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CENTRE FOR  
RURAL RESEARCH



**Pig Production  
2002-03**

**Andrew Sheppard**



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*SPECIAL STUDIES  
IN AGRICULTURAL ECONOMICS  
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# **PIG PRODUCTION**

**2002-03**

**ANDREW SHEPPARD**

*University of Exeter  
Centre for Rural Research  
Lafrowda House  
St German's Road  
EXETER EX4 6TL*

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## **SPECIAL STUDIES IN AGRICULTURAL ECONOMICS**

University departments of agricultural economics in England and Wales have for many years undertaken economic studies of crop and livestock enterprises, receiving financial and technical support from the Department for Environment, Food and Rural Affairs and previously the Ministry of Agriculture, Fisheries and Food. Since April 1978 this work has been supported in Wales by the Welsh Office following the transfer of responsibilities for agriculture to the Secretary of State for Wales.

The departments in different regions conduct joint studies of those enterprises in which they have a particular interest. This community of interest is recognised by issuing reports prepared and published by individual Departments in a common series entitled *Special Studies in Agricultural Economics*. Titles of recent publications in this series are given in Appendix C.

The addresses of other departments involved in the collection of data in the Special Studies Programme are given in Appendix D.



## FOREWORD

The UK pig industry has in recent years entered unfamiliar territory. Since 1998, the size of the national pig herd has undergone rapid and sustained decline. A substantial share of the home market for pork and bacon has been lost to imports. Important thresholds of technical achievement, such as 20 pigs weaned per sow per year, convincingly exceeded after many years of progressive gain, have been breached once again, but in the downward direction. A major sector of the UK farming industry, although still very significant, exhibits serious doubts about its own likely size in future. The certainties of the long post-war and post EU accession period have disappeared.

Before undertaking our latest study of the economics of pig production, we conducted a postal survey of all English agricultural holdings recording at least 20 breeding sows or 500 growing or finishing pigs in any one of three previous June Agricultural Censuses. The response was good, but more than 40 per cent of those who responded were no longer in pig production. Of those respondents who still kept pigs, large numbers told us that one of their greatest concerns for the future of their business was that returns were insufficient for them to invest with confidence for the future.

Given that profit margins in pig production, especially margin over feed, were known to have substantially recovered following the 1998 to 2000 period of very serious loss-making in UK pig production, we suspected that the continuing exodus from the industry must contain a sociological element as well as being a response to simple economics. Perhaps, in a buoyant national economy, people found pig-keeping less attractive than other readily-available forms of employment. Perhaps, as the general population moved yet further away from any experience, or even knowledge, of basic agricultural production, the people already in farming found their families, prospective girlfriends, etc., intolerant of the ties of farm livestock, unsocial working hours, dirty laundry. Or was it that farming people found caring for the sick and non-thriving pigs affected by the newly-endemic pig wasting diseases a dispiriting experience, even if doing so was actually profitable? Perplexingly, the majority of respondents to our postal survey did not rate finding and retaining suitable labour as a problem.

The full economic survey reported on here therefore served to unravel something of a mystery. By the crude basic indicators of selling prices of deadweight pigs and the relationship of those prices to the generally declining cost of feed, the year chosen for the study appeared the most favourable for profitability since 1997. Yet, on a full costing, we discovered profit margins that were generally slender, in some cases non-existent. We found that the average payment for the key cutter/bacon pigs in the survey was two pence per deadweight kilogram more than cost of production. However, deduction of a realistic charge for non-specific farm overheads, interest on working capital and payment for the farmer's management input transforms that positive figure into a loss of three to eight pence per deadweight kilogram, £2.17 to £5.79 per pig.

The technical and economic structure of pig production has changed, primarily because of disease. Our pig industry has done its best to combat both the diseases and their effects. Many adjustments have been made, but it is clear that prices have not increased by enough to cover the increased costs of producing at a lower level of technical efficiency.

The data in this report is a valuable guide to the new cost structures. As such a guide, it is one of the first and certainly one of the most detailed so far to emerge. Because our survey was a direct successor of others conducted on similar lines (most recently over the three years 1996 to 1999), it is also valuable in that detailed comparisons can be made with the former situation. A considerable amount of analysis on those lines is presented in the succeeding pages. The user of this report is at liberty to delve yet further into the very large amount of data contained in the appendices and previous reports are still available. For free downloads see our Website, <http://www.ex.ac.uk/crr>, or see Appendix C for details of how to obtain hard copies.

The conduct of this study would have been impossible without the willing co-operation of the more than 300 pig producers who so generously allowed us to use their accounts. We are most grateful to them for their every kindness. As the national co-ordinators of the study, we at Exeter are also grateful to the staff of the regional college and university centres who collected data from farms in their own localities, processed it into the agreed standard format and forwarded it to us, on time, with a high standard of accuracy and, of course, preserving the confidentiality of the data and the anonymity of the holdings concerned. We are also grateful to Defra for commissioning and financially supporting the study, and especially to members of the Farm and Animal Health Economics and other Divisions of Defra who have provided encouragement and generous contributions of their technical expertise at various stages.

The product of this very considerable joint endeavour is now freely available; we trust that all those with an interest in economic aspects of pig production will find it of use and value.

## SUMMARY

This report presents the results of a survey of the economics of pig production in the year ended 30<sup>th</sup> September 2003. The survey was part of a Special Economic Study of the economics of pig production in England commissioned and supported financially by the Department for Environment, Food and Rural Affairs (Defra), and was the latest in a long series of studies of the economics of pig production undertaken by the Universities of Exeter and Cambridge in particular, but also involving, especially in recent years, the other six English universities and colleges contributing to the present study – Reading, Nottingham, Manchester, Newcastle, Imperial College at Wye and Askham Bryan College.

The farm costing phase of the study, which involved 300 pig farms recruited from a stratified sample, was preceded by a survey of the structure of pig production in England, based on a postal questionnaire mailed to all agricultural holdings recorded as having pigs in any one of the 1998, 1999 or 2000 June Agricultural Censuses. The return date for the structure survey was 1<sup>st</sup> March 2002 and the findings of the study were used for sample design and weighting of the ultimate results of the economic survey that commenced the following October. Full results of the structure survey were published in report number 55 in the Special Economic Studies series, details can be found in Appendix C.

At all stages, the structure survey and economic survey elements of the study were conducted independently of Defra and with total confidentiality. Farmer participation in one or both elements was entirely voluntary.

The average net margin found by the study amounted to 8.8 per cent of value of output. (i.e. for every £100 value of pig produced – sale values adjusted for value of purchases, opening and closing valuations – the total cost of production was £91.20, net margin £8.80. See Appendix B for Definition of Terms.) The positive net margin in 2002-03 was in contrast to the two most recent years in which a corresponding study was undertaken, 1997-98 and 1998-99, both of which returned average losses, to the tune of 7.9 per cent in 1998-99 and 39.4 per cent in 1997-98.

