Swine – Cost of production U.S.

THE NORTH OF SCOTLAND COLLEGE OF AGRICULTURE

Agricultural Economics Department

Pig Production in the North-East of Scotland

by

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CONTENTS

LISTS OF TABLES AND FIGURES

INTRODUCTION

Pig numbers in Great Britain increased steadily each year from 1950 until 1954, after which they proceeded to fall and rise periodically so that by 1959 it was clear that the pre-war pig cycle was starting all over again. This is illustrated in Figure I.

Figure I

Total Pig Numbers, United Kingdom - 4th June, 1950 to 1963

The reappearance of this phenomenon caused some concern with the result that the White Paper on the Annual Review and Determination of Guarantees 1961 stated:-

> "The Government have been anxious to devise a scheme which would rid the industry of recurrent pig cycles. They have therefore decided to introduce a flexible guarantee arrangement ..... The purpose of the new flexible guarantee for pigs is to limit the fluctuations which have bedevilled this branch of farming for so long."

These new regulations automatically adjusted the guaranteed price every three months, according to a forecast of pig certifications in a twelve month period, and also given in accordance with a laid down scale which had a maximum adjustment, up or down, of 1s. 6d. per score. As these

new regulations did not have the desired effect, further regulations were introduced in the White Paper of 1963, abolishing the limit on price variation and, at the same time, increasing the basic number. Price adjustments were now made in accordance with the following scale:-

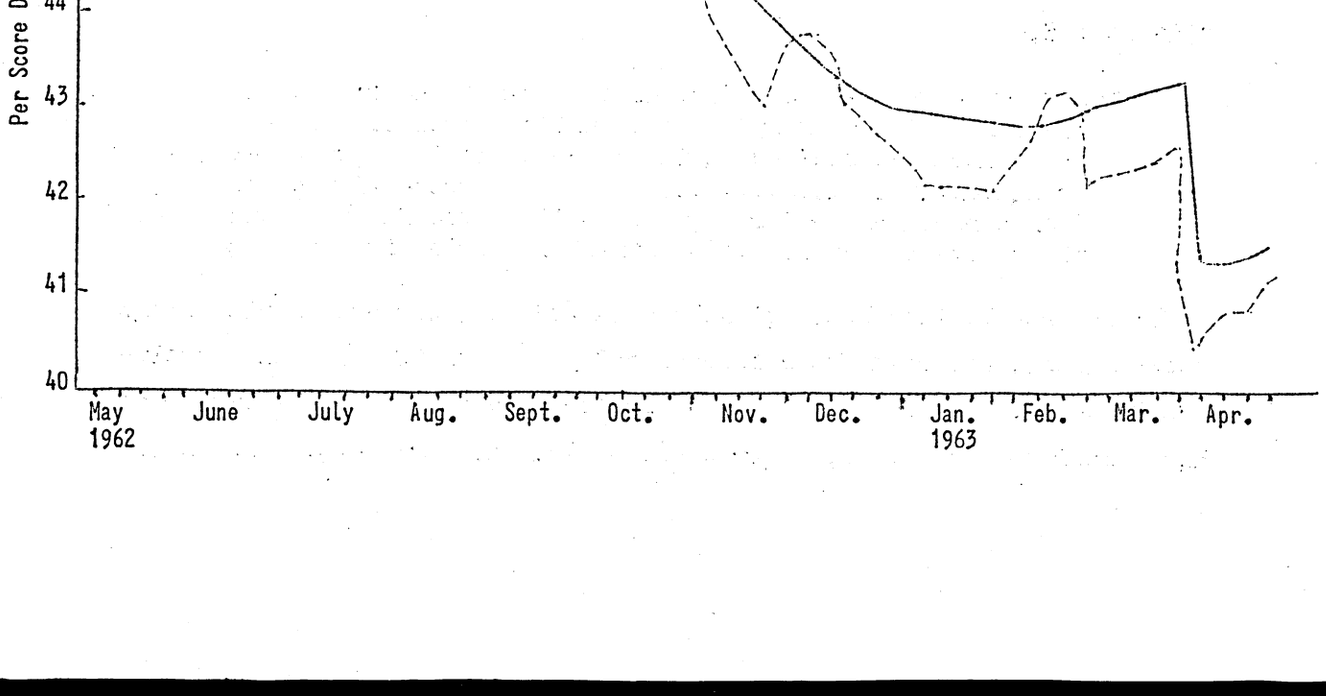
Forecast level of certifications		Adjustment to the basic guaranteed price
9.25 millions or more but less than	9.50	+ 2s. 9d.
9.50 " " " " " "	9.75	+ 2s. 0d.
9.75 " " " " " "	10.00	+ 1s. 6d.
10.00 " " " " " "	10.25	+ 1s. 0d.
10.25 " " " " " "	10.50	+ 0s. 6d.
10.50 " " " " " "	11.00	Basic guaranteed price
11.00 " " " " " "	11.25	- 0s. 6d.
11.25 " " " " " "	11.50	- 1s. 0d.
11.50 " " " " " "	11.75	- 1s. 6d.
11.75 " " " " " "	12.00	- 2s. 0d.
12.00 " " " " " "	12.25	- 2s. 9d.

