University of Bristol

Department of Agriculture & Horticulture

The Wiltshire Agricultural Accounting Society

Analysis of Four Years' Financial Accounts

by

C. V. DAWE, M. Com.

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ANALYSIS OF FOUR YEARS' FINANCIAL ACCOUNTS.

The Wiltshire Agricultural Accounting Society was founded in August, 1925, by a few Wiltshire farmers, with the object of establishing some organisation which would enable those farming in the county to compare and discuss problems of economic interest, and especially to help one another in making available for each and all an analysis of their farm accounts. This, indeed, has proved itself to be the most valuable side of the Society's activities. With the aid of the Department of Agriculture (Economics Branch) of the University of Bristol, the members receive individually an analysis and report concerning their own particular farm, together with annual comparative statistics relating to the members as a whole. There are now four years' results available, and the present report is a summary, and in some ways a more detailed examination, of the position of farming in Wiltshire, as seen through the data supplied by the members of the Society.

Before actually commencing an analysis of the results it is interesting to note that the membership has increased since its inauguration, as the following figures show:—

Year.	*Membership.*
1925	51
1926	64
1927	69
1928	61
1929	72
1930	82

These members are scattered over the county, they represent every type of Wiltshire farming, and their farm accounts give one a clear picture of how they have fared financially during the four years.

It is the purpose of this report to make a detailed review of the financial results for the four years 1925—1928 inclusive. Owing, however, to the fact that there have been certain changes

in membership during these four years, due to additions and withdrawals, it is only possible to compare results for the whole period in the case of twenty-five farms. Four years' results from the same twenty-five farms appeared to be of more value than results from a larger number of farms for a smaller number of years, or, on the other hand, from different farms in each year. By this method, one of the disturbing factors, namely, the management, would be stabilised when comparison is made between the years. In other words, the sample of farms, upon which this report is based, remains the same for the period under consideration.

Size and Type. The twenty-five farms considered in this report have, with one or two exceptions, maintained their same acreage and approximately the same proportions of grass and arable land over the four years. For the cropping year 1928, the following table gives a general idea of the size and type of farms:—

YEAR 1928.

Farm	Acreage between	Percentage of				Chief types of output in order of importance
		Permanent Pasture	Enclosed Down	Unenclosed Down	Arable	
A	1000–1050	100	—	—	—	Milk
B	1400–1450	14	78	—	8	Sheep
C	1450–1500	14	34	—	52	Cereals, sheep
D	550– 600	29	—	—	71	Milk, cereals, sheep
E	900– 950	46	20	1	33	Milk, cereals
F	1350–1400	22	61	—	17	Milk, sheep, cattle
G	1250–1300	14	—	26	60	Cereals, sheep
H	700– 750	31	—	5	64	Milk, cereals, sheep
I	2000–2500	34	4	27	35	Milk, cereals, sheep
J	1200–1250	25	9	8	58	Cereals, milk, sheep, cattle
K	1200–1250	16	39	—	45	Sheep, milk
L	2000–2500	29	—	34	37	Milk, cereals, sheep
M	600– 650	38	17	2	43	Milk, cereals, sheep
N	50– 100	100	—	—	—	Milk
O	1450–1500	32	—	23	45	Cereals, milk, sheep
P	1050–1100	32	32	—	36	Cereals, sheep, cattle
Q	250– 300	65	—	—	35	Milk, cereals
R	1100–1150	73	6	—	21	Milk
S	1100–1150	52	22	—	26	Milk
T	1200–1250	13	41	30	16	Milk, sheep, cereals
U	2500–3000	26	46	—	28	Milk, cereals, sheep
V	250– 300	56	—	—	44	Milk, cereals
W	750– 800	20	—	6	74	Milk, sheep, cereals
X	650– 700	19	—	28	53	Cereals, milk, sheep
Y	50– 100	87	—	—	13	Pigs, milk, cereals
Total Actual Acreage 27348 Average Size 1094		32%	21%	10%	37%	

Livestock. The livestock carried on these farms is given in the following table for each of the four years, in order to show, firstly, the fluctuations in numbers and types from year to year, and, secondly, the average density of stocking over the whole period.

TOTAL LIVESTOCK CARRIED ON 25 FARMS.

YEAR	ACREAGE	HORSES		CATTLE*		SHEEP		PIGS	
		Total No.	Per 100 acres	Total No.	Per 100 acres	Total No.	Per 100 acres	Total No.	Per 100 acres
1925	27044	462	1.71	3374	12.48	14284	52.82	778	2.88
1926	27075	450	1.66	3786	13.98	15034	55.53	713	2.63
1927	27276	456	1.68	4285	15.70	15418	56.50	659	2.42
1928	27348	424	1.55	3930	14.37	13809	50.50	732	2.69
Average	27186	448	1.65	3844	14.13	14636	53.84	732	2.69

Over the four years these farms carried the following:—

$1\frac{2}{3}$ Horses
14 Cattle
54 Sheep
$2\frac{2}{3}$ Pigs
} to every 100 acres.

If these varied types of livestock be reduced to the equivalent of sheep, then the land has been carrying approximately $1\frac{1}{4}$ sheep equivalents to the acre; or, to put it in another way, 1 cattle unit has required 3 acres.

Since the proportion of grass is roughly two-thirds of the total farm area, one may say that approximately there have been 2 sheep units to every acre of grassland, or 1 cattle unit has required 2 acres of grazing.

Capital. The tenants' capital invested in these farms amounted

in 1925 to £286,947 or £1,061 per 100 acres
in 1926 to £273,781 or £1,011 ,,
in 1927 to £255,390 or £936 ,,
in 1928 to £245,981 or £900 ,,

so that over the period of four years, the average monetary value has fallen by 15 per cent. per 100 acres.

An analysis of the capital into the three main divisions of livestock, produce and tillages, and implements, gives the following table:—

Year	No. of Farms	Average Capital invested in Livestock			Produce & Tillgaes			Implements		
		Total	Per 100 acres	%	Total	Per 100 acres	%	Total	Per 100 acres	%
1925	25	163820	606	57	82974	307	29	40153	148	14
1926	25	157954	583	58	77275	285	28	38552	142	14
1927	25	143374	526	56	73387	269	29	38629	142	15
1928	25	136516	500	56	61486	261	29	37979	139	15
	Average	150416	554	$56\frac{1}{4}$	76281	279	$28\frac{3}{4}$	38828	144	$14\frac{1}{2}$

*In this report the word "cattle" also includes cows and young stock.

Between 1925 and 1928 there has been a considerable decrease in the amounts invested in these three types of capital. Livestock have fallen by 18 per cent., produce by 15 per cent., and implements by 6 per cent.