Most unusually in the long history of pig studies undertaken by the universities, this latest one did not find evidence of improvement in measures of physical production efficiency. On the contrary, key factors such as litters per sow per year (Farrowing Index), pigs weaned per sow, post-weaning mortality and feed per kg of liveweight gain (Feed Conversion Ratio) were found to have taken a significant step back between 1998-99 and 2002-03. The reason for the reverses was primarily disease, in particular, but by no means exclusively, Post-weaning Multi-systemic Wasting Syndrome (PMWS) and the associated Porcine Dermatitis Nephropathy Syndrome.

Disease was given as a reason why most of the college and university centres found recruiting to the survey more difficult than for earlier pig studies. Farmers were feeling depressed about the unpleasantness and financial consequences of having disease on their farms and many doubted that they would remain in pig production beyond the short term, some already having taken and begun to implement the decision to cease. However, viable sample numbers of all herd types were successfully recruited and the final total of usable records returned to Exeter was 290.

In terms of deadweight prices paid for carcass pigs, the costing year was better than any recent period of similar length since 1997-98, and a substantial premium was maintained over corresponding prices in the home markets of our main European pigmeat competitors. The relationship of feed prices to deadweight prices was the best for very many years. Yet profitability as determined by the survey was far from outstanding and the sharp downturn in the size of the national pig herd that began in 1998 continued unabated.

Besides the profit depressing effect of widespread disease in the national pig herd, the reduction over time in the importance of the price of feed to the cost of producing a pig is highlighted. Over a period of years, feed has become cheaper in actual terms as well as relative to other costs, labour in particular, and the proportion that feed cost is of total costs has been reduced. Disease has increased veterinary, carcass disposal, disinfectant and some other costs as well as imposing lower levels of production efficiency.

The survey sample included herds of rearing and finishing pigs kept under contract (i.e. not belonging to the farmer, but to a third party) as well as breeding, breeding-finishing and finishing herds owned by the operator of the farm. The structure survey identified 16 per cent of rearing pigs and 36 per cent of finishing pigs on farms as being the property of a third party owner. The objective of the costing on contract rearing and finishing farms was to measure the costs and returns accruing to the farmer keeping the pigs, as distinct from the owner. It was found that in the 2002-03 year keeping contract pigs for another was less profitable than keeping pigs on one's own account, contract finishing returning a net margin of just 20 pence per £100 of output and contract rearing a negative net margin (a loss) of £2.10 per £100 value of output.

Farmer owned pig herds fared considerably better, finishing herds showing a net margin of £6.60 per £100 of output, breeder-finishers £9.00 and specialist breeders £9.20. That is, in that particular year farms breeding pigs captured a larger share of the total margin available (expressed as a percentage of total value of output) than farms finishing pigs. Historically, that has not always been the case, but it is noted that the trend of recent years has been towards a larger share of deadweight value accruing to the weaner producer.

Because unit values of breeding stock rose over the year by 7.4 per cent and values of trading stock by 13.4 per cent, valuation gain accounted for 42 per cent of the profit margin of the farmer owned herds. Stripping such gain out of the figures, the break-even cost of production of a bacon or cutter weight pig in the year ended 30<sup>th</sup> September 2003 was £69.49, or 96 pence per deadweight kg. Average return in that year was 98 pence per deadweight kg.

The narrowness of the margin, net of valuation gain, in a year that saw the best levels of profitability in pig production for at least five years is identified as an area for concern. That concern is deepened when account is taken of the fact that some producers contributing to the figures were postponing repairs and renewals that would become inevitable if they were to continue in production in the longer term, and others were running down their pig units in anticipation of ceasing production.

Producers wishing to calculate their own break-even price, perhaps with a view to negotiating a cost-plus contract, would wish to include items excluded from the costing reported here, i.e. general farm overheads (as distinct from those specific to the pig enterprise), interest on working capital and payment for the operator's management input. It is suggested that allowance for those items might add five to ten pence to production costs per deadweight kg, which would convert the figures recorded from profit to loss.

## 1. INTRODUCTION

From around the time of the post World War II deregulation of animal feed supplies until 1993, the economics of pig production was studied on a continuous basis by the Universities of Exeter and Cambridge and annual reports published. For the final year of that long series the University of Reading and Askham Bryan College joined the costing exercise and a single published report presented figures on the economics of pig production derived from the four regions. After a three-year break, pig costings were again taken up; on that occasion data from their own regions was contributed by all eight English Universities and Colleges undertaking agricultural economics studies for the Ministry of Agriculture, Fisheries and Food (as was, now transformed and largely absorbed into Defra, the Department for Environment, Food and Rural Affairs), extending coverage of the study to the whole of England. The new series of the study continued for three years starting in 1996-97, and in 1997-98 and 1998-99 geographic coverage was further extended to include Wales. Following another gap of three years, the eight English Universities and Colleges again took up the pig costing mantle for a single year, 2002-03, and this report is a product of that research.

As with the 1996 to 1999 series of studies, the economic phase of the most recent study was preceded by an essentially separate survey of the structure of pig production, based on a postal questionnaire mailed to all agricultural holdings recorded as having pigs in any one of several preceding June Censuses. Detailed results of the structure survey, conducted on 1<sup>st</sup> March 2002, were published by the University of Exeter's Centre for Rural Research as "The Structure of Pig Production in England"; report number 55 of the Special Studies in Agricultural Economics series. The report is available for free download on the University of Exeter's Centre for Rural Research Website, <http://www.ex.ac.uk/crr>, or see Appendix C for details of all recent publications in the series and where to obtain them.

The structure survey revealed much that would not otherwise have been known about numbers of pigs housed outdoors, numbers and types of pigs contract bred, reared or finished by farmers to whom they did not belong and, in both cases, their geographic distribution. It also highlighted changes to the ways in which pigs were kept, particularly following the 1998 ban on stalls and tethers as accommodation for non-lactating sows, and pig farmers' attitudes towards, uptake and experience of the Pig Industry Restructuring Scheme (2000-01).

The structure survey was important to the statistical design of the economic phase of the study, and in identifying pig herds representative of their type, size and regional location that might be suitable for recruiting to the sample to be costed in detail over the year from 1<sup>st</sup> October 2002 to 30<sup>th</sup> September 2003. Information derived from the structure survey was also key to the weighting of data derived from the farm costings, ensuring that weighted averages presented in this report can be relied upon as representative of pig production throughout England in the year under study.