There is a further adjustment of 9d., plus or minus, for each complete 0.25 million certifications at either end of the scale. At the same time the standard price continued to be linked with the price of pig feed on the basis that a difference of 1d. per cwt. in the average price of food is equivalent to a variation of 1d. per score deadweight.

The effect of these regulations on the standard price during the period of this report, May 1962 to April 1963, can be seen in Figure II.

Figure II

Standard Price and Average Returns to Producers, 1962/63



The standard price of 46s. 5d. per score deadweight at the beginning of May, 1962, rose to a maximum of 47s. 6d. some weeks later and then steadily declined, due to the rise in the number of certifications and to the fall in the price of food. The steep drop at the 1st of April, 1963, was due to the Price Review doing away with the limit of 1s. 6d. per score in the flexible guarantee.

The numbers of pigs at 4th June in the area covered by the North of Scotland College of Agriculture and in different parts of the United Kingdom are given in Table I. All these figures follow very closely the trend illustrated in Figure I, except those for Northern Ireland. Pig numbers in Northern Ireland have not followed the pig cycle and after the drop between 1954 and 1956 numbers rose continuously.

Table I

Total Pig Numbers - 4th June 1950 to 1963

Thousands

Year	College Area	Scotland	Northern Ireland	England & Wales
1950	59	251	523	2,212
1951	95	339	585	2,967
1952	129	447	676	3,840
1953	139	471	759	3,936
1954	172	553	820	4,877
1955	141	480	686	4,677
1956	120	431	653	4,389
1957	140	473	742	4,759
1958	156	496	790	5,199
1959	135	428	848	4,707
1960	128	403	985	4,337
1961	144	430	1,071*	4,579
1962	172	466	1,183*	5,074
1963	170	439	1,281*	5,272(P)

*Quarterly Economic Intelligence Summary, Pig Industry Development Authority.

(P) = Provisional

The area covered by the North of Scotland College of Agriculture from Kincardineshire northwards, contains roughly one-third of all the pigs in Scotland while the North-East counties, comprising Kincardine, Aberdeen, Banff, Moray and Nairn have approximately 90 per cent of pigs in the College area. This percentage has increased steadily from 74.3 per cent in 1954 to 88.9 per cent in 1963.

The pig numbers at 4th June for counties in the College area are given in Table II.

TABLE II

Total Pig Numbers - 4th June, 1950 to 1963 - College Area by Counties

County	Year													
	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
	Thousands													
Kincardine	5.1	8.2	10.0	11.1	14.1	12.5	10.1	12.9	13.5	11.7	12.4	14.4	16.0	16.6
Aberdeen	30.5	48.5	63.4	66.5	82.2	68.7	59.9	71.3	83.0	72.0	67.0	77.0	93.7	94.3
Banff	6.1	10.1	14.2	15.9	18.8	15.6	14.0	17.1	19.5	16.2	15.6	17.9	22.5	21.7
Moray	4.1	5.3	8.2	8.7	10.4	9.4	8.6	10.8	12.8	11.4	11.3	11.5	13.9	13.7
Nairn	0.9	1.6	1.9	2.1	2.6	2.6	2.7	3.2	3.8	4.0	3.9	4.3	5.4	5.0
Inverness	3.0	4.1	5.8	6.0	7.8	6.3	5.6	7.0	6.8	6.2	5.5	5.8	7.9	5.7
Ross	3.5	6.0	8.4	10.2	13.2	9.7	7.7	6.7	7.0	6.2	4.9	5.7	5.8	6.2
Sutherland	0.7	0.9	1.2	1.5	2.2	1.4	1.1	1.0	0.6	0.4	0.4	0.4	0.6	0.6
Caithness	2.6	4.2	5.3	5.5	7.1	4.4	2.8	2.9	2.2	1.5	1.5	1.4	1.6	1.3
Orkney	2.4	5.7	9.8	11.3	13.5	10.0	7.1	7.3	6.3	5.3	5.0	5.6	4.9	5.0
Shetland	0.1	0.2	0.3	0.4	0.5	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Total	59.0	94.8	128.5	139.2	172.4	140.8	119.9	140.4	155.7	135.0	127.6	144.1	172.4	170.2

It is interesting to note that the concentration of pigs, measured per 100 acres of arable and permanent grass, is as follows:-

College Area	9.5
Kincardine, Aberdeen) Banff, Moray, Nairn)	12.3
Scotland as a whole	10.3
England and Wales	19.5
Northern Ireland	42.3

In the College area the only breeds found in any number are Large Whites and Landrace and crosses of these. The question whether a farmer should sell pork, bacon, or heavy hogs is not a serious one, because the sale of pork is limited (pork butchers do not exist) and there is no processor within reasonable distance who handles heavy hogs. Thus the vast majority of all pigs, between 70 and 80 per cent, go to the bacon factories, the balance going to butchers. Some pigs, however, besides being processed for bacon or ham at the factories, are cut for fresh pork.