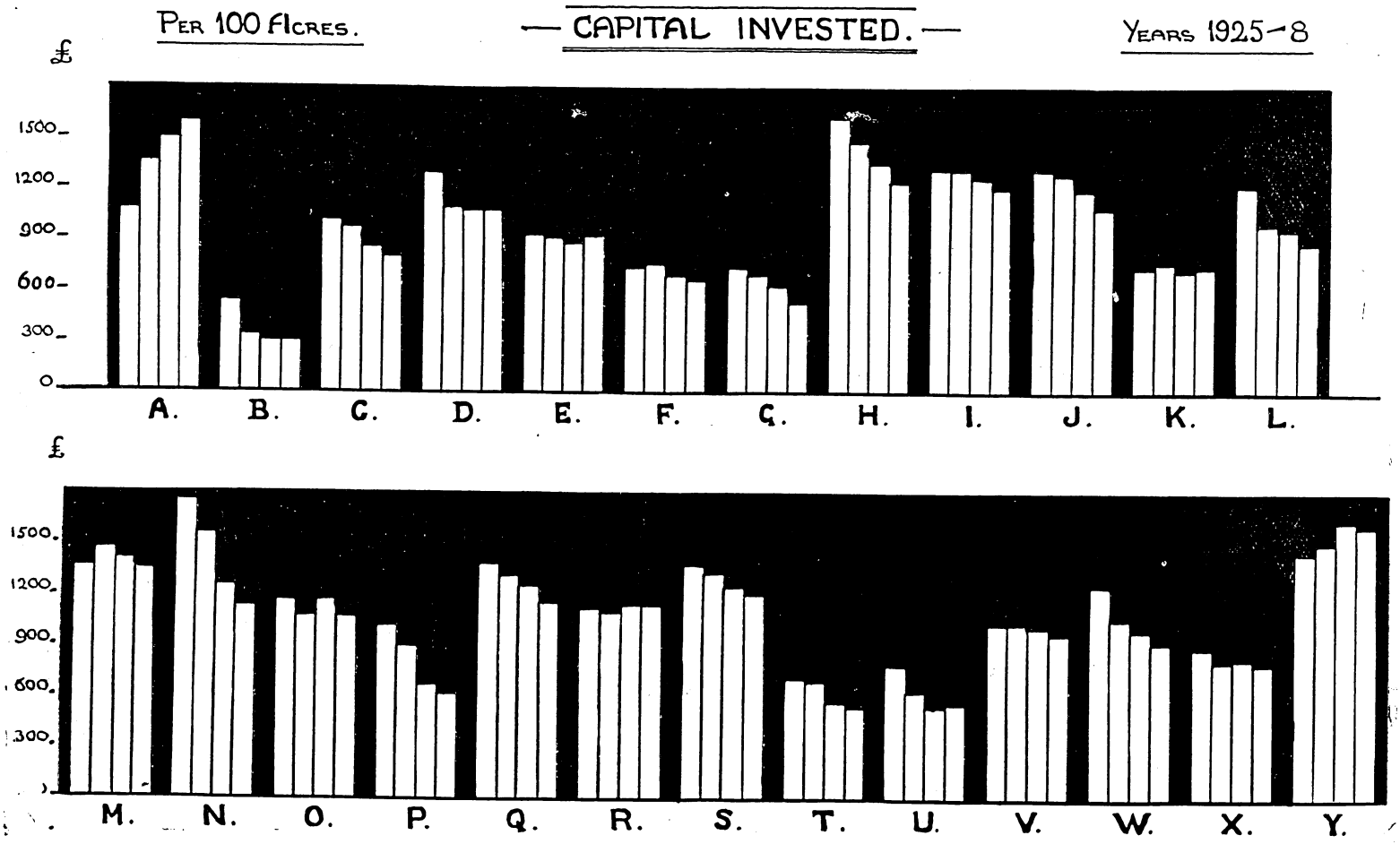
The figures in the above table giving the percentage, which each of the three classes is of the whole capital invested, show the proportions in which the farmers have distributed the capital at their command. It will be observed that although the total capital has decreased over the four years, the proportions between the three classes have been fairly well maintained.

The accompanying graph shows how the capital invested per 100 acres in each of the 25 farms has changed during each of the four years. Although one or two men have managed to increase their capital and a few have managed to maintain approximately the same amount, the majority have experienced a decrease over the four years, partly ascribable to a definite policy of writing down. The total height of the columns depends upon two factors: (1) the amount of capital at the command of the farmer and (2) the acreage of the farm.

The capital invested in livestock is spread over the four classes, namely, horses, cattle, sheep, and pigs, and in the manner indicated in the following table:—

Year	No. of Farms	Horses			Cattle			Sheep			Pigs			All livestock		
		Total £	per 100 acs. £	%	Total £	per 100 acs. £	%	Total £	per 100 acs. £	%	Total £	per 100 acs. £	%	Total £	per 100 acs. £	%
1925	25	11541	43	7.1	85233	315	52.0	64773	240	39.6	2273	8	1.3	163,820	606	100
1926	25	10788	40	6.8	88321	326	56.0	56565	209	35.9	2280	8	1.3	157,954	583	100
1927	25	10281	38	7.2	84129	309	58.8	46843	171	32.5	2121	8	1.5	143,374	526	100
1928	25	9758	36	7.2	82878	302	60.4	41871	155	31.0	2009	7	1.4	136,516	500	100
Average		10592	39	7.0	85140	314	56.7	52513	193	34.9	2171	8	1.4	150,416	554	100

The value of each type of capital invested per 100 acres shows a decline from 1925 to 1928, the greatest being in the case of sheep, which fell from £240 to £155 per 100 acres. The figures giving the percentages of the total livestock capital absorbed by any of the four classes show that horses and pigs have maintained nearly the same relative positions year by year, but that the importance of sheep has diminished, and that of cattle has correspondingly increased. The average of the four years shows that just over half (56.7 per cent.) the livestock capital is invested in cattle, and just over one-third (34.9 per cent.) in sheep. Pigs seem to occupy a very minor place on these farms, the average capital only amounting to £8 per 100 acres and only accounting for $^1/_{70}$th of the capital invested in all forms of livestock.


Per 100 Acres.
— CAPITAL INVESTED. —
Years 1925–8
£
1500
1200
900
600
300
0
A. B. C. D. E. F. G. H. I. J. K. L.
£
1500
1200
900
600
300
0
M. N. O. P. Q. R. S. T. U. V. W. X. Y.

Distribution of Capital according to percentage of Permanent Grass.

A classification of the farms according to their proportion of permanent grassland, including downland, throws into relief the way in which the investment of capital per acre decreases from the mainly arable to the mainly grass farm. This information is contained in the following table, which also gives the subdivision of the capital into livestock, produce and tillages, and implements.

Variations in Capital Investments according to Proportion of Permanent Grass.

0–30% Grass.

Year	No. of Farms	Average Acreage	Total capital per acre			Capital invested in: Livestock per acre			Produce and Tillages per acre			Implements per acre		
			£	s.	d.	£	s	d.	£	s.	d.	£	s.	d.
1925	3	802	13	6	0	7	5	0	4	6	0	1	15	0
1926	3	854	11	18	0	6	9	2	3	17	5	1	11	5
1927	3	855	11	4	0	5	19	6	3	13	4	1	11	2
1928	2	687	10	0	0	5	3	7	3	3	0	1	13	5
	Average	800	11	12	0	6	4	9	3	14	5	1	12	10

31–70% Grass.

Year	No. of Farms	Average acreage	Total capital per acre			Capital invested in: Livestock per acre			Produce and Tillages per acre			Implements per acre		
			£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1925	14	1116	11	9	0	5	19	6	3	14	8	1	14	10
1926	13	1116	10	13	2	5	13	2	3	11	2	1	8	10
1927	13	1110	10	0	0	5	3	2	3	8	0	1	8	10
1928	14	1123	9	11	0	4	16	0	3	7	2	1	7	10
	Average	1116	10	8	5	5	8	3	3	10	2	1	10	0

71–100% Grass.

