the higher altitudes rape is often used as a nurse crop for "seeds" in preference to barley.

Hay is still a very important winter fodder crop on all Welsh farms. It will be seen from Table III that the proportion of hay grown on the smaller farms is relatively high, which may be attributed to their tendency towards greater intensity of stocking than the larger farms (especially with cattle) and consequently their need for relatively greater quantities of winter fodder. A few farms make silage and a few others have young leys for pedigree and clover seed production. These crops are however isolated instances and are not representative of the cropping in any particular group.

Numbers of Livestock. Numbers of the different classes of livestock carried on a per farm and per 100 acres basis are given in Tables IV and V respectively.

Table IV.

Numbers of Livestock (Per Farm).
(Average Opening and Closing Valuations).

Size Group (Acres).	I.	II.	III.	IV.	V.	VI.	VII.
	0-99	100-149	150-199	200-249	250-299	300 & over	All Farms
Cows & In-Calf Heifers	14.0	20.8	26.3	34.2	38.3	44.0	26.0
Other Cattle	15.1	22.3	29.7	37.5	42.3	47.0	28.4
Total Cattle	29.1	43.1	56.0	71.7	80.6	91.0	54.4
Breeding Ewes	27.1	80.7	86.1	87.2	131.5	221.3	87.4
Other Sheep	16.0	74.6	71.8	76.7	112.7	124.8	68.0
Total Sheep	43.1	155.3	157.9	163.9	244.2	346.1	155.4
Breeding Sows	0.2	0.5	1.2	1.9	3.6	1.9	1.2
Other Pigs	2.5	3.8	7.4	14.0	20.2	14.5	8.2
Total Pigs	2.7	4.3	8.6	15.9	23.8	16.4	9.4
Laying Fowls	84.0	85.8	85.3	114.2	138.8	78.3	93.0
Other Poultry	5.2	12.8	8.1	15.9	25.4	8.7	10.8
Total Poultry	89.2	98.6	93.4	130.1	164.2	87.0	103.8
Work Horses	1.8	2.7	3.1	3.4	3.7	2.7	2.8
Other Horses	0.1	0.9	0.9	1.9	4.3	3.2	1.3
Total Horses	1.9	3.6	4.0	5.3	8.0	5.9	4.1

Numbers of the chief classes of stock naturally increase with increasing size of farm, but show a tendency to decline when expressed in terms of per unit area.

Table V.

Numbers of Livestock (Per 100 Acres).
(Average of Opening and Closing Valuations).

	I.	II.	III.	IV.	V.	VI.	VII.
Size Groups (Acres)	0-99	100-149	150-199	200-249	250-299	300 & Over	All Farms.
Cows & In-Calf Heifers	20.8	16.5	14.9	15.6	13.9	11.9	15.1
Other Cattle	22.3	17.6	16.8	17.2	15.2	12.9	16.5
Total Cattle	43.1	34.1	31.7	32.8	29.1	24.8	31.6
Breeding Ewes	40.1	63.8	48.8	39.8	46.3	60.0	50.7
Other Sheep	27.8	58.3	41.0	35.1	41.0	33.3	39.5
Total Sheep	67.9	122.1	89.8	74.9	87.3	93.3	90.2
Breeding Sows	0.4	0.4	0.7	0.9	1.0	0.5	0.7
Other Pigs	3.7	3.0	4.2	6.4	6.1	3.9	4.3
Total Pigs	4.1	3.4	4.9	7.3	9.1	4.4	5.5
Laying Fowls	124.7	67.8	48.3	52.3	50.1	21.2	54.0
Other Poultry	7.6	10.1	4.6	7.2	9.8	2.3	6.3
Total Poultry	132.3	77.9	52.9	59.5	59.9	23.5	60.3
Work Horses	2.7	2.1	1.8	1.6	1.4	0.7	1.6
Other Horses	0.2	0.8	0.4	0.9	1.4	0.9	0.8
Total Horses	2.9	2.9	2.2	2.5	2.8	1.6	2.4

A better indication of stock-carrying capacity, however, is provided by expressing numbers of livestock in terms of cow-units, and this has been done in Table VI.