One striking feature of pig farming, in fact of all farming, is the tremendous variation in costs which occur from farm to farm and which result in losses as well as profits. If all farmers were as good as the best, then the farming industry would indeed be a flourishing one. This does not mean to say that all poor results are the fault of the farmer. Many things can occur which are beyond the scope of his management and one example of these is the persistent outbreaks of swine fever which have been occurring continually throughout the area. However, the newly initiated slaughter policy, started on 11th May, 1963, may well have some effect in the future.

TABLE III

Number of Swine Fever Outbreaks, 1959 to 1963

	1959	1960	1961	1962	1963
College Area	1	1	2	81	42
Scotland	4	3	18	242	136

Under this new slaughter policy, approximately 8,660 pigs have been slaughtered in the College area and 35,000 in Scotland as a whole in the period March 1963 up to the end of that year.

Profit is controlled by two factors: costs and income. Income is not completely outwith the producer's control as he so often maintains. The number of pigs sold per sow and the weight and quality of the carcase can make all the difference between profit and loss. The necessity of keeping down costs is self evident, but how can the farmer know what his costs are and where he stands unless he records events? Margins are small and this means that a guess or reliance on memory are not sufficient evidence on which to base management decisions.

COSTS

In Table IV are given the results of the 20 herds costed by the College during the period May, 1962 to April, 1963.

TABLE IV

Cost of Production - Percentages

	Breeding & Feeding Herds		Feeding Herds	
	Average	Range	Average	Range
	%	%	%	%
Food	82.5	74 to 92	85.4	81 to 87
Labour	8.9	5 to 14	9.4	5 to 12
Other	8.6	3 to 15	5.2	1 to 9
	100.0		100.0	

By far the largest item of cost is food. Its importance completely overwhelms all other factors so that every care should be taken in its use. Food costs are influenced by many factors - strain of pig, type of house, composition of ration, price per ton and amount of waste in feeding. This last item is often more important than would appear: 3 ozs. per pig per day on 300 pigs amounts to 9 tons or £252 per year.

One measure of efficiency in the use of food is the pig output achieved per £100 of food used and in the following table (Table V), the results for the herds under review are given.

TABLE V

Output per £100 Food

Breeding & Feeding Herds		Feeding Herds	
Average	Range	Average	Range
£	£	£	£
170	134 to 205	139	126 to 153

Home-mixed meals are generally cheaper than purchased compounds and the majority of farmers in this sample milled and mixed their own rations. In Table VI costs are given for an electrically driven hammermill and mixing plant based on various throughputs per year. Running costs consist of man labour, electricity and repairs, while overheads are calculated on the basis that a farmer would expect to see his capital outlay returned within eight years.

TABLE VI

Estimated Food Processing Costs

Hammermill, Mixer and Motor £400

Depreciation over 8 years	£50 per year
Interest 6 per cent (on ½ outlay)	12 " "
Overhead Costs	£62

	Throughput in Tons per Year			
	25	50	100	150
Overhead costs per ton	49s. 6d.	24s. 9d.	12s. 6d.	8s. 0d.
Running costs per ton	12s. 6d.	12s. 6d.	12s. 6d.	12s. 6d.
Total Cost per ton	62s. 0d.	37s. 3d.	25s. 0d.	20s. 6d.

With a small throughput the overheads per ton are high and it generally requires a minimum of a ton per week to make farm processing an economic proposition. While some farmers compound all the separate ingredients of their rations, there are quite a few who purchase a proprietary protein-mineral-vitamin mix with which to balance their hammer-milled grain. A further simplification is to use only skim milk and barley in the feeding stages. The cost of food in the sample under review, taking home grown grain at market values, averaged £27:5s. per ton with a minimum cost on one farm of £22:10s. and a maximum cost on another farm of £33:15s. This latter farm purchased all food in the form of ready mixed compounds.

Labour generally commands considerable attention from the producer because it has to be purchased in large units of one man, but actually it is of minor importance in pig production compared with food. For this reason it would seldom pay to expend large sums on buildings to save labour alone unless the farmer was on such a large scale that he could save a whole man. On the other hand, expenditure on buildings with a view to improving the conversion rate, improving the grading and reducing mortality would be a sound proposition. A 10 per cent saving in labour on a 30 sow herd would amount to only £50 whereas the same saving on food would be £400. If labour can be saved by alterations to equipment, to daily routine, or by other means, it sometimes pays to leave it in the piggery, even though it has alternative uses, so that the pigman can use his stockmanship to better advantage with a view to obtaining more pigs, fewer deaths, or preventing food waste.