In addition to pig numbers, ownership, housing, feeding systems, etc., the structure survey enquired into pig farmers' greatest concerns for the future of their businesses. In view of the evidence that we now have that many producers active in 2002 have since concluded that their pig production business did not have a future and have exited the industry, it is instructive to re-visit those greatest concerns. "Profit margins insufficient to invest with confidence for the future" ranked second, behind "Imported pigmeat from countries not subject to the same legislation". "The power over the industry of supermarket groups" and

“Ever tighter welfare, hygiene and other regulations” were also popular answers and, although not offered on the pro forma, disease problems, particularly Wasting Diseases, Foot and Mouth Disease and Swine Fever featured prominently in the write-in concerns and were in some cases associated with imported pigmeat.

For the most part, data presented in this report relates to the year ended 30<sup>th</sup> September 2003, the year of the full economic costing. Frequent reference is made in the text to figures established by the 1998-99 study, but the reproduction of data from that year is restricted to where it is immediately relevant to the discussion of the new results. The full data set can be found in the report on the 1998-99 costing, “Pig Production 1998-99”. That report was number 50 in the Special Studies in Agricultural Economics series and can be obtained in the same way as report number 55 referred to above, or see Appendix C.

In great contrast to the 1997-98 and 1998-99 costing years, the average net margin for 2002-03 was positive, if not by a great magnitude, at 8.8 per cent of value of output. It was also better than the positive figure of 3.1 per cent of value of output recorded in 1996-97. However, whereas the financial figures recorded by the corresponding economic surveys extending back to the 1950’s had been underpinned by consistently improving measures of production efficiency, key factors such as litters per sow per year (Farrowing Index), pigs weaned per sow, post-weaning mortality and feed per kg of liveweight gain (Feed Conversion Ratio) were seen to have taken a significant set-back between 1998-99 and 2002-03 (Table 1).

**Table 1 Outline summary of results, all non contract herds, weighted, years ended 30<sup>th</sup> September 1997, 1998, 1999 and 2003**

Year 1 <sup>st</sup> October to 30 <sup>th</sup> September		1996-97	1997-98	1998-99	2002-03
Per £100 output					
Feed	£	62.2	86.3	64.7	50.4
Other variable costs	£	5.3	8.5	7.4	8.7
Gross margin	£	32.5	5.2	27.9	40.9
Labour	£	15.8	24.1	19.4	17.6
Other fixed costs	£	13.6	20.5	16.3	14.6
Net margin	£	3.1	-39.4	-7.9	8.8
Litters per sow		2.21	2.20	2.22	2.11
Pigs weaned per sow		21.1	21.4	21.4	19.7
Post weaning mortality	%	4.6	3.6	3.8	7.1
Feed per kg liveweight gain	kg	2.40	2.48	2.45	2.52

The reason for the reverses on measures of production efficiency was primarily disease, in particular, but by no means exclusively, a new wasting disease, Post-weaning Multi-systemic Wasting Syndrome (PMWS), and the associated Porcine Dermatitis Nephropathy Syndrome. These first appeared in the national pig herd in about 1998 and have since become widespread.

Unlike the 1997-98 and 1998-99 surveys, Welsh pig farms were not included in the latest study (and were not in the 1996-97 survey), so some care is required when comparing figures from the 2002-03 survey, which are for England only, with those for England and

Wales from 1997-98 and 1998-99 (or of figures for those years with those of 1996-97). However, by 2002-03 the number of pigs in Wales relative to England was so small that the non-inclusion of Wales is unlikely to have made any practical difference to the resulting figures or conclusions drawn.

The target sample size was 300 English herds, which was the same as for each of the other recent studies. Welsh herds, when included, were an additional sample. Data was collected by each of the English university and college departments involved in the Defra Commissioned Work Programme. They were Askham Bryan College and the universities of Cambridge, Exeter, London (Imperial College at Wye), Manchester, Newcastle, Nottingham and Reading.

Pig herds recruited to the economic survey were drawn from those known from the preliminary structure survey to have had at least 20 breeding sows and/or 200 trading pigs on 1<sup>st</sup> March 2002. Most of the college and university centres found recruiting more difficult than for the earlier pig studies, not least because of the disease situation. This was not so much because pig farmers wanted to minimise the number of visitors to their holdings (undoubtedly many do, but it was readily understood that the field recorders had no need or wish to have contact with the pigs and that they would at all times observe good professional practice with respect to all aspects of disease transmission), but because they were feeling depressed about the unpleasantness and financial consequences of having disease on their farms. Many doubted that they would remain in pig production into the medium term, and some had already taken and begun to implement a decision to exit.

Some recording centres found it impossible to recruit the requisite numbers of farms of certain herd types and sizes (e.g. contract specialist rearing herds with 500 to 999 pigs), but with some substitution of size group, and occasionally of an additional Breeding-finishing farm to cover the lack of a specialist Breeder or Finisher, or a contract rearer-finisher to substitute for a contract rearer, all centres eventually recruited the target number. However, the exodus from pig production continued and some top-up recruiting was required as the survey year proceeded. Of those co-operators who dropped out of the study, virtually none did so because they had lost interest in the study as such; the reason was almost invariably a decision to cease production. Of those who did cease production, some were nevertheless good enough to fulfil their undertaking to their regional recording centre and complete the year's records where they covered the greater part of the year and were likely to be useful to the study.

Herd types identified from the structure survey as being of importance and interest to an economic survey were:-

1. Specialist breeder selling weaners/stores (non-contract)
2. Specialist rearer - weaner to store (contract)
3. Specialist finisher buying weaners/stores (non-contract)
4. Specialist finisher buying weaners/stores (contract)
5. All-through producers [Breeder-finishers] (non-contract)

The five herd types were the same as for the 1996-99 study, with the exception that the earlier study also included a small group of contract specialist breeders. The 2002 structure survey indicated that there were no longer enough such herds to form a group within the study that would be large enough to publish within the constraints of confidentiality, so

the herd type was not included in the 2002-03 survey. Even of the herd types that were included, some occur within the industry with a much greater frequency than others. Contract specialist rearers are, for instance, relatively scarce, non-contract Breeder-finishers relatively common. However, all the specified herd types were considered of interest and importance and believed to occur with sufficient frequency to make it feasible to recruit and record a group of each.

Inclusion in the survey of pigs kept under contract (i.e. not belonging to the farmer, but to a third party) was a new departure for the 1996-99 cycle of the survey. That was a success and it was determined to again include such pigs in the 2002-03 study. In March 2002 the structure survey identified 16 per cent of all rearing pigs and 36 per cent of finishing pigs on farms as being under contract to a third party owner. A smaller proportion of breeding sows, less than five per cent, were recorded as being kept under contract at that time, and, as noted above, it was concluded that it would not be practical to include them in the survey on this occasion.