In all groups cattle are the main class of fodder consuming livestock. Indeed in the smallest group the total number of stock units largely consists of cattle and especially dairy cattle. Here the numbers of cows in milk and of young stock intended for the dairy herd are relatively high. As the farms increase in size, the ratio of other cattle to dairy cows increases and on the larger farms are in excess of numbers of dairy cows. Numbers of stores over 2 years old are especially high in Group IV. This is so because a relatively high number of forward stores are kept for fattening. In fact all the larger farms practise some store raising or fattening.

Numbers of sheep carried per 100 acres seem to bear some relationship both to size of farm and to the proportion of rough grazings on farms. Farms in

Table VI.

Numbers of Livestock (In Cow Units)
Per Farm.

	I.	II.	III.	IV.	V.	VI.	VII.
						300 &	All
Size Groups (Acres)	0-99	100-149	150-199	200-249	250-299	Over	Farms
Cows & In Calf Heifers	11.5	17.0	19.9	25.4	29.6	32.4	22.2
Other Cattle	9.4	14.2	20.6	27.1	32.9	36.1	20.8
Total Cattle	20.9	31.2	40.5	52.5	62.5	68.5	43.0
Breeding Ewes	3.8	11.6	12.3	12.5	18.9	31.1	12.1
Other Sheep	1.3	6.3	5.6	6.3	8.8	20.8	5.8
Total Sheep	5.1	17.9	17.9	18.8	27.7	51.9	17.9
Other Stock	3.3	4.9	6.2	9.0	12.1	8.5	6.9
All Livestock	29.3	54.0	64.6	80.3	102.3	128.9	67.8

Per 100 Acres.

Cows & In Calf Heifers	17.1	13.4	11.3	11.6	10.8	8.8	12.9
Other Cattle	13.9	11.2	11.7	12.4	12.0	9.8	12.1
Total Cattle	31.0	24.6	23.0	24.0	22.8	18.6	25.0
Breeding Ewes	5.7	9.2	7.0	5.7	6.9	8.4	7.0
Other Sheep	1.9	5.0	3.2	2.9	3.2	5.7	3.4
Total Sheep	7.6	14.2	10.2	8.6	10.1	14.1	10.4
Other Stock	4.9	3.9	3.5	4.1	4.4	2.3	4.0
All Livestock	43.5	42.7	36.7	36.7	37.3	35.0	39.4

Group II which have somewhat high proportions of rough land carry very large flocks.

The number of pigs kept in relation to area are lowest on the smallest farms; but this is undoubtedly the result in part of stringent food rationing. On the other hand, somewhat greater supplies of home-grown feed, particularly of potatoes have on the whole enabled the larger farms to keep more pigs. Numbers of poultry decline fairly constantly per 100 acres as the size of farm increases.

The possession of a tractor on a farm influences the number of work horses kept. But most of these farmers found it desirable to maintain two or three work horses for various tasks. In group I only a third of the farms possessed tractors, so that numbers of work horses are high. Most farms above 100^{acres} have a tractor and some of the larger farms have more than one tractor. But for all groups above 100

acres the numbers both of tractors and of work horses per unit area decreases with the increase in size, thus indicating that as the size of the farm increases its power resources are more economically used.

Tenants' Capital. Tenants' capital comprises livestock and deadstock, tenants' fixtures and growing and harvested crops. Variation between opening and closing valuations which arise from differences in market values have been eliminated, to a great extent, by the use of standard values in the case of breeding stock and of home grown foods. Tenants' fixtures and equipment have been depreciated at standard rates. Current repairs are included in expenses, as are new implements, but the latter have also been included in capital. Circulating capital in the form of farm stores has not been included in capital, but small tools and other sundry equipment have been entered in the machinery valuation.

Table VII.

Percentage Distribution of Tenants'
Capital.