Other items, which mainly comprise veterinary charges, drugs, electricity and repairs to equipment, although they are a small percentage of total costs, should not be neglected as they can mount up to a considerable sum through mismanagement.

INCOME

In the case of breeding herds one of the most important items affecting income is the number of pigs reared and sold per sow and a simple calculation will indicate the effect of this on final profit. In practically all piggeries an extra pig per litter, which for all practical purposes can be taken at two per sow per year, can be accommodated in the feeding pens without extending the buildings and without added labour, so that the extra expenses involved relate to food alone.

TABLE VII

Effect on Profit of an Extra Pig per Litter

Income from two extra bacon pigs (AA, 7½ sc.)			£32: 4: -
Extra food per litter -			
Sow ½ lb. per 1 piglet for 56 days	= 28 lbs.	-: 7: -	
Creep feed	= 36 "	-:11: -	
Food, weaning to bacon weight	= 5½ cwts.	7:14: -	
		8:12: -	
		x 2 pigs	17: 4: -
		Profit	£15: -: -

Thus for a herd of 30 sows an extra pig per litter would result in an increase in profits of £450 per annum.

Extra income from good grading is self evident. The usual difference between A and AA+ grades is 5s. per score or approximately 37s. 6d. per pig, and on top of this can be earned the "Special" or "County Quality" premium. Food would have to alter in price by £5 per ton to realise an equivalent difference.

Buyers of stores very seldom achieve as good a level of grading as farmers who breed and feed their own weaners. Table VIII gives the results in the herds under review.

TABLE VIII

Percentage of Pigs Graded in the Two Top Grades

	Breeding & Feeding Herds		Feeding Herds	
	Average	Range	Average	Range
	%	%	%	%
Two top grades (AA+, AA)	77	72 to 88	70	59 to 78

There are two possibilities to account for this difference - firstly, the change in environment and food at a time of rapid growth in the pig's life, and, secondly, the fact that the majority of weaner producers are small farmers who have not the incentive to obtain good progeny tested breeding stock. On the assumption that progeny tested boars were used, the pig industry could be assisted very considerably if A.I. was made available at a reasonable cost.

There is no doubt that in the very near future, grades will be altered because of the present unsatisfactory method of assessing fat and lean. An AA+ pig does not necessarily make good Wiltshire bacon because the present fat measurements do not estimate its depth all round the carcase, nor can they assess the percentage of lean. New methods on test are not one hundred per cent satisfactory and there would appear to be some hesitation in introducing them. So far as pedigree herds are concerned, the sooner some pronouncement is made the better for, if new characteristics are found desirable, the pedigree breeder will require time to start working towards them. Breeding is a slow process at best, but the fact that A.I. is now a practical and commercial possibility, should speed up improvement in commercial herds.

PROFITS

As costs and income both vary so widely between herds in any one year, one can also expect profits to vary in similar fashion. Results for the costed herds are given in Table IX.

TABLE IX

Profits in Breeding & Feeding Herds and in Feeding Herds

	Breeding & Feeding Herds		Feeding Herds	
	Average	Range	Average	Range
Profits:-				
Per £100 Pig Production	£28	£15 to £42	£18	£6 to £26
Per Sow	£61	£20 to £88	-	-
Per Pig Sold	-	-	£1:11s.	13s. to £2:12s.

As pig prices are relatively uniform all over the country and the problem of marketing does not affect the individual producer to any great extent, the wide range of profits brings out very clearly the different standards attained by individuals in the management of their herds. The range covered by farms in this report is given in Table X.

TABLE X

Frequency Distribution of Herds by Profit per £100 Output

Profit per £100 Output £	No. of Herds
0 to less than 5	-
5 " " " 10	2
10 " " " 15	2
15 " " " 20	3
20 " " " 25	4
25 " " " 30	4
30 " " " 35	3
35 " " " 40	1
40 " " " 45	1
Total	20

Farms showing the highest profits are not always the best when judged on the basis of different measures of efficiency: there is seldom no room for improvement.

TABLE XI

High and Low Profit Farms

	Expenditure and Profit per £100 Pig Production	
	Average two most profitable herds	Average two least profitable herds
	£	£
Food	49	67
Labour	6	6
Other	6	8
Total Cost	61	81
Profit	39	19
	100	100
Average cost of food per ton	£25:13s.	£30:14s.
Pigs weaned per sow per year	13.1	14.3
Percentage deaths - weaning to sale	2.1%	2.4%
Percentage sold as bacon	86.2%	92.5%
Average price per finished pig	£16:11s.	£17: 0s.
Output per £100 food	£202	£144
Output per £100 labour	£1,578	£1,028

The amount of food required to produce a weaner is approximately $2\frac{1}{4}$ cwts. whereas the food required from weaning to bacon weight is approximately $5\frac{1}{2}$ cwts. Thus it can be seen why the conversion rate is so important in this latter stage. It is surprising how much lip service is paid to the calculation of food conversion ratios, as few farmers go to the length of weighing all of their pigs periodically due to the amount of work involved. The conversion rate rises with age and, whereas after weaning the rate may be under 3 to 1, it increases gradually to over 4 to 1. Thus the pig can obviously make greater use of food early in its life which is the reason for feeding a dearer ration ad lib until

100 to 120 lbs. liveweight. Restricted feeding is then introduced in order to obtain a lean pig with a good grade. Conversion rates should be correlated with the price of food, the cheapest ration not necessarily being the best. The following illustration of the effect of varying conversion rates makes the importance of this factor stand out clearly.