The costing went ahead on contract rearing and finishing farms and was successful in meeting its objective, which was to measure the costs and returns accruing to the farmer keeping contract pigs, as distinct from those of the owner of the pigs. Specialist rearing herds proved more difficult to recruit than anticipated. That was primarily because farms understood from the structure survey to be specialist rearers proved, when contacted by a recording centre, to have developed into a rearer-finisher, or to have been on their way out of production when the “snap-shot” structure survey caught what was perhaps just a tail-end of rearing pigs.

By contrast, contract finishing herds proved more plentiful than anticipated and, as with non-contract breeder-finishers, recording centres over-delivered on that group to compensate for shortfalls on other herd types.

For each herd type, three herd sizes were defined:-

**Herd types 1 and 5 (those with breeding sows)**

- A. 20 to 99 breeding sows
- B. 100 to 299 breeding sows
- C. 300 or more breeding sows

**Herd types 2, 3 and 4 (those specialising in rearing or finishing)**

- A. 200 to 499 rearing/finishing pigs on the holding
- B. 500 to 999 rearing/finishing pigs on the holding
- C. 1,000 or more rearing/finishing pigs on the holding

The geographic spread of the herds, by size group, determined by the preliminary structure survey, was also taken into account when recruiting potential co-operators. Participation in the survey was voluntary, and not all farmers approached were able or willing to take part.

Recording centres returned to Exeter, the national co-ordinator, 312 records for the six months ended 31 March 2003 and 297 records for the six months ended 30 September 2003. The discrepancy of fifteen is accounted for by farms that went out of pigs, or cut pig numbers to the extent that they were no longer eligible for the survey. All 297 of the second half year records were matched by a record for the first half (for which the co-ordinating centre,



Exeter, if particularly grateful to the other recording centres), but a further seven nevertheless had to be excluded from the main analysis because pig numbers averaged over the year amounted to less than the 20 breeding sows or 200 rearing/finishing pigs designated as the minimum for the survey. There was some switching between production types as the year progressed, but for the most part it was possible to accommodate a herd in a different category from that to which it was recruited. Eg. Breeding-finishing instead of specialist breeding.

The final total of usable *annual* records was 290, made up as follows:-

<b>Herd type</b>	<b>Out-turn</b>	<b>Target</b>
1. Specialist breeder selling weaners/stores (non-contract)	26	64
2. Specialist rearer - weaner to store (contract)	9	15
3. Specialist finisher buying weaners/stores (non-contract)	19	31
4. Specialist finisher buying weaners/stores (contract)	98	84
5. Breeder-finishers [All-through producers] (non-contract)	138	106

The under-subscription of the first three herd types and over-subscription of breeder finishers was also a feature of the previous survey cycle. During that cycle contract specialist finishers moved from deficit to surplus, a phenomenon that was repeated in the latest study. It was of the smaller contract finishing herds that centres particularly found more than expected, in some cases because farmers had switched from finishing (or even breeding and finishing) pigs on their own account to finishing them for a third party.

Placing all geographic locations in the relevant EU Region (England East, England West and England North) and multiplying by five herd types and three herd sizes resulted in a matrix of 45 cells. Potential recruits were identified by the structure survey in 44 of the cells (the zero entry cell was herd size 1 specialist rearers in Western England) and 39 cells were filled by successfully recruited and recorded farms. Reasons for the non-filling of a further five cells would be that all potential recruits declined, were found to have gone out of production (or otherwise changed the scale or nature of production such that it no longer matched the parameters of any of the cells), or successfully recruited and recorded herds proved in the event to fall into other production or herd size cells.

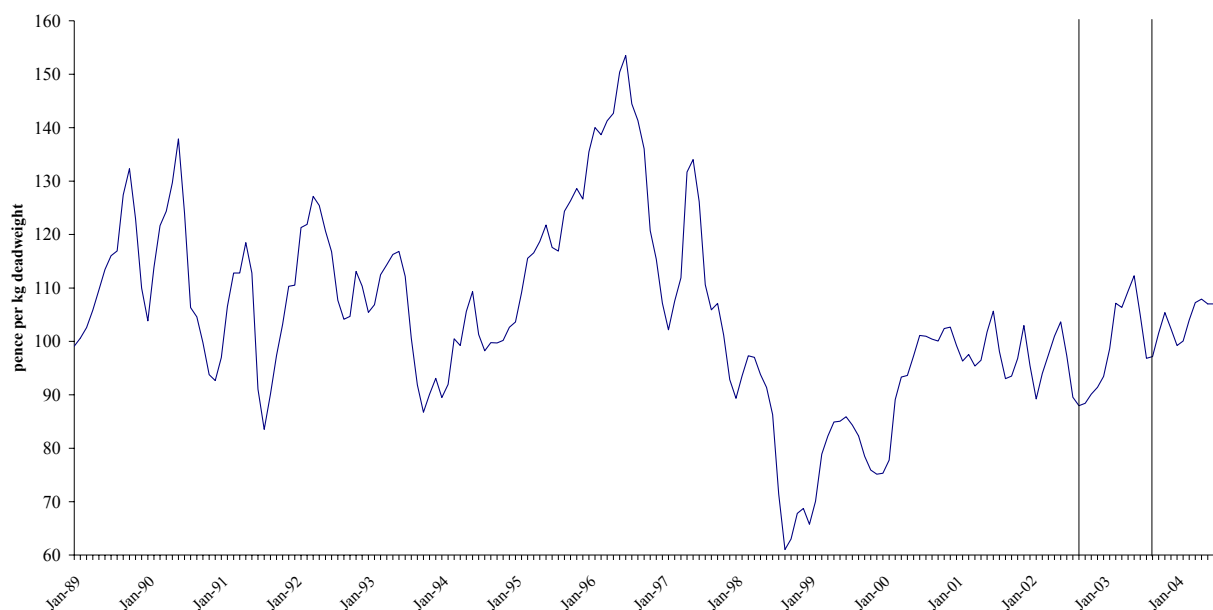
The raw data collected by the survey was weighted in accordance with the model established by the structure survey. Estimates were then made of the total picture in England as it relates to the herd types studied.



## 2. THE ECONOMIC BACKGROUND

The starting point for any consideration of the profitability of pig production is usually prices. Figure 1, below, illustrates changes in Deadweight Average Pig Price (DAPP) and its predecessors since January 1989<sup>1</sup>. From that chart, it is seen that the year ended 30<sup>th</sup> September 2003, marked by the vertical lines, opened with deadweight prices paid for carcass pigs that were lower than at any point since February 2000, but rose to a high point (June 2003, 112.3 pence) that was better than any since July 1997, before declining again to 96.8 pence in August 2003. Overall, the year was better than any recent period of similar length since 1997-98.