Year	No. of Farms	Average acreage	Total capital per acre			Capital invested in: Livestock per acre			Produce and Tillages per acre			Implements per acre		
			£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1925	8	1114	8	8	8	5	18	8	1	11	5	0	19	0
1926	9	1112	8	16	0	5	17	5	1	11	5	1	7	2
1927	9	1143	8	0	0	5	3	7	1	9	5	1	7	0
1928	9	1138	8	0	0	5	5	4	1	7	8	1	7	0
	Average	1127	8	6	2	5	11	2	1	10	0	1	5	0

It may be remarked here that in each group for each year, the farms considered are the same, except that one or two marginal ones have, in certain years, been transferred to another group, because they have altered their acreages and included more or less grass land. These transfers do not affect (to any appreciable extent) the general findings as regards the investment of capital per acre.

Any one particular farm will naturally have its investment of capital per acre influenced by the relative amount of downland included, since this type of land requires a considerably lower amount of capital per acre than permanent pasture of the ordinary type.

Output. The total output from these farms is given in the following table for each of the four years:—

TOTAL OUTPUT FROM 25 FARMS.

	1925			1926		
	Total	per 100 acs.	%	Total	per 100 acs.	%
	£	£		£	£	
Cattle	10,215	37	5.9	7,401	27	4.5
Milk	69,384	256	39.8	74,989	278	46.2
Sheep	30,420	114	17.5	23,648	87	14.6
Pigs	7,135	26	4.1	6,064	22	3.7
Total Livestock ..	117,154	433	67.3	112,102	414	69.0
Crops	50.589	187	29.0	42,924	159	26.4
Sundry	6.363	23	3.7	7,459	27	4.6
Total Producton ..	174,106	643	100	162,485	600	100

	1927			1928			Average for 4 years		
	Total	per 100 acs.	%	Total	per 100 acs.	%	Total	per 100 acs.	%
	£	£		£	£		£	£	
Cattle	6,772	25	4.3	13,627	50	7.8	9 504	35	5.7
Milk	72,934	268	46.6	70,969	260	40 7	72,069	266	43.2
Sheep	25,968	95	16.5	34,189	125	19.6	28,556	105	17.1
Pigs	4,061	15	2.6	4,233	15	2.5	5,373	20	3.2
Total Livestock ...	109,735	403	70 .0	123,018	450	70.6	115,502	426	69.2
Crops	41,506	154	26.5	43,679	159	25.1	44,675	164	26.7
Sundry	5,596	20	3.5	7,547	28	4.3	6,741	25	4.1
Total Productian ...	156,837	577	100	174,244	637	100	166,918	615	100

The table indicates a tendency for the proportion of the output taken by "Total Livestock" to rise slightly; the proportion in 1925 being 67.3 and in 1928 70.6 per cent. Conversely, the importance of crops is diminishing, the figures being 29.0 per cent. in 1925 and 25.1 per cent. in 1928, although it must be observed that the low 1928 figures are partly due to the low prices of wheat and barley obtained in that year.

Within the livestock group there are various fluctuations over the four years. Cattle, for example, accounted for 7.8 per cent. of the total farm output in 1928 as compared with 5.9 per cent. in 1925, thus resulting in an increase of 33⅓ per cent., and, compared with the two intermediate years of 1926 and 1927, the output in 1928 was almost double. Again, this does not indicate that proportionately more animals were sold, but merely that prices in 1928 were better than in the other years.

Milk has had rather more fluctuations than one might at first expect. Its relative importance was greater by 6 per cent. in 1926 and 1927 than in 1925 and 1928.

Sales of sheep were lowest in 1926 at 14.6 per cent. and highest in 1928 at 19.6 per cent. Pigs have shown a definite fall in relative importance since 1925.

On the basis of 100 acres, the value of the output was highest in 1925 at £643 and lowest in 1927 at £577. In this latter year every item of output fell except milk, which increased from £256 to £268.

The value of the output of pigs fell in 1927 and 1928 to only £15 as compared with £26 in 1925. This fall in the value of the output may be attributed to the heavy decline in market prices rather than to any diminution in the numbers of pigs sold.

Cattle and sheep have both fallen in output in the two middle years, but for 1928 the values have been greater than in 1925.

The output of crops reached its lowest value in 1927, being then £33 per 100 acres below that of 1925. A slight recovery was made in 1928.

The average output per 100 acres for the four years varies from farm to farm, the highest production being found on farm Y with an average of £1,609 per 100 acres and the lowest on farm B with £274 per 100 acres. The former is a small farm well below 100 acres in extent and bears out the generally agreed principle that the smaller the acreage the more intensive the cultivation. Farm B increased its acreage from approximately 1,100 acres in 1925 to 1,400 in 1927 and 1928, yet for these two latter years,

its output per 100 acres has been considerably lower than that obtained in 1925 and 1926. Instances like this could be multiplied, but considerations of space forbid. The accompanying graph which gives the total output per 100 acres for each farm will be a sufficient general indication of how outputs have fluctuated during the four years. As the scale to which the graph is drawn is the same as that for the graph showing investment of capital per 100 acres, a direct comparison may be made between the two. It should be mentioned here that, as will be found later, no inference can be drawn that because a farm has a high output its profits will be high.