Capital Items.	Size Groups (Acres).						
	I.	II.	III.	IV.	V.	VI.	VII.
	0-99	100-149	150-199	200-249	250-299	300 & Over.	All Farms.
	%.	%.	%.	%.	%.	%.	%.
Cattle	46.9	44.2	37.1	43.8	39.0	41.7	41.3
Sheep	7.8	14.0	11.6	11.4	14.4	15.6	12.5
Pigs	1.7	0.9	1.8	2.1	3.1	1.2	1.7
Poultry	2.2	1.4	1.5	1.6	1.4	0.7	1.4
Horses	6.0	6.9	5.7	6.6	7.5	7.0	6.5
Total Livestock	64.6	67.4	57.7	65.5	65.4	66.2	63.4
Crops	8.5	6.3	7.3	6.4	11.4	12.4	8.5
Machinery	26.9	26.3	35.0	28.1	23.2	21.4	28.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Capital.</u>	£.	£.	£.	£.	£.	£.	£.
Per Farm	:1189.5	:2011.3	:2903.6	:3127.3	:3463.0	:4410.9	:2535.2
Per 100 Acres	:1764.8	:1591.9	:1645.3	:1429.9	:1263.9	:1195.9	:1472.4

Investment in livestock represents a more or less constant proportion of the total capital in all groups with the exception of Group III, where it is comparatively low as a result of a relatively high investment in machinery and especially in tractors. As will be seen from Table VII the combination of enterprises has an important bearing on the actual distribution of capital. All groups

turn over their capital once in about fourteen months with the exception of Group IV which does so every 12 months. In this group considerable feeding of store cattle for sale as forward stores or in fat condition was done and receipts were thus appreciably increased in relation to the total capital invested.

Labour. It is perhaps only natural to find that the proportion of and actual amount of manual work performed by the farmer and/or his wife is greater on the smaller than on the larger farms. On the other hand much of the farmers' time on the larger farms is devoted to managerial work. The proportion of the total labour complement consisting of sons and daughters is low on the smallest group possibly because they are employed in other industries where their remuneration is higher, or on other farms where there are greater possibilities of their taking up work which allows them greater scope for managerial duties. On the remaining groups, with the exception of Group II, sons and daughters constitute about one-fifth of the total labour force, and here they have a certain amount of delegated responsibility such as being in charge of all tractor work or taking care of livestock. It is noteworthy however that in Group II they represent over a quarter of the total labour force.

Table VIII.

Percentage Distribution of the Labour Complement.

Classes of Labour.	Size Groups (Acres).						
	I. : 0-99	II. : 100-149	III. : 150-199	IV. : 200-249	V. : 250-299	VI. : 300 & over	VII. : All Farms.
	%	%	%	%	%	%	%
Farmer and Wife	46.6	27.3	25.2	23.3	19.0	11.5	26.0
Other Family Labour	13.7	27.9	19.4	22.3	19.7	22.1	20.6
Total Family Labour	60.3	55.2	44.6	45.6	38.7	33.6	46.6
Hired Regular	32.4	36.2	46.1	52.1	53.1	53.4	45.7
Hired Casual	7.3	8.6	7.3	2.3	8.2	13.0	7.7
Total Hired Labour	39.7	44.8	55.4	54.4	61.3	66.4	53.4
Total Manual Labour	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Persons.	No.	No.	No.	No.	No.	No.	No.
Per Farm	2.5	3.4	4.5	4.8	5.3	5.5	4.0
Per 100 Acres	3.7	2.7	2.5	2.2	1.9	1.5	2.3

The proportion of manual work done by regular hired workers increases consistently with the increase in size of farm, and in the farm groups of 200 acres and above they perform more than one half of all manual tasks. The amount of casual labour fluctuates widely and shows no relationship to size of farm, but it will be shown later that the proportion of total expenses attributable to contract work is greatest on the smallest farms and least on farms in Groups II and III. This may be due to the fact that many of the smaller farms possess no tractors and have to rely on contractors' services for some of the heavy farm operations; while

the larger farms, owning tractors, may find it difficult to cope with all the work at the appropriate times without outside help. The intermediate groups appear to be able to complete nearly all necessary work with their own power resources.