**Figure 1 Deadweight Average Pig Price (DAPP), monthly, January 1989 to July 2004**



Deadweight returns are, however, less than half the profitability equation in pig production. Costs and production efficiency both also play an important part and both are also subject to change over time. Feed cost is the largest and most important element in the cost of producing a pig, so the ratio of pig price to feed price is a useful, if crude, “rule of thumb” first measure of changes in profitability, if not actual profitability.

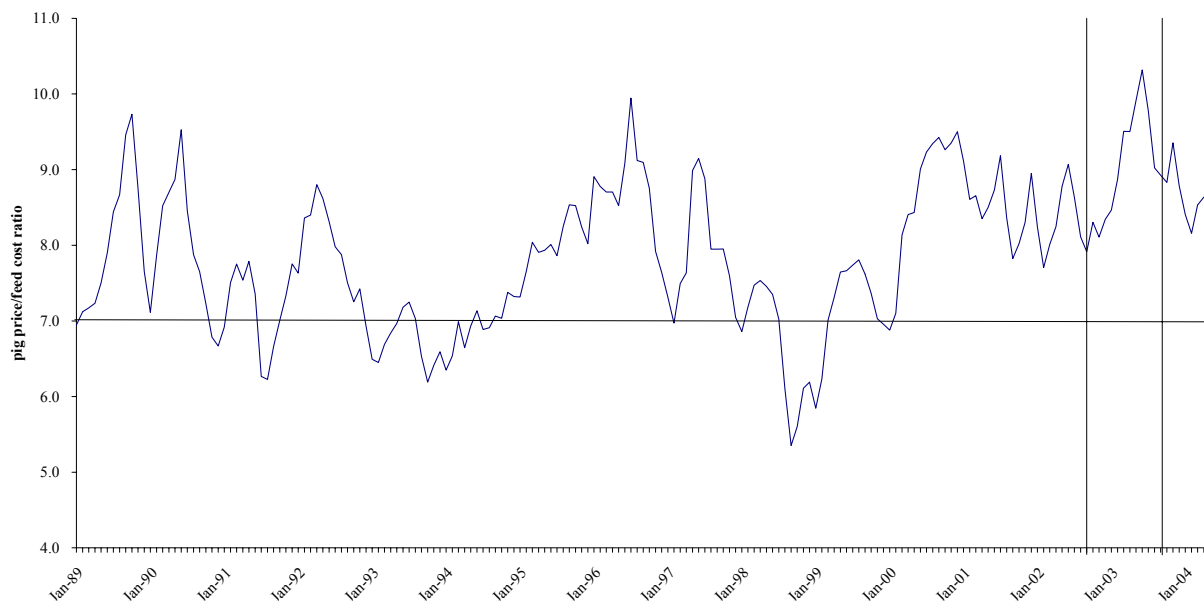
Figure 2 illustrates change in the relationship between pig prices and feed cost over the period from 1989 to the present. (The calculation is based on the return per deadweight kg in pence, divided by the cost of a typical finishing ration, also expressed in pence per kg.) As we see, in terms of that relationship, 2002-03 was the best year on the chart. That being the case, pig producers, who were generally far from excited about their profits in 2002-03, will immediately want to view this measure with considerable caution.

<sup>1</sup> Deadweight Average Pig Price is the latest in a succession of slightly differently defined indices computed to reflect pig prices and their movements over time. Figure 1 and the succeeding charts depicting data derived from the DAPP should be interpreted with care, bearing in mind the changes in definition (and name) of the index over the period that they illustrate. The broad impression of price trends and movements conveyed by the charts is, however, valid.

Over the past five years, two important changes in the economics of pig production have impacted on the usefulness of the pig price:feed cost ratio as a measure, however crude, of profitability. One is the continuation of a process that was already well established – the reduction over time of the importance of the price of feed to the cost of producing a pig. Feed has become cheaper, especially relative to other costs – labour in particular. The other, which is new since the collapse of pig prices in 1997-98, is the effect of widespread disease in the national pig herd in reversing earlier gains in production efficiency, as well as increasing veterinary, carcass disposal, disinfectant and some other costs.

According to the results of this survey, numbers of pigs weaned per sow per year declined by eight per cent between 1998-99 and 2002-03 and feed conversion rates of feeding pigs by three per cent. This change in the underlying arithmetic of production has moved costs upwards just as surely as the sharp increases in input prices (usually the cereal or protein element of feed, sometimes both) that were more familiar in the past. For the greater part of 50 years pig production was characterised by steadily improving physical performance levels; a reversal on those measures was an entirely new experience for virtually everyone in the industry.

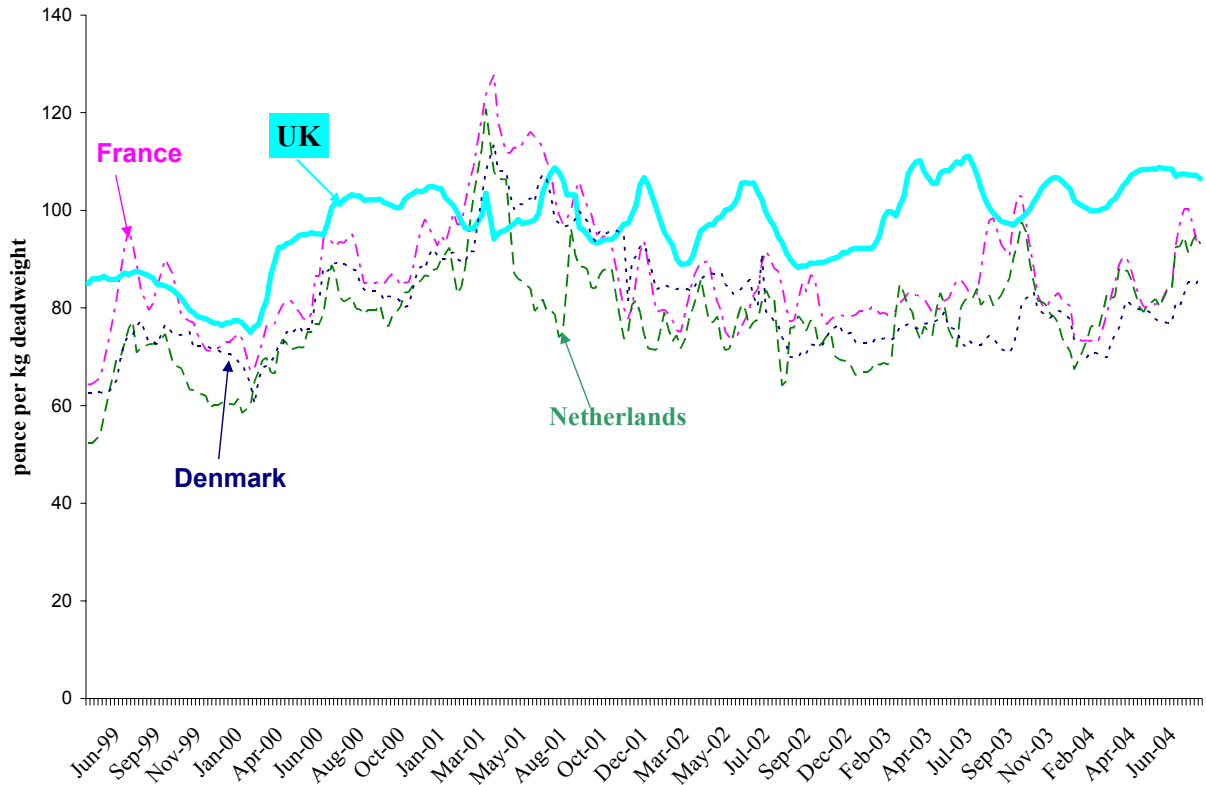
**Figure 2 Profitability of pig production – pig price/feed cost ratio, 1989 to 2004**