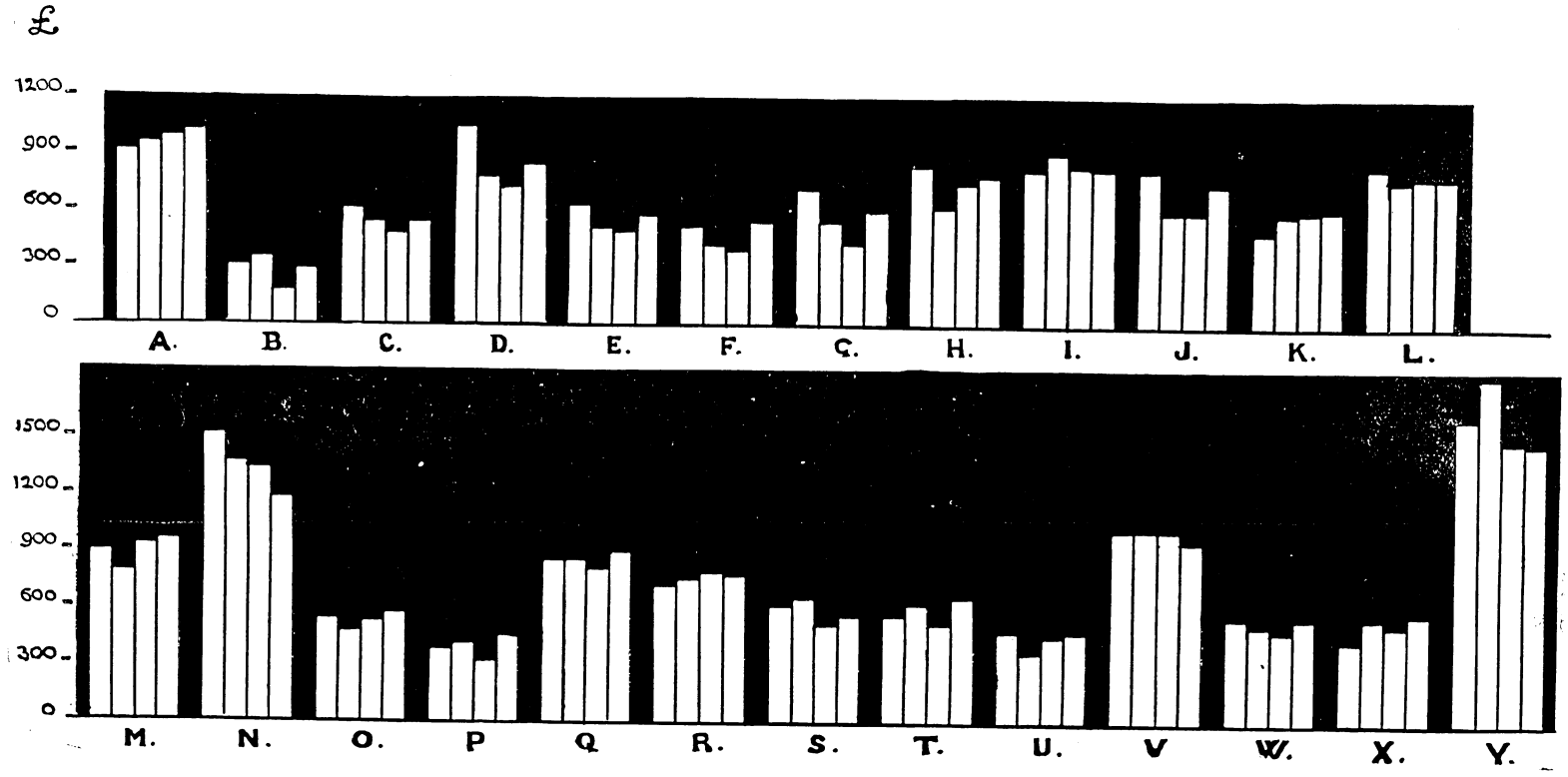
Output and Proportion of Grass. An attempt was made to ascertain whether, taking the average of the four years, there was any connection between the proportion of grass on the farm and the value of the output. The following figures must be taken with many reservations, especially as the number of farms in each group is small, and the groups do not contain the same number of farms. However, the relevant figures are:—

			Average output per 100 acres.
			£
0— 30%	Grass (including downland)	3 Farms	655
31— 70%	,, ,, ,,	13 ,,	663
71—100%	,, ,, ,,	9 ,,	550
71—100%	,, ,, ,,	*7 ,,	538

*Omitting 2 small holdings.

Capital Turnover. A comparison of the two graphs already referred to shows that the value of the output from the farms is, generally speaking, below the value of the capital invested. In other words the turnover of capital is less than unity. The following table gives for each farm and for each of the four years the factor representing output in terms of capital:—

PER 100 ACRES. — GROSS OUTPUT. — YEARS 1925-8



CAPITAL TURNOVER.

Farm Letter	1925.	1926.	1927.	1928.	Average.
A	0.82	0.69	0.65	0.62	0.695
B	0.55	0.62	0.48	0.93	0.645
C	0.57	0.53	0.54	0.63	0.567
D	0.77	0.69	0.68	0.77	0.727
E	0.64	0.54	0.53	0.70	0.600
F	0.70	0.53	0.53	0.80	0.640
G	0.95	0.74	0.64	1.09	0.855
H	0.51	0.39	0.54	0.62	0.515
I	0.61	0.68	0.65	0.67	0.652
J	0.60	0.45	0.48	0.68	0.552
K	0.64	0.74	0.79	0.79	0.740
L	0.68	0.76	0.79	0.88	0.777
M	0.64	0.53	0.65	0.69	0.627
N	0.85	0.85	1.04	1.02	0.940
O	0.45	0.42	0.43	0.50	0.450
P	0.36	0.43	0.44	0.70	0.482
Q	0.59	0.64	0.62	0.75	0.650
R	0.62	0.65	0.67	0.66	0.650
S	0.42	0.47	0.39	0.40	0.420
T	0.76	0.86	0.84	1.14	0.900
U	0.57	0.55	0.78	0.81	0.677
V	0.96	0.96	0.98	0.96	0.965
W	0.43	0.47	0.47	0.60	0.492
X	0.48	0.65	0.62	0.71	0.615
Y	1.09	1.20	0.92	0.92	1.032
Average	0.66	0.60	0.62	0.71	—

Taking all the farms together, the greatest turnover of capital was obtained in 1928 at 0.71 times. In the previous three years, the output was equivalent to only two-thirds of the capital. Only one farm turned over its capital, on the average of the four years, more than once. This was farm Y, whose average turnover was 1.03. Farm V had an average turnover of 0.96, farm N of 0.94, and farm T of 0.90. The lowest average capital turnover was obtained on farm O at 0.45.

On individual farms for individual years the lowest capital turnover was that of 0.39 in 1926 for farm H, and in 1927 for farm S. Similarly, the highest turnovers (taking those above unity) were:—

1.20	Farm	Y	Year	1926
1.14		T		1928
1.09		Y		1925
1.09		G		1928
1.04		N		1927
1.02		N		1928

It is noteworthy that farms N and Y, which are each quoted twice in the foregoing table, are below 100 acres in extent.

In the following table are given the four-yearly average outputs and capital investments for the three classes of livestock in order to show how the turnover varies according to the type of livestock.

Four-yearly Average Outputs of Cattle, Sheep and Pigs and their respective capital turnovers.

Cattle and Milk.	Capital turnover.	Sheep.	Capital turnover.	Pigs.	Capital turnover.	Total Livestock.	Capital turnover.
£		£		£		£	
81,573	0.96	28,556	0.54	5,373	2.48	115,502	0.77