Receipts. The chief items of receipts are given in Table IX.

Table IX.

Percentage Distribution of Receipts.

Items.	Size Groups (Acres).						
	I. 0-99	II. 100-149	III. 150-199	IV. 200-249	V. 250-299	VI. 300 & over	VII. All Farms
	%	%	%	%	%	%	%
Cattle	18.0	19.1	15.6	20.1	16.9	15.7	17.3
Sheep and Wool	9.5	16.1	13.2	12.2	15.3	19.3	14.3
Pigs	2.2	1.3	2.6	4.3	3.6	2.6	2.9
Poultry and Eggs	9.2	3.0	3.4	2.7	3.4	2.2	3.7
Horses	0.6	1.6	0.8	1.8	1.5	2.0	1.3
Total Livestock	39.5	41.1	35.6	41.6	41.2	41.8	39.5
Dairy Produce	38.8	38.1	40.4	37.2	38.2	36.4	38.4
Crops & Acreage Payment	11.7	12.6	14.5	15.6	15.5	15.1	14.3
Hill Sheep Subsidy	0.6	0.3	0.5	0.2	0.3	1.1	0.5
Hill Cattle Subsidy	0.1	0.2	0.1	-	0.1	1.0	0.3
Other Grants	0.4	0.7	0.4	0.5	1.0	0.4	0.5
Total Grants	1.1	1.2	1.0	0.7	1.4	2.5	1.3
Other Receipts	1.4	1.6	5.1	1.2	0.7	1.0	2.3
Farm Produce Consumed at Home	5.5	4.5	2.7	2.2	2.9	2.4	3.2
Implements Sold	2.0	0.9	0.7	1.5	0.1	0.8	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Receipts.</u>	£.	£.	£.	£.	£.	£.	£.
Per Farm	:1115.6	:1825.3	:2567.3	:3310.1	:3182.5	:3930.5	:2347.2
Per 100 Acres	:1656.6	:1442.9	:1470.0	:1513.2	:1161.6	:1065.6	:1365.6

The intensity of production per unit of area, while showing a general downward course as the size of farm increases, is by no means constant.

Dairying is the most important single enterprise in all groups and

accounts for between 36 and 40 per cent of the total receipts. The livestock enterprises are next in importance and are closely linked up with the dairy enterprises and especially with cattle sales.

Owing to the predominance of dairying on the smaller farms there is a tendency to sell out surplus male calves, especially as "bobbies". While on the larger farms greater numbers of calves are retained for rearing for subsequent sale as stores, or for home fattening, as well as for herd replacements. This is largely because there are more surplus foods and roughages available for other stock, and in such cases other cattle enterprises are not in direct competition with the dairy herd for winter foods. Cattle fattening is practised to an appreciable extent in Group IV. Sales of strong forward stores also figure prominently in this group as well as in the largest size group. With the exception of Group IV cattle sales per 100 acres consistently decline with increases in size of farm.

As might be expected sheep sales are naturally of greatest importance on large farms and on those at relatively high altitudes. Pigs and poultry are comparatively small enterprises and in no group are they of major importance. Sales of horses are relatively unimportant, and do not exceed more than 2 per cent of the total farm receipts in any of the groups. Crop sales are naturally higher on the larger farms.

Government aid in the form of subsidies and grants is relatively small and "other receipts" which consist of farm stores used in the house, sales of rabbits and payments for the hiring out of farm equipment are relatively unimportant.

It has already been shown that the output per acre tends to fall as the size of the farming unit increases and this general tendency is also true of inputs per acre (see Table X).

Outlay on labour (excluding allowance for farmer and wife) constitutes the largest single item of expenditure in all groups and represents from 24 to 32 per cent of total farm expenses. Moreover, it represents a higher proportion of total expenses on the larger than on the smaller farms.