If pig prices in the UK have not in recent years been as high as they needed to be to maintain an industry of a certain size (or even to stabilise a rapidly declining industry), it is not that they were low relative to our main European competitors. Figure 3 demonstrates that, but for a relatively short period in 2001, UK pig prices have for the most part ridden well clear of the cluster of prices recorded in France, Denmark and the Netherlands.

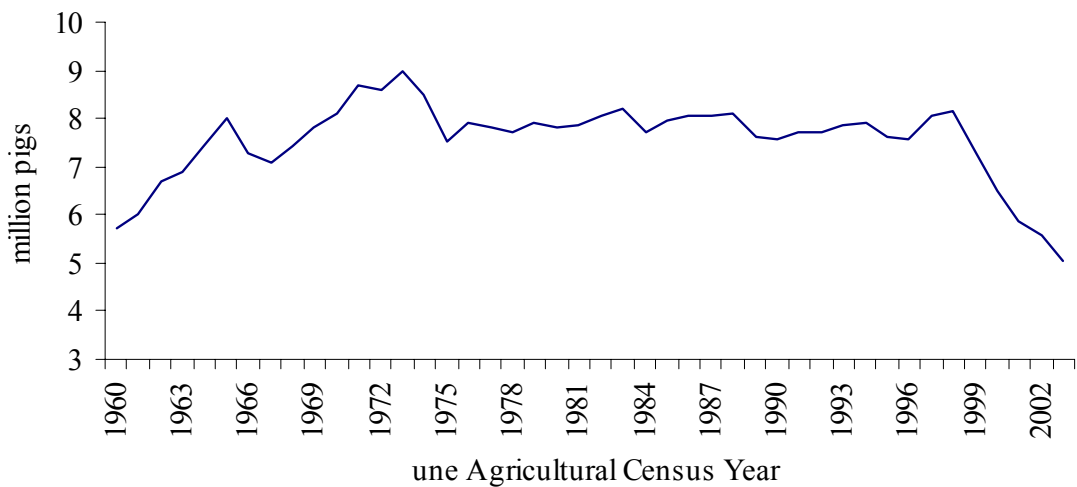
The availability of relatively cheap pigmeat from Europe will have prevented UK pig prices from rising as high as they might otherwise have done, but clearly it is possible for the UK product to command a substantial premium on its home market over pigmeat available from close European neighbours.

**Figure 3 Pig prices, April 1999 to July 2004, in the UK and three other major EU pig producing countries**



Production costs in other countries represented here are not necessarily as great as in the UK (on the best available evidence they are not) and pig production in those other countries may not have been quite so badly affected by disease, but it is known that they too have been under price pressures for some years. Nevertheless, their national pig herds have not contracted in the way that the UK pig herd has.

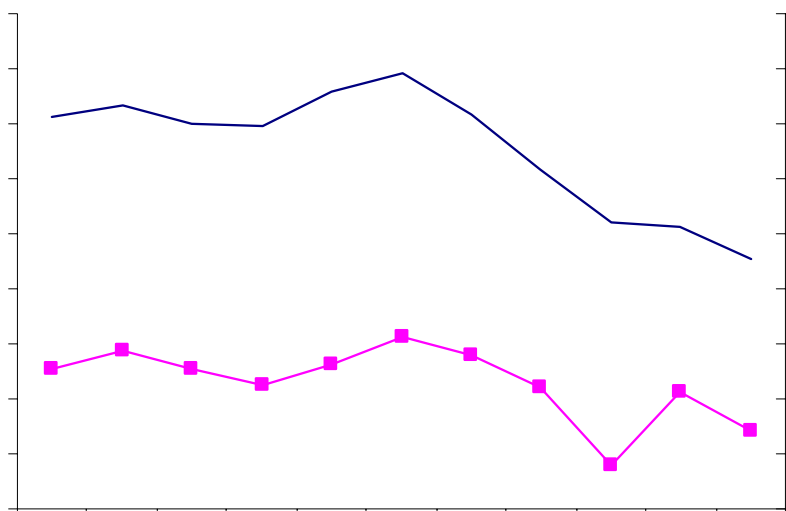
**Figure 4 UK pig population, June 1960 to June 2003**



By June 2003 the UK pig population was 38 per cent less than one year earlier and 38 per cent less than in 1998 (44 per cent less than the 1973

post war peak of 9.0 million). Those figures, which since 2002 have rendered the national pig herd smaller than at any time since 1960, are nothing short of shocking. Slaughter statistics (Figure 5), published on a more frequent basis than census data, indicate that the decline continues.

**Figure 5 Annual kill, clean pigs and cull sows and boars, 1993 to 2003**



Provisional figures for calendar year 2003 indicate that the United Kingdom was 61 per cent self-sufficient in pigmeat, compared with 91 per cent in 1998 and an average of 82 per cent in the years 1990-92. Total home production was 0.99m tonnes in 1990-92, 1.14m tonnes in 1988 and 0.77m tonnes in 2003.<sup>2</sup> At 1.279 million tonnes (21.3kg per head of population), annual consumption in 2003 was not much changed from the 1998 figure of 1.287m tonnes.

Besides their concerns about whether or not they are getting a fair deal relative to their foreign competitors – and the processors and retailers who take their product forward and present it to the consumer – farmers who are involved in just one part of the pig production process, usually either breeding or finishing, naturally concern themselves with whether they are receiving a fair proportion of the total margin available on the pig.