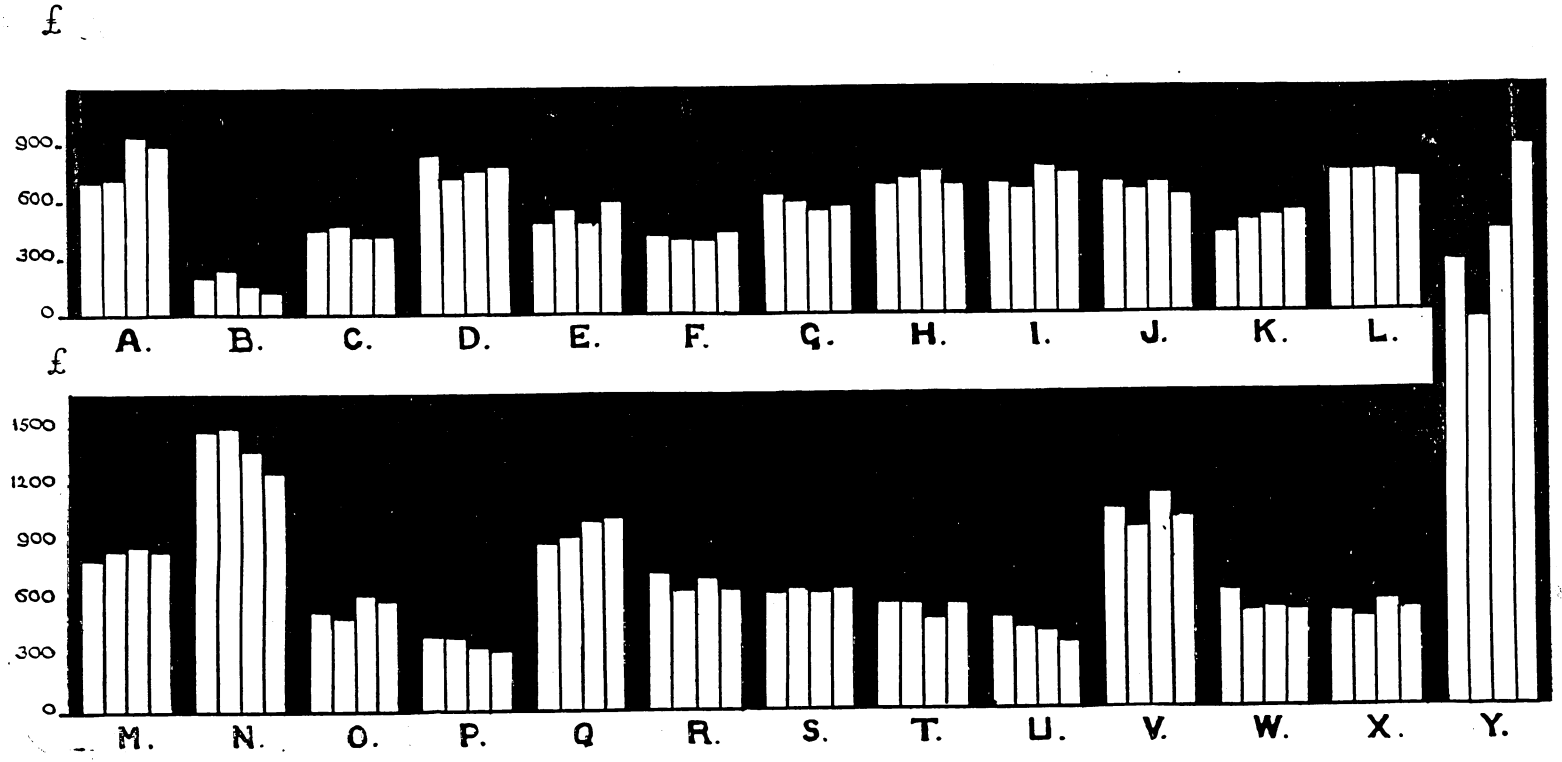
While, therefore, total livestock output gives on the average a capital turnover slightly higher than that for the total farm output (namely, 0.77 as compared with 0.71), pigs give the high turnover of $2\frac{1}{2}$ times their own capital.

This is followed by cattle and milk with an output approximately equal to their capital. Sheep give the low turnover of only half their capital.

Per 100 Acres.

— COSTS. —

Years 1925–8



Costs of Production. In each of the four years, the relation between total output and total costs is given in the following table:—

Year.	Total output from 25 farms.	Total costs of production.	Costs as percentage of output.
	£	£	%
1925 ...	174,106	163,931	94.3
1926 ...	162,485	158,526	97.5
1927 ...	156,837	165,664	105.5
1928 ...	174,244	161,491	92.6
Average ...	166,918	162,403	97.3

The figures indicate clearly the narrow margin to which the farmer has to work, the effect of a bad season, as in 1927, being to reverse the relative position of output and costs.

A comparison of costs per 100 acres between farm and farm for each of the four years may be made by looking at the accompanying graph. As this drawn to the same scale as the two previously given, a direct comparison may be made between the three.

Attention is called to the low costs of farm B and the very high costs of farm Y. The former is between 1,100 and 1,150 acres, of which nine-tenths is grassland, and most of this is downland. This farm is one which has therefore a low output as well as low costs, but it is nevertheless one which has shown considerable profits in three out of the four years and its loss in 1927 was only small. The other farm is practically a smallholding which has a higher output per 100 acres than any of the other farms, but this output is consistently and heavily overshadowed by very much higher costs, with the result that it has made a considerable loss in each of the four years. This farm is also nine-tenths grass, but there is no downland as in the previous case. The average stock carried per 100 acres on these farms was:—

	Farm B.	Farm Y.
Horses ...	1.7	7.7
Cattle ...	9.5	24.1
Sheep ...	57.8	171.0
Pigs ...	0.2	—

Costs may be divided into two parts, namely, (*a*) prime or first costs and (*b*) maintenance or overhead costs. The division is more or less arbitrary, but, generally speaking, prime costs are supposed to fluctuate with the amount of the output, since they are directly related to output or production. Such costs are wages, foodstuffs, manures and seed. Overhead costs are, to a large extent, independent of output, and rent, rates and certain miscellaneous items, such as wear and tear and depreciation of machinery come under this heading.

The proportion of total costs taken by either prime or overhead costs is given in the following table for the whole of the 25 farms.

Year.	Prime Costs.		Overhead Costs.	
	Amount.	Percentage of total costs.	Amount.	Percentage of total costs.
	£		£	
1925 ...	113,592	69.3	50,339	30.7
1926 ...	107,708	68.0	50,818	32.0
1927 ...	113,016	68.3	52,648	31.7
1928 ...	111,833	69.2	49,658	30.8
Average ...	111,537	68.7	50,866	31.3

What appears remarkable in this table is the steadiness of both prime and overhead costs, having regard to the seasons which have been experienced during these years. If, in the case of prime costs, one takes the years in which they were heaviest (1925) and lightest (1926) and compare them with the four-yearly

average, the former year is 2 per cent. above and the latter year 3.5 per cent. below, giving an extreme fluctuation about the average of only 5.5 per cent. Similarly, in the case of overhead costs the heaviest year was 1927 at 3.5 per cent. above and the lightest 1928 at 2.3 per cent. below, thus giving a range of only 5.8 per cent.

If the question of costs be linked up with the proportion of grass, in order that comparison may be made between the three divisions and with the table of output in relation to grass on page 8, the following table is the result:—

Prime, Overhead and Total Costs per 100 acres according to the Proportion of Grassland.

Four-yearly Average.

Grass	Farms	Prime	%	Overhead	%	Total	%	Total Cost as % of Output
0–30%	3	478	71.4	194	28.6	672	100	102.5%
31–70%	13	425	66.5	216	33.5	641	100	96.6
71–100%	9	386	72.1	150	27.9	536	100	97.3
71–100%	7*	362	70.3	154	29.7	516	100	96.0

If, in making a comparison between output and costs according to percentage of grass, one omits the disproportionate influence of the two small holdings which both occur in the third group, then the mainly grass farm has the greatest margin between costs and output since the former only absorb 96 per cent. of the latter. For that reason, therefore, the mainly grass farm has been, over the four years, the most profitable type.

Labour Costs. It is now proposed to examine certain of the prime and overhead costs in some detail. The cost of labour, for example, varies widely from farm to farm and from year to year.

Taking all the farms into consideration, the total amount expended in wages was—

	£
1925	50,332
1926	52,615
1927	52,275
1928	51,568
Average ...	51,698

*Omitting 2 small holdings.

or £190 per 100 acres over the four years. It will be noticed that the wage bill was lowest in 1925. In the following year there was a rise of 4½ per cent., followed by a decline in 1927 and 1928. On the average of the four years, farm Y, a smallholding, had the highest labour bill, at £624 per 100 acres. The lowest wage bill was found on farm B at £63 per 100 acres. In the former case the wage bill absorbs 38 per cent. and in the latter case 23 per cent. of the total farm output.