TABLE XII

Conversion Rate - Effect on Costs and Profit

Conversion Rate	Liveweight Gain	Food Cost	Food Cost per Pig
	lbs.	cwt.	£ s.
4.0	165	28s.	8: 5
3.5	165	28s.	7: 4
Increased Profit Per Pig = £1: 1s.			

One of the most useful yardsticks that can be ascertained for any herd, keeping only the minimum of records, is the output per £100 of food. Its usefulness can be judged from Table XIII which covers the herds costed in this survey.

TABLE XIII

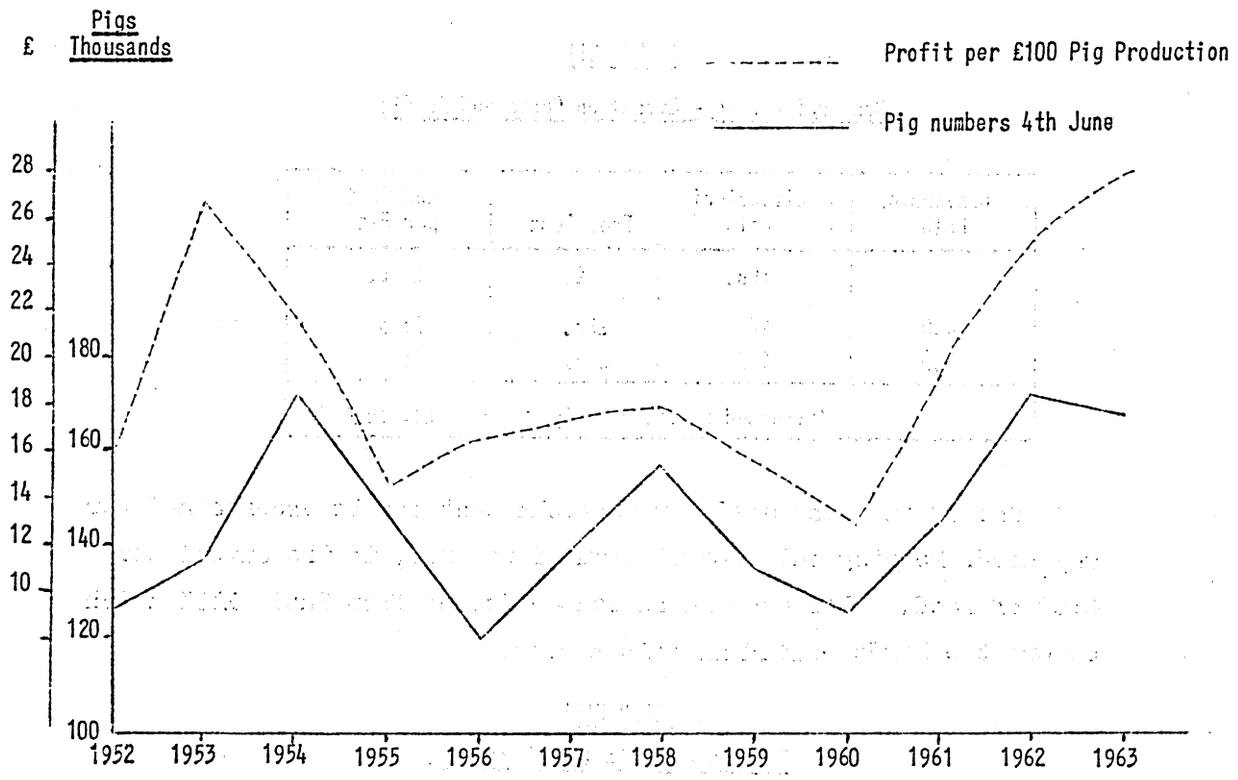
Food as an Indicator of Profit

Breeding Herds										
Farm Code No.	86	C2	G5							
Profit per £100 Output	£21	£14	£9							
Output per £100 Food	£148	£147	£129							
Breeding and Feeding Herds										
Farm Code No.	94	60	62	E103	C1	55	110	95	114	E101
Profit per £100 Output	£42	£35	£34	£34	£34	£26	£25	£20	£17	£15
Output per £100 Food	£204	£201	£190	£181	£169	£168	£161	£154	£134	£137
Feeding Herds										
Farm Code No.	112	G2	113	100	E102	F2	111			
Profit per £100 Output	£26	£25	£22	£21	£15	£13	£6			
Output per £100 Food	£153	£152	£143	£142	£128	£131	£126			

The average profit per £100 pig production on farms which bred and fed and which have been costed by the College for the past 12 years are given in Figure III along with pig numbers in the College area. The financial year ends on 30th April and the pig population figures are those on 4th June. It can be seen how the pig population and profit figures follow roughly the same pattern.