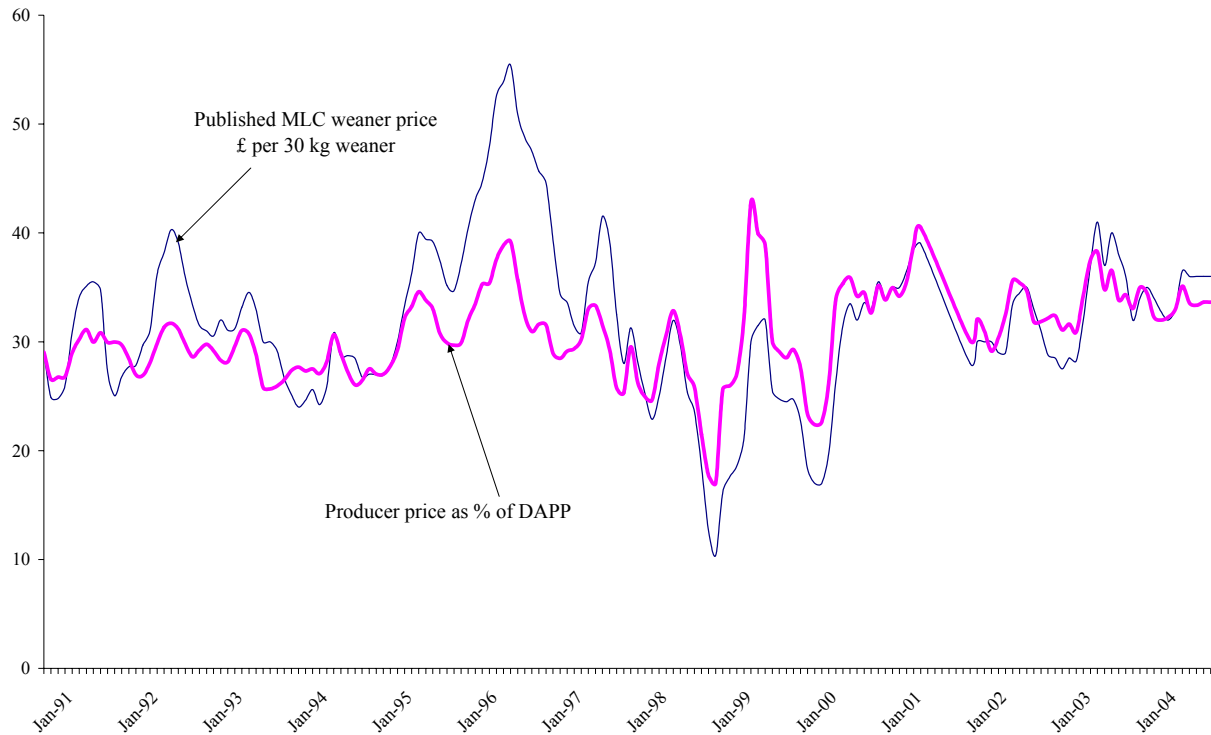
To the specialist breeder, the price offered for weaners often seems too cheap, and it appears particularly unjust when a rise in the market gives the specialist finisher a windfall gain. To the specialist finisher, the going price for weaners frequently seems expensive, and periodic downturns in the market can leave purchased pigs worth no more after several weeks' feeding than the price paid. If the total margin available on the pig has been inadequate, it is no wonder if both sides suspect that they have got the worst of it.

Schemes have long been around to bring a greater degree of equity to the division of the margin, or to smooth changes in weaner price over a period of time. However, such schemes invariably come under strain at times when the agreed formula produces a price that is significantly different from those on the open market. The price series represented in Figure

<sup>2</sup> Agriculture in the United Kingdom 2003, HMSO, Table 6.14, 2003 figures provisional

6 will do nothing to diminish the concerns of those who feel that the division of the available margin is inequitable, but it does suggest that; i) the trend since 1991 (particularly since 1998) in the proportion of DAPP accruing to the weaner producer has been of increase; and ii) the fluctuations up and down of weaner prices and those of the proportion that those prices are of DAPP has been notably more closely related in recent years. The latter effect may well be because of the breakdown of schemes to smooth prices or equalise margins. Market price reigns, it seems, particularly at, or following, a time when no-one could afford to be generous.

**Figure 6 Weaner prices and their relationship to the Deadweight Average Pig Price**







### 3. THE RESULTS OF THE SURVEY

The pig costing exercise of the year ended 30<sup>th</sup> September 2003 was a new, single-year cycle of the National Survey of the Economics of Pig Production. Its immediate predecessor was the three-year cycle of 1996 to 1999. As was the case with the 1996-99 cycle, data gathered in their own province was contributed to the survey by Askham Bryan College and the universities of Cambridge, Exeter, London (Imperial College at Wye), Manchester, Newcastle, Nottingham and Reading<sup>3</sup>. A map indicating the location of the data collection centres and the EU regions in which they are located is included in Appendix B, Definition of Terms. The numbers of herds recorded by each centre were as detailed in Table 2.

**Table 2 Number of herds recorded by each centre, by herd type**

Herd type:	1 Non- contract Breeding	2 Contract Rearing	3 Non- contract Finishing	4 Contract Finishing	5 Breeding- finishing
Askham Bryan	7	2	5	29	46
Cambridge	10	5	3	47	27
Exeter	3	1	4	4	14
London (Wye)	-	-	-	-	4
Manchester	3	1	2	6	11
Newcastle	-	-	-	2	2
Nottingham	1	-	1	4	17
Reading	2	-	4	6	17
	<b>26</b>	<b>9</b>	<b>19</b>	<b>98</b>	<b>138</b>

The data collected was weighted to produce figures that fairly represent pig production in the various regions, by the several herd types and in England as a whole. Data for weighting the figures was derived from the postal structure survey undertaken in March 2002.<sup>4</sup> The weighting process counters the effects of any regional, herd type, or herd size bias that might have occurred in the collection of the data.

Nevertheless, it should be remembered that the weighted data only sets out to represent pig herds in the “field of survey”, i.e. those conforming to the five designated herd types and with at least 20 breeding sows and/or 200 finishing pigs. Many herds do not conform to any of the designated types. That might be because they undertake a type of production not included in the survey, because their system is a mix of the defined production types, or because they are in a state of transition from one type of production to another. There are

<sup>3</sup> The University of Wales at Aberystwyth also took part in 1997-98 and 1998-99, but not in 1996-97 or 2002-03

<sup>4</sup> Published by the University of Exeter Centre for Rural Research as number 55 in this series, “The Structure of Pig Production in England”. Download free from <http://www.ex.ac.uk/crr>, or see Appendix C for details.

also many herds of less than 20 breeding sows or 200 finishing pigs (although they account for only a very small proportion of the national pig herd).

The costs and margins recorded for the various herd types are summarised in Table 3. Non-contract production was notably more profitable than contract production, with the specialist breeding herds marginally more profitable in terms of net margin per £100 of output than the breeding-finishing herds.<sup>5</sup> The least profitable form of non-contract production, Finishing, was very much more profitable than its contract counterpart. Of the two contracted activities, finishing produced a more attractive financial outcome than contract rearing, which showed a loss.