On the average during the four years, the labour cost amounts to 32 per cent. of the total farm costs, but this proportion varied from farm to farm and from year to year. A comparison of the labour cost according to the proportion of grassland gives the following information:—

Grass.	No. of Farms.	Labour per 100 acres.	As percentage of output.	Amount of output per £100 labour.
		£	%	£
0— 30%	3	228	33.6	298
31— 70%	13	203	30.7	326
71—100%	9	233	29.0	345
71—100%	7*	148	25.7	390

*Omitting 2 small holdings.

It will be noticed that from the point of labour cost per 100 acres, the mainly grass farm has the lightest burden (omitting the two small holdings) and the mainly arable farm has the heaviest. In other words, the mainly grass farm carries per 100 acres only 65 per cent. of the labour cost borne by the mainly arable farm.

While, as has been previously shown, the mainly arable farm has the greatest output per 100 acres, it will be seen from the above table that, relatively speaking, the labour bill is much lighter on the mainly grass than on the mainly arable farm. The former obtains an output of £390 for every £100 spent in labour, the latter only £298.

So much is heard about the heavy cost of labour on small holdings that it may be of interest to point out that the average labour bill on these two small holdings amounted to £489 per 100 acres as compared with £148, the average of the other seven farms in the mainly grass group.

Foodstuffs. The amount spent on foodstuffs is usually the largest item of expense, but it is not so much the absolute amount spent, as the relation between expenditure and returns that

matters. Therefore, in the following table are shown both the total annual expenditure on foodstuffs and the output of livestock for the 25 farms together. It will be observed that no account is taken of home-grown foods fed to stock, since this is in the nature of a transfer, no actual cash being exchanged.

Year.	Total amount spent on foodstuffs.	Percentage of livestock output.	Total output of livestock and livestock products.	Livestock output per £100 food bill.
	£		£	£
1925 ...	44,477	38	117,154	264
1926 ...	39,587	35	112,102	283
1927 ...	42,323	39	109,735	260
1928 ...	43,260	37	113,987	264

Average 42,412 = { £156 per 100 acres. } =37% 113,245 = { £418 per 100 acres. } =268

The heaviest year for foodstuffs was in 1925 when it was 4.5 per cent. above the average for the four years. The lightest bill was in 1926 at 6.7 per cent. below the average. The extreme range of fluctuation is thus 11.2 per cent. This may be compared with the output of livestock and livestock products which was greatest in 1925 and smallest in 1927 at 3½ per cent. above and 3 per cent. below the four-yearly average respectively, thus giving a range of 6½ per cent. which, it will be noticed, is considerably less than that for foodstuffs. On the average during the four years, these 25 farms obtained £268 of livestock output for every £100 spent on food.

The best individual average result over the four years is to be found on farm B, where £100 spent in foodstuffs gave an output of livestock to the value of £655. The poorest return was found on farm Y, with only £83 of output for each £100 of purchased foods. If it be objected that one does not know to what extent either of these men were feeding home-grown crops, one may relate total output to purchased foodstuffs. This method includes the output of crops, and the result is that the best farm still remains best with a total output of £1,070 for £100 spent on foodstuffs and the other farm is still the worst with a total output of £127 for each £100 so spent. The following table (page 18) gives (*a*) the livestock output and (*b*) the total output per 100 acres for an expenditure of £100 in foodstuffs. The figures are four-yearly averages and are given for each farm.

Output of (*a*) Livestock and (*b*) All produce for every £100 spent on foodstuffs.

Average of four years on a 100 acre basis.

Farm.	Livestock output per £100 food bill.	Total output per £100 food bill.
	£	£
A	214	227
B	655	1,070
C	277	580
D	262	374
E	300	405
F	374	420
G	128	355
H	338	524
I	281	407
J	171	298
K	275	472
L	322	455
M	256	376
N	358	374
O	183	292
P	270	585
Q	371	484
R	393	476
S	503	606
T	276	372
U	281	402
V	336	420
W	400	630
X	304	535
Y	83	127

Purchased Seeds and Manures. The 25 farms spent the following amounts on seeds and fertilisers:—

			£
1925	...	...	7,373
1926	...	...	6,219
1927	...	...	7,022
1928	...	...	7,023
Average			6,909 = £25.5 per 100 acres.

This item of expenditure is not a large one for it represents only 4¼ per cent. of the total expenditure.

The above are the chief items of prime cost. Of the overhead costs it is proposed to discuss the two items of rent and "other items" of maintenance, the latter being of importance, because in it are included the wear and tear and depreciation of machinery and implements.

Rent. The total rental value of all these farms is given in the following table:—

Year.	Total Rental.	Per acre.	
	£	s.	d.
1925 ...	19,704	14	7
1926 ...	19,601	14	6
1927 ...	19,533	14	4
1928 ...	18,321	13	5
Average ...	19,290	14	3 = 11.8% of the total expenditure.

Since 1925 the rental per acre has fallen from 14/7 to 13/5. The large drop in 1928 was due to one large farm making a drastic adjustment of his rental value. Assuming he had kept his rental at the same figure as in 1927, the average rent per acre in 1928 would have been 14/2 instead of 13/5.

The rental in relation to the proportion of grassland is given below. At the same time is given the proportion of the output and of the total expenditure absorbed by the rent.

Grass.	No. of Farms.	RENTAL.		
		Per acre.	As percentage of total expenditure.	As percentage of output.
		s. d.		
0— 30%	3	12 7	12.7	9.3
31— 70%	13	15 10	11.8	12.0
71—100%	7*	13 7	13.0	11.8
71—100%	9	19 2	10.8	11.9

*Omitting 2 small holdings whose rental was 36/- per acre.

Omitting the two small holdings, the mixed farm has the heaviest rental per acre, and, although the proportion of the total expenditure absorbed by the rent is lower than on either of the other two types of farms, this rent represents a greater proportion of the total output. It is true that between the mixed and the mainly grass farm there is little difference between the proportions of the total output taken by the rent, but there is a definite gap between these two types and the arable type. With such a small number

of farms it is difficult to say how much importance may be attached to this difference, but one is led to ask whether the figures indicate a greater demand for the mixed and mainly grass farm than for the mainly arable farm.

In the case of individual farms the greatest proportion of the output absorbed by rent is found on farm U at 20 per cent., while the smallest proportion is on farm I at 7 per cent. The average output over the four years amounted to £426 per 100 acres in the former case and to £843 in the latter. Both these farms are owned, so that it is not a question of whether, as tenants, they are unfairly rented, but whether the assessment for Schedule "A" needs adjustment, or, assuming the assessment to be correct, whether farm U is capable of a much greater output. Both are on light soils.

Other Items (Maintenance). Expenditure under this heading is partly in the nature of cash disbursements for many miscellaneous items, such as farm insurances, licences, market expenses, postages, stationery, telegrams, blacksmith, vet. and medicines, cash repairs to implements and to buildings; and partly of an invisible kind, such as depreciation of implements and machinery. For these reasons this item of expenditure often assumes fairly large dimensions, with the result that some farms, which would otherwise have been profitable, show a loss. There will naturally always be some expenditure under this head, but it should be the aim of every farmer to keep it down to a minimum, consistent with the efficient maintenance of the farm as a productive unit.

The average cost of these maintenance items amounted to £1 1s. 0d. per acre, or approximately to 1½ times the rent, and absorbed one-sixth of the total production.