FIGURE III

Profit per £100 pig production and numbers of pigs, 4th June, 1952 to 1963



Average figures from Pig Reports published by the Agricultural Economics Department of the North of Scotland College of Agriculture for the past seven years are given in Table XIV.

TABLE XIV

North of Scotland College of Agriculture Pig Report Figures for Years 1956/57 to 1962/63

Year	Average Profit per £100 Pig Production	Average Price per Bacon Pig	Average Price Food per ton
	£ s. d.	£ s. d.	£ s. d.
1956/57	17:10: -	19:18: -	33:17: -
1957/58	17:14: -	17:13: -	29: -: -
1958/59	14:18: -	17: 8: -	27:19: -
1959/60	13:14: -	17: 1: -	27:16: -
1960/61	19:14: -	17: 5: -	26: 6: -
1961/62	25:18: -	17: 1: -	25:15: -
1962/63	28: 4: -	17: 7: -	27: 5: -

It can be seen that the trend in profit was downward for the first four years from 1956/57 after which it has steadily increased. On the other hand, the average price per bacon pig, after the drop in the second year, has tended to remain relatively steady. The price of food, however, fell each year during the period under review except during the last year, 1962/63, when it rose.

SYSTEMS

Breeding sows are usually run outside when dry, with some type of inside housing during the winter. In many cases individual feeding is being tried. Farrowing can take place inside all the year round or outside in arks, but in the latter case winter presents a problem. A compromise which is sometimes adopted is to put the arks on a concrete apron. The main factor for profitability in breeding, as already demonstrated, is the number of pigs weaned per sow per year and, to increase this, many breeders have tried the practice of weaning at 14 days. Although this has been accomplished successfully under experimental conditions, it was not so successful when tried out commericially and the practice has ceased. However, weaning at six weeks is becoming very popular, while a few breeders attempt to wean at three weeks. One farmer has weaned successfully at three weeks for some years and the records for his herd are given in Table XV. This farm adopted the practice of weaning at 14 days for the first three years shown in the table, i.e. for the years 1956/57 to 1958/59, and then changed to weaning at three weeks for the remaining four years.

TABLE XV

Early Weaning (Farm No. 62) - Figures for the period, 1956/57 to 1962/63

Year	Av. Number of Sows	No. of Pigs weaned per sow per year	Av. Price of food per ton	Av. Price received per Bacon Pig	Profit		
					Total	Per Sow	Per £100 Pig Production
			£ s.	£ s.	£	£	£
1956/57	54	15.0	37:14	19: 4	+1,852	+34	+16
1957/58	54	12.5	36: -	15: 7	- 13	-	-
1958/59	63	13.8	30:15	16: 6	- 209	- 3	- 2
1959/60	56	11.5	27:10	16:10	+1,832	+33	+16
1960/61	58	17.6	25: 7	17: -	+3,596	+62	+28
1961/62	66	20.0	24:13	17: 3	+6,316	+95	+33
1962/63	69	16.5	25:16	15:18	+6,090	+88	+34

It can be seen that, during the three years when 14 day weaning was practised, profits disappeared. The price of food per ton was high during these three years due to the high cost of sow milk substitutes, while the number of pigs weaned per sow per year tended to drop. When three weeks' weaning was substituted for weaning at 14 days in the fourth year, 1959/60, profit reappeared and became quite substantial in the last two years 1961/62 to 1962/63.

In the next table are given figures for the best herd of comparable size which practised weaning at the conventional eight weeks. No figures of profit per sow can be given for the two years, 1958/59 and 1959/60, as some young stores were purchased during this period.

TABLE XVI

Conventional Weaning (Farm No. 55) - Figures for the period, 1956/57 to 1962/63

Year	Av. Number of Sows	No. of Pigs weaned per sow per year	Av. Price of food per ton	Av. Price received per Bacon Pig	Profit		
					Total	Per Sow	Per £100 Pig Production
			£ s.	£ s.	£	£	£
1956/57	43	14.2	26:11	20:19	3,670	75	33
1957/58	51	13.7	24: 8	18:11	3,790	74	29
1958/59	54	11.5	27:16	17: 3	2,649	-	21
1959/60	71	14.8	28: 4	16: 6	1,184	-	10
1960/61	68	17.1	23:18	17: 5	4,585	68	29
1961/62	64	15.6	22: 4	16:12	4,780	75	30
1962/63	72	13.7	22:12	16:14	3,983	54	26

One of the advantages claimed for early weaning is the fact that more litters and therefore more pigs can be obtained per sow per year. In the next table are given some average figures for the above two farms for the last two years, 1961 to 1963.