Livestock expenses are next in importance and represent from 9 to 20 per cent of total farm expenditure. They are highest in both absolute and relative amounts in Groups II and IV. In Group II this is chiefly due to a relatively high expenditure on sheep, while it also shows a comparatively heavy outlay on cattle. Cattle represent the greatest single item of expenditure on livestock in all groups, and this is especially noticeable in Group IV.

Expenses on pigs and poultry are in no instance of great importance and purchases of such livestock decrease as the acreage of the groups increases. Expenses on horses are also insignificant and seldom exceed one per cent of the total expenses.

Table X.

Percentage Distribution of Farm Expenses.

Items.	Size Groups (Acres).						
	I. 0-99	II. 100-149	III. 150-199	IV. 200-249	V. 250-299	VI. 300 & over	VII. All Farms.
	%.	%.	%.	%.	%.	%.	%.
Cattle	8.6	10.0	6.8	11.2	4.8	4.1	7.7
Sheep	2.5	7.1	5.7	4.9	3.1	4.1	4.9
Pigs	0.9	0.8	0.6	0.4	0.6	0.2	0.6
Poultry	0.7	0.6	0.3	0.5	0.2	0.6	0.5
Horses	0.3	0.9	1.2	1.4	0.3	1.0	0.9
Total Livestock	13.0	19.4	14.6	18.4	9.0	10.0	14.6
Foods	13.1	9.3	10.7	13.8	13.5	3.9	11.4
Stock Keep	0.8	0.5	0.9	0.4	0.3	0.4	0.6
Seeds and Fertilisers	10.8	10.5	11.1	11.0	13.1	14.5	11.7
Rent and Rates	11.7	8.6	11.1	9.0	13.3	14.1	11.1
Miscellaneous	12.1	17.5	16.3	14.6	12.2	17.5	15.4
Labour:							
Hired Regular	16.2	13.2	20.1	17.4	23.7	18.4	18.3
Hired Casual	3.6	3.5	2.9	0.7	2.6	3.7	2.7
Sons and Daughters	6.6	10.9	7.6	6.2	6.0	7.5	7.5
Total Labour excluding Farmer and Wife	26.4	27.6	30.6	24.3	32.3	29.6	28.5
Contract Work	4.0	2.3	1.8	3.1	2.6	2.8	2.6
New Implements	8.1	4.3	2.9	5.4	3.7	2.2	4.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Expenses.	£.	£.	£.	£.	£.	£.	£.
Per 100 Acres	1201.1	1158.0	1088.5	1199.1	830.1	743.5	1023.1
Per Farm	812.0	1465.0	1920.9	2622.9	2274.2	2742.0	1758.6

Expenditure on feedingstuffs accounts for between 9 and 14 per cent of total expenses throughout the range of size groups. These proportions are low compared with what would have been expected before 1939, but the higher tillage quotas which were imposed in the meantime have considerably reduced dependence on purchased foods, the main purchases now being of protein cakes for dairy stock, calf meals, and poultry mashes,

The proportion of total expenses attributable to seeds and fertilisers is

higher on the larger than on the smaller farms. In absolute amounts per 100 acres, however, such expenditure shows the reverse trend.

Rents vary around one-tenth of the total expenses. Miscellaneous expenses taken together are somewhat high, constituting between 12 and 18 per cent of the total.

Financial Results. The statements of income given in Table XI below need full understanding of the methods of calculation. The farm income represents the balance between receipts and expenses after allowing for valuation differences during the financial year. Expenditure on labour includes an allowance at current rates for unpaid family labour other than that for the occupier and his wife. The value of the farm produce consumed in the house and the rent of the farm house at rateable value is included in receipts. The farm income can therefore be taken as the amount available to remunerate the occupier (the farmer and his wife) for work and management and for the capital invested in the farm. The labour income is farm income minus allowance for interest on capital at the rate of 6 per cent per annum and therefore represents the earnings of the farmer and his wife in manual labour and management on the farm. Managerial earnings is the sum left over after deducting from the labour income, wages to the farmer and wife for manual labour. The basis adopted for wages is to assess the full-time manual labour of an occupier at £190 per annum and a wife at £140 and to charge wages for the time actually spent in manual work on the farm.