Net Production. The term "Net Production," or "Social Output," relates to the reward an industry makes to the three partners engaged in it, namely, landowner, employer and worker. If, therefore, one subtracts from the total output of these 25 farms, all the costs incurred in obtaining that output, except those of rent and wages, the difference gives one the amount available for distribution between these three partners. The relevant figures are as follows:—

Year	Total Production	Total Costs excluding Rent & Wages	Social Output
	£	£	£
1925	174106	93895	80 211
1926	162485	86310	76 175
1927	156837	93856	62.981
1928	174244	91602	82.642
Average	166,918	91,416	75,502

This "Social Output" was lowest in 1927, when it was only 78.5 per cent. of that in 1925. Even in 1928 it was 11 per cent. below the first year.

The proportions in which the output was shared among the three partners are given in the following table:—

PER FARM.

Year	Social Output		Landlord		Tenant		Workers	
	£	%	£	%	£	%	£	%
1925	3208	100	788	24.7	405	12.7	2015	62.6
1926	3047	100	784	25.6	158	5.2	2105	69.2
1927	2519	100	781	31.0	−353	−14.0	2091	83.0
1928	3306	100	733	22.2	510	15.4	2063	62.4
Average	3020	100	771.5	25.6	180	6.0	2068.5	68.4

Probably the most striking fact emerging from this table is the extremely low share of the "social output" going to the tenant farmer. Although most of the farms now under review are owned by the occupier, it cannot be said that the rents, previously discussed, are at all high, and the fact that they are owner-occupiers does not prevent one from looking at the results of their four years of farming from a tenant's standpoint. The two middle years seem to have hit the tenant farmer rather badly. In 1927 each farmer had to find £353 out of his own pocket in order to pay his rent and wage bill. Taking the four years together the tenant obtained on the average £180 a year or £3 9s. 3d. a week. Both the proportion taken by the landlord and by the workers would have been fairly stable but for the bad year of 1927. Clearly the fluctuations due to climate or markets are borne by the tenant.

Net Profit. The net profit or loss made on all these farms for each year is given in the table below, which also shows the return upon tenants' capital, and the profit or loss per 100 acres.

Year.	Total Profit.	Return on capital.	Profit per 100 acres.	Profit per acre.
	£		£	s. d.
1925 ...	10,172	3.5%	37.6	7 6
1926 ...	3,948	1.4%	14.6	2 11
1927 ...	— 8,828	— 3.5%	— 32.4	— 6 6
1928 ...	12,753	5.5%	46.6	9 4
Average ...	4,511	1.7%	16.6	3 4

(— denotes loss).

Four years of farming have thus left the tenant farmer with the low return of $1\frac{3}{4}$ per cent. on his capital. Since interest on capital is not included as an expense in the accounts, it means that this $1\frac{3}{4}$ per cent. represents all that the farmer has to meet interest on capital and earnings of management.

Or it may be put in yet another way. Each farmer has on the average £10,489 invested in his farm. If this were invested in Government loan at 5 per cent., he would receive an income of £524 per annum. If he then hired himself out to work at 30/- per week he would receive another £78 per year, thus giving him a total income of £600 per annum.

If one relates data similar to those in the above table to the proportion of grassland on the farm, the following table is the result:—

Total Profit or Loss (—) in relation to proportion of Grassland.

Proportion of grass	No. of farms	1925	1926	1927	1928	Net Result of four years	Average per year	% on capital	Per 100 acres	Per acre
										s. d.
0–30%	3	1254	–970	–2218	399	–1535	–384	–1.45	–17.1	3 5
31–70%	13	7876	3028	–4612	6882	13174	3293	2.10	21.9	4 5
71–100%	9	1042	1890	–1998	5472	6406	1602	1.93	16.2	3 3
Total	25	10172	3948	–8828	12753	18045	4511			
71–100%	7*	1477	2175	–1333	6447	8766	2192	2.25	22.8	4.7

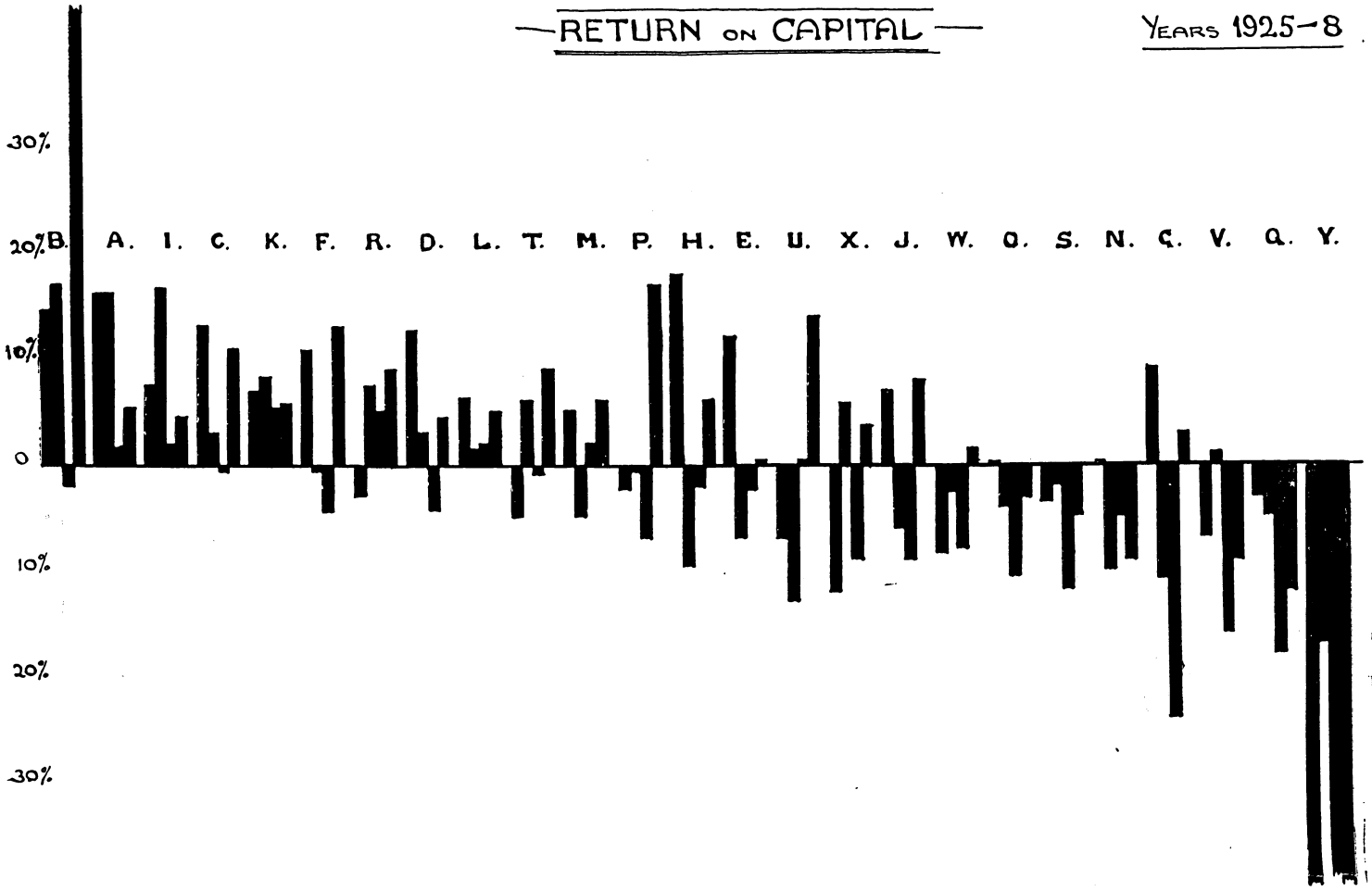
It will be observed that the year 1927 hit all three types of farming, but that the three mainly arable farms suffered more heavily than the others. These three farms have together made losses amounting to £1,535 over the four years, or £384 per annum. The return on the tenants' capital has been an average negative of 1.45 per cent. per annum, or to put it another way, the average annual loss has been 3s. 5d. per acre. The farms giving the best average return have been the mainly grass farms,* which yielded a return of $2\frac{1}{4}$ per cent. per annum upon the invested capital, equivalent to 4s. 7d. per acre. The mixed farms closely followed the grass farms as regards the return upon capital.