TABLE XVII

Average Figures for Farms 62 and 55 for the Two Years 1961/62 and 1962/63

	Farm No. 62	Farm No. 55
	Early Weaning at 3 weeks	Conventional Weaning at 8 weeks
Average number of Sows	67	68
Litters per Sow per Year	2.2	1.8
Piglets per Litter	9.4	10.0
Piglets born per Sow per year	20.6	18.0
Piglets weaned per Sow per year	18.2	14.6
Profit per Sow	£92	£64
Output per £100 Food	£186	£171

In herds which are producing weaners for sale, food does not account for such a high percentage of costs as in the case of herds feeding from weaning to slaughter. The food required to produce an eight weeks old weaner is calculated by taking all food consumed by boars and by dry and nursing sows, adding in the creep feed, and dividing by the number of piglets weaned. On average, it amounted to $2\frac{1}{4}$ cwts.

The long continued outbreaks of swine fever with the consequent shutting down of Auction Marts has encouraged breeders and feeders to sell and buy direct. This is usually done on a weight basis with a reduced price per lb. over 40 or 50 lbs. It is possible that the development of pig groups involving breeders and feeders may encourage the practice of buying and selling direct.

Another system which is being successfully operated is that originally started by Richard Roadnight and which is generally referred to by his name. The great attraction of the Roadnight system is low labour requirements and an excellent return on capital. Here the sows are run together in a field with a small cheap ark for each sow and with a creep feeder for every 4 or 6 sows. The sows are fed on the ground with "jumbo" nuts and the creep feeders filled once or twice per week, the whole "set-up" requiring little labour and remarkably little capital. The health of the pigs is good with weaning weights above average. There are, however, technical difficulties and some producers, as with all new systems, have decided to give it up. A further difficulty could arise from the fact that farrowing takes place in Spring and Autumn and if the method became too popular the market could become flooded with weaners at two peak periods during the year.

Those who are breeding and feeding right through to bacon weight, are making a much better profit per sow (£60) than those selling weaners (£27). However, the capital investment in a piggery is heavy and if the breeder had used this money in the form of more sows and other necessary equipment, the return on capital over the year might well have been about the same.

In order to save capital on the feeding side, some producers have turned to "floor feeding" which allows for a larger number of pigs to be accommodated in a pen of a given size. However, some beginners who have adopted this practice have landed in trouble due to excessive food waste and it would appear that this system, until such time as the reasons for breakdowns are better known, is one for those who have experience. With a view to saving labour, some producers are trying ad lib feeding right through to bacon weight and in this are achieving moderate success. However, in all probability, before this system can become widespread, a new strain or cross of pig will have to be evolved.

CAPITAL AND MANAGEMENT

Capital is an important factor of production. You cannot start farming without it, let alone advance and improve your methods, and there is no doubt that modern farming has a terrific appetite for capital. It is a scarce and expensive commodity. It is easily lost and difficult to replace and therefore it should be used carefully.

In pig farming, it is not always the herd with the finest buildings which gives the greatest returns, because the main agent in profit production is management. In the case of a low level of management combined with high capital expenditure, it is doubtful if the outlay involved would be returned in the lifetime of the farmer. But many cases can be quoted of poor conditions being overcome by a combination of stock-sense and business acumen. To a certain extent, successful farmers are born and not made, but to the rank and file, greater returns

can undoubtedly accrue if they are prepared to learn. "Know-how" has been handed down and gradually built up by mankind over the years and it is the ability of the young farmer to learn and apply that knowledge with skill which makes for progress. In this modern age, this applies to business management as well as to technical skill, but, in the farming community, business methods in the past have been sadly neglected.

As almost all herds in this costings scheme have been in existence for many years, the capital involved is at a written down value, and therefore bears no relationship to original costs. Even those original figures would be low, compared with to-day's prices. New buildings and equipment can range from a simple Roadnight system at a capital cost of possibly £15 per sow up to a full scale farrowing and rearing house at £120 per pen (approximately £25 per sow). Feeding accommodation can range from a converted steading at, say, a conversion cost of £5 per pig, up to £15 per pig for a modern piggery.

FUTURE OUTLOOK

With present day legislation guaranteeing the farmer a reasonable price for a reasonable output, any drop in market prices puts a serious drain on the Exchequer. Agricultural subsidies have been increasing steadily over the years to such an extent that it is generally recognised, even amongst farmers themselves, that their incidence cannot be allowed to go on rising indefinitely. Government support to agriculture has risen from £206 million in 1955/56 to £342.6 million in 1961/62, falling slightly to £309.6 million in 1962/63, and an estimated £300.5 million in 1963/64.