Table XI.

Financial Results (Per Farm).

Size Groups (Acres).	Farm Income.	Interest on: Capital at 6 per cent.	Labour Income.	Allowance to Farmer & Wife.	Managerial Earnings.
	£.	£.	£.	£.	£.
0 - 99	336.7	71.4	265.3	204.4	60.9
100 - 149	369.6	120.7	188.9	156.0	22.9
150 - 199	654.0	174.2	479.8	206.3	273.5
200 - 249	783.4	187.6	595.8	203.9	391.9
250 - 299	1019.5	207.8	811.7	185.8	635.9
300 & over	1069.3	264.6	804.7	129.2	675.5
All Farms	565.6	152.1	413.5	189.1	224.4

It will be seen that in the smallest size group, the managerial earnings amount to just over £1 per week, while in the next group (which consists of a number of relatively poor farms at high altitudes) it is somewhat below 10s. per week. Thereafter the managerial earnings are more satisfactory and increase consistently with size of farm.

The same data presented in terms of per 100 acres is given in Table XII.

Table XII.

Financial Results per 100 Acres.

Size Groups (Acres)	Farm Income.	Interest on Capital at 6 per cent.	Labour Income.	Allowance to Farmer & Wife.	Managerial Earnings.
	£.	£.	£.	£.	£.
0 - 99	503.1	105.9	397.3	303.3	94.0
100 - 149	244.8	95.5	149.3	131.3	18.0
150 - 199	385.8	98.7	287.1	116.9	170.2
200 - 249	358.1	85.8	272.3	93.2	179.1
250 - 299	402.1	75.8	326.3	67.8	258.5
300 & over	289.6	71.7	217.9	35.0	182.9
All Farms	328.5	88.3	240.1	109.8	130.3

Even when the earnings are viewed in relation to area it is seen that profits in the smaller groups are low and that the size of such farms mitigates against the attainment of high managerial earnings. The advantages of large-scale production, such as economy in labour and machinery, are undoubtedly among the factors leading to high profits on the large farms. Physical factors such as soil, altitude &c. also influence the levels of remunerations. The low profits on the smaller farms seem to be exaggerated in Group II because of the high mean altitude range and low rental; on the other hand high profits per 100 acres on farms with over 150 acres are accentuated in Group V, partly because of the comparatively high rental and low mean altitude. In the largest size group incomes per 100 acres are lower than in Group V although they continue to rise per farm.

Conclusions. If the farms are regarded as a whole, possibly their most interesting feature, despite small variations, is their similarity of organisation. Milk production is the pivotal enterprise in all groups, and any differences which may occur between groups are largely the result of differences in the combination of other enterprises with dairying. Such differences are in part a reflection of variations in the managerial ability within the groups but also, in part, as has already been indicated, of variations in the capacities of farms. The essence of successful mixed farming is to make the fullest possible use of the factors of production, particularly of land and labour. The fitting of minor enterprises, such as pigs and poultry, into the organisation may not add a great deal to the total farm receipts; but if what is added is carried on at low cost, or if labour and materials used would otherwise be wasted, then such small additions may make considerable difference to the profit position.

From the point of view of the individual farmers the most important

economic measures are the "labour income" and "managerial earnings" as herein defined. In the case of family farms somewhat greater importance may perhaps be attached to the former concept. But from the standpoint of the community at large other considerations merit attention. Thus size of farming unit is also an important factor in farm organisation. And during recent years, when food has been in short supply output per acre has been the prime objective in the national economy and in this respect the advantage lies with the smaller farms. In the future, however, increasing attention will have to be placed on output per man. Indeed, if British farming is to maintain a satisfactory labour complement and to provide reasonable incomes the general level of output per man will have to be raised still further.