The following graph has been constructed in order to give a picture of how each farm has fared financially year by year. The columns above and below the base line indicate the profits and losses respectively as a return on the capital invested. This method compares the remunerativeness of various types of farming without regard to acreage. The farms are arranged from left to right in order of average profitableness over the four years.

*Omitting 2 small holdings.

RETURN ON CAPITAL

YEARS 1925–8



It will have been observed that the fluctuations from year to year and from farm to farm are considerable. For this reason one has difficulty in saying that any particular system of farming will be successful. An attempt was made, however, to see whether there were any significant differences in certain characteristics to account for the financial failure or success of these farms. Therefore, the five farms showing the highest average return upon capital have been compared with the five making the greatest losses.* The relevant data have been combined in each case and the average results given per acre. The following table is the result:—

CHARACTERISTICS of five most profitable and five most unprofitable farms (average of four years).

	5 Most Profitable Farms.				5 Most Unprofitable Farms.			
Average Size	1473 acres				902 acres			
	Total		%		Total		%	
Permanent Pasture	530		36		397		44	
Enclosed Down	457		31		36		4	
Unenclosed Down	74		5		90		10	
All Grass	1061		72		523		58	
Arable	412		28		379		42	
	Per 100 acres		Per acre		Per 100 acres		Per acre	
	£	£	£ s. d.	£ s. d.	£	£	£ s. d.	£ s. d.
Total Capital—	1000		10 0 0		1056		10 11 0	
Capital in :—								
Livestock		587		5 17 0		556		5 11 0
Produce		281		2 16 0		315		3 3 0
Implements		132		1 7 0		185		1 17 0
Total Output—	652		6 10 5		584		5 16 9	
Output of Cattle		53		0 10 7		16		0 3 2
Milk		272		2 14 5		239		2 7 9
Sheep		125		1 5 0		105		1 1 0
Pigs		15		0 3 0		10		0 2 0
All Livestock		465		4 13 0		370		3 14 0
Crops		158		1 11 7		198		1 19 7
Sundries		29		0 5 10		16		0 3 3
Total Costs—	566		5 13 3		648		6 9 7	
Cost of Labour		169		1 13 10		228		2 5 7
Foodstuffs		170		1 14 0		161		1 12 3
Manures and seed		24		0 4 10		26		0 5 3
Rent		61		0 12 3		74		0 14 9
All others		142		1 8 4		159		1 11 9
Profit	86		0 17 2					
Loss					64		0 12 10	
Profit % of Capital	8.6%							
Loss % of Capital					6.1%			

There is much that is of interest in the above table. In the first place the average size of the profitable farms is two-thirds greater than the unprofitable ones. The former have only 28 per cent. of their land under arable, the latter 42 per cent., yet the latter have proportionately more permanent pasture, while the former have more than double the proportion of downland found on the other farms.

*Omitting 2 small holdings.

It is usually considered to be a sound policy to keep the capital invested in produce, tillages and implements as low as practicable, since it is to a large extent "dead" or unproductive, and to keep the livestock capital as high as possible, because this is directly and more rapidly productive. The unprofitable farms had £5 an acre invested in produce and implements as compared with £4 3s. 0d. on the profitable farms.

When comparison is made of the output from these two kinds of farms, the profitable ones had an output 12 per cent. greater than the unprofitable and exceeded them in all classes of livestock and livestock products.

The total output of livestock from the profitable farms amounted to £465 per 100 acres, 25 per cent. greater than that of the unprofitable farms. Crops to the value of £158 and £198 per 100 acres were sold from the profitable and unprofitable farms respectively.

It is in the matter of costs of production that the trouble lies, for these are, in the case of the unprofitable farms 15 per cent. greater than the profitable ones. The greatest difference is found in the labour cost, which is £228 and £169 per 100 acres respectively. The successful farmer obtains £386 of output for every £100 of wages, the unsuccessful only £256. Rentals are 21 per cent. heavier on the unprofitable farms at 14/9 per acre instead of 12/3. As regards foodstuffs, the unprofitable farms are spending £161 and obtaining an output of livestock of £370, while the profitable farms are spending £170 and obtaining an output of £465. In the former case the farmer is obtaining £230 and in the latter £273 for every £100 of food bill. The above are the main points which make for profit or loss. Market prices for corn have undoubtedly been poor during the past year or two, but if the unsuccessful farmer is going to rely upon improvement in crop prices to cover his costs, he will need a rise of at least $33\frac{1}{3}$ per cent. Such a rise will naturally increase the profits of the already profitable farm.

In order to ascertain whether the losses were due to understocking, the following table was compiled, showing the average numbers and types of livestock carried for the four years.

	5 Most Profitable Farms.		5 Most Unprofitable Farms.	
	Per 100 acres all land.	Per 100 acres grass.	Per 100 acres all land.	Per 100 acres grass.
Horses ...	1.4	1.9	1.9	3.3
Cattle ...	15.4	21.4	11.9	20.5
Sheep ...	59.3	82.4	45.8	79.0
Pigs ...	1.7	2.3	2.0	3.4
Sheep units per 100 acres all land ...	132.4		108.7	
Acres of grazing per cattle equivalent	2.16		2.10	

In each case are given the numbers carried per 100 acres over the whole farm, grass and arable both included, and per 100 acres of grassland, omitting the arable. On these bases it is found that the successful farms were carrying 132½ and the unsuccessful 108¾ sheep units per 100 acres of all land. When, however, the arable is omitted in both cases, then the fact emerges that the unsuccessful farm is carrying slightly more livestock on the grass than the successful. In other words, the former is carrying one cattle equivalent to every 2.1, the latter one to every 2.16 acres. It must be borne in mind, however, that the former has more permanent pasture as distinct from downland, than the latter.

From the above figures it does not seem that one can blame the understocking of the farms for the losses made on the five most unprofitable farms, for the stocking is almost the same as on the profitable farms. One is, however, tempted to put the blame for the losses upon the arable land since the unprofitable farms have a considerably greater proportion of their land under cereals. This again raises the question of whether the unprofitable five would have shown better results had they fed more of their arable crops instead of selling them.

Considerations of space prevent a discussion upon the system of management on each of the 25 farms included in this report. It has only been possible to indicate the general composite results, but it is hoped that farmers interested in farm management problems, and especially those in Wiltshire, will be able to find some guidance from the data given.