Frequent cases of "dumping" of agricultural produce have aggravated the situation from time to time. In the case of bacon, unregulated imports in the past few years have caused considerable and often wide fluctuations in price so that foreign exporters have suffered as well as the British Exchequer. In an attempt to stabilise supplies and, consequently, prices, four of the largest suppliers consisting of Eire, Denmark, Holland and Sweden voluntarily agreed to meet Britain and Northern Ireland periodically round a council table and come to terms regarding supplies to the British market. Although these meetings did help to stabilise prices, only moderate success was achieved as there was always the outsider who every now and then upset the market. The most recent move by the British Government has been the establishment of a quota system for bacon imports. Under this system agreement has been reached with bacon exporting countries regarding supplies to the British market and allocations are as follows:-

Denmark	286,500 tons	47.00 per cent
United Kingdom	222,400 "	36.50 " "
Poland	48,500 "	7.95 " "
Eire	27,000 "	4.21 " "
Netherlands	13,000 "	1.75 " "
Sweden	10,300 "	1.72 " "
Yugoslavia	5,000 "	0.54 " "
Hungary	2,200 "	0.33 " "
Total	614,900 "	100.00

These figures are based on present levels and the present pattern of supply, but are not static. The Bacon Market Council, whose members consist of representatives of the exporting countries with a United Kingdom Chairman, has the power to alter allocations according to future demand and supply. The Council will also endeavour to keep supplies on an even keel and thus avoid peaks and troughs. One obvious difficulty is how to keep home supplies at the agreed level. So far the flexible guarantee system has failed to do so and if supplies continue to rise it would appear that more drastic price variation will have to be introduced at the next price review. This could mean a serious cut back in home supplies which would suggest a continuance of the pig cycle. The Ministry appears to be against any form of quota for curers or individual producers and would seem to pin its faith on the flexible guarantee system. Only time will show if this policy is justified.

CONCLUSION

Amongst any group of pig producers in which profit comparisons are made, one of the herds must be first and one last, but when the profit variations between these two extremes amounts to 300 - 400 per cent, then it must be assumed that large numbers of producers are managing their herds in an inefficient manner. The possibility of factors causing poor results being outwith the control of the farmer exists, but enquiry generally discounts this and one is left with the conclusion that faulty management is the root cause of much of the financial troubles in pig husbandry.

It has been demonstrated that the efficient management of a pig herd is almost wholly concerned with two aspects:

(i) The production of the maximum number of high grade finished pigs per sow.

(ii) The efficient conversion of food into pig meat.

Given reasonable results in respect of these two factors, a profit is assured, provided that the price received per score is also reasonable. As price is guaranteed by the Government at the annual price review for a basic output and as foreign imports are limited by the quota system, there would appear to be little to worry the efficient producer. However, there remains the question of "big business" entering and dominating the home market. The answer here probably lies in the fact that large scale animal production brings problems of its own which will take time to solve, and therefore the established pig producer should set about making himself more efficient without unduly committing himself to capital expenditure by way of expansion.

APPENDIX

Figures for Budgeting

The following figures are average results for the herds studied in this report and may be useful for those starting a pig unit or contemplating expanding an existing one. However, in the latter case, figures for the herd in question should be ascertained if at all possible.

Food per Weaner (B)*	2.25 cwts.
Food per Pig (F)*	5.4 cwts.
Food per Sow (B)	31 cwts.
Food per Sow (B & F)	104 cwts.
Labour per Sow (B)	37 hours
Labour per Sow (B & F)	69 hours
Litters per Sow per year (B)	1.8
Pigs born per Sow per year (B)	17.2
Pigs weaned per Sow per year (B)	13.8
Deaths from weaning to sale (F)	4.3%
Average deadweight of Baconers (F)	7 sc. 12 lbs.
Average percentage of Baconers grading in two top grades (AA+, AA) (F)	77.0%
Average percentage of Pigs sold as Baconers (F)	77.7%
Cost per Weaner (B)	£4:17s.
Cost per Finished Pig (F)	£13: 4s.
Income per Baconer (F)	£17: 7s.
Income per Score (Baconers) (F)	£2: 5s. 8d.

* (B) = Breeding Section and includes all costs of Boars, dry and nursing Sows and sucking Pigs.

* (F) = Feeding Section and includes all cost from weaning to sale.

Standards Used

Sales and Purchases — The purchase and sale price of pigs takes into account transport and marketing charges. Guaranteed payments are included.

Pig Production or Output — This is the value of all pigs sold, less pigs purchased, adjusted for opening and closing valuations.

Food — Purchased food is charged at purchase price delivered on the farm. Home grown food is taken at estimated market value. Costs of milling and mixing, which include the necessary labour, is added to food cost.

The following meal equivalents are used:-

5 lbs. raw potatoes	=	1 lb. meal
4 lbs. cooked potatoes	=	1 lb. meal
1 gallon skim milk	=	1¼ lbs. meal