**Table 3 Costs and margins per £100 output, by herd type, weighted**

Herd type:	1	2	3	4	5
	Non- contract Breeding	Contract Rearing	Non- contract Finishing	Contract Finishing	Non- contract Breeding- finishing
	£ per £100 output				
Feed	44.6	-	53.6	-	51.5
Other variable costs	8.7	13.1	8.7	8.9	8.7
Gross margin	<u>46.7</u>	<u>86.9</u>	<u>37.7</u>	<u>91.1</u>	<u>39.8</u>
Labour	22.3	38.8	14.2	46.0	16.8
Other fixed costs	15.2	50.2	16.9	44.9	14.0
Net margin	<u>9.2</u>	<u>-2.1</u>	<u>6.6</u>	<u>0.2</u>	<u>9.0</u>

The very different cost structure between the contract and non-contract herds seen in Table 3 is because contract producers do not pay for feed, veterinary services, medicines and other drugs. In consequence, labour, building charges and other fixed costs assume a much greater proportion of total costs than they do for non-contract producers. Value of output is generally much less for contract herds than for non-contract herds. The value of output of a non-contract pig would usually be quite a large proportion of its sale value. The output value to the farmer of a contract produced pig is just the payment for keeping it. Thus the fixed cost element of keeping a contract pig is much greater, both as a proportion of output and as a proportion of total costs, than it is for a farmer owned pig.

Past surveys have by no means always found contract production less profitable than non-contract production; the 1998-99 survey, for instance, found contract herds making an average profit whilst non-contract herds made an average loss. The relative profitability of breeding and finishing also varies, in years past breeding has on occasion been markedly more profitable than finishing, and *vice versa*. The relative profitability of the different herd types depends on the relationship of the various output prices (weaners, finished pigs and per pig contract payments are the main, but by no means the only, elements) and costs (especially feed and, again, weaner prices for those herds where purchased weaners are an input).

<sup>5</sup> See Appendix B for definition of all terms, including output, fixed and variable costs, gross and net margins. Note that no allowance is made in the costings for general farm overheads (as distinct from those specific to the pig enterprise), interest on working capital, or payment for the operator's own management input.

A sharp increase in feed cost, or decrease in pig prices, both of which have immediate negative effects on the profitability of non-contract production, is of little immediate concern to contract producers. Conversely, decrease in feed cost or increase in pig price benefits the non contract producer, but not the contract producer. Increase in weaner price relative to finished pig price benefits the non-contract specialist breeder at the expense of the finisher, whilst the Breeder-finisher who neither buys nor sells weaners is unaffected. Change in feed cost, however, affects all non-contract producers, but those finishing pigs more so than those only breeding, as feed constitutes a greater part of the finisher's total costs.

However, perhaps uniquely in the long series of pig surveys in which the present one is the latest, it is not sufficient to look for reasons for changes in relative profitability only in the cost and price elements of the profitability equation. As already indicated in the Introduction, and with reference to Table 1, between the 1998-99 survey and 2002-03 there was a step change in production efficiency, and it was for the worse.

The change is largely attributable to disease, in particular Post-weaning Multi-systemic Wasting Syndrome (PMWS), and the associated Porcine Dermatitis Nephropathy Syndrome. These mostly affect finishing pigs, slashing growth rates and feed conversion efficiency and increasing mortality. The effect of other diseases, in some cases manifesting themselves in pigs already under stress from the former, and of diseases affecting reproduction and unweaned pigs must also be acknowledged.

Given that the physical productivity of the national pig herd has been reduced in this way, the economic questions are, which herd types are most affected and has the price structure adjusted to accommodate the new situation. We will bear these questions in mind as we examine some of the detailed results of the survey.

### **Breeding-finishing – non-contract – 138 herds**

- The 28 per cent increase in value of output per sow to £1,267, with feed costs that were very similar to 1998-99, made room for a very significant recovery of gross and net margins, despite a 19 per cent increase in the hourly cost of labour and a 55 per cent increase in other variable costs (Table 4, see also Appendix Tables A4 and A5).
- Pre-weaning mortality improved by six per cent, but litters per sow per year were reduced as were numbers born alive per litter, so there was an overall decline in breeding performance with 19.6 pigs weaned per sow, down seven per cent from 21.0. For the most part, the reduction in reproductive performance was attributable to endemic disease.
- Continuing a long-term trend, carcass weights increased by six per cent between 1998-99 and 2002-03, to 71.7kg, but post-weaning mortality rose from 5.1 to 9.8 per cent, whilst the amount of feed required to produce one kg of liveweight gain increased by four per cent.
- The combination of decreased numbers of pigs weaned per sow and increased post-weaning mortality resulted in a decline from 19.7 to 16.5 carcass pig equivalents<sup>6</sup> produced per sow.

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<sup>6</sup> Sales adjusted for change in valuations, weaner and other pigs sold, and any gilts or boars retained for breeding.

- Price per kg deadweight of the carcass pigs sold increased by 37 per cent from 72 to 99 pence. That was sufficient to convert a negative 8.5 per cent net margin in 1998-99 to a positive 9.0 per cent (£113 a sow), despite the effect of reductions in breeding and feeding performances.

**Table 4 Summary Breeding-finishing results compared, 1998-99 and 2002-03**

		1998-89	2002-03	% change
Average number of sows		167	186	+11
Carcass pig equivalents per sow		19.7	16.5	-8
£ per sow				
Output	£	989	1267	+28
Feed	£	655	653	-0
Other variable costs	£	71	110	+55
Gross margin	£	<u>263</u>	<u>504</u>	<u>+92</u>
Labour	£	186	212	+14
(hours)	hrs	29	28	-1
Other fixed costs	£	161	178	+1
Net margin	£	<u>-84</u>	<u>113</u>	<u>~</u>
Litters per sow		2.21	2.09	-5
Live pigs born per litter		10.9	10.7	-2
Pigs weaned per sow		21.0	19.6	-7
Pre-weaning mortality	%	13.0	12.2	-6
Post-weaning mortality	%	5.1	9.8	+92
Deadweight of carcass pig	kg	67.8	71.7	+6
Return per kg deadweight	pence	72	99	+37
Rearer/finisher feed per kg liveweight gain	kg	2.40	2.49	+4

#### **Breeding – non-contract – 26 herds**

- Improved selling prices also moved the Breeding herds from a negative net margin (10 per cent) in 1998-99 to a positive margin of similar magnitude (9.2 per cent) in 2002-03 (Table 5, see also Appendix Tables A5 and A7).
- Average herd sizes were very much increased between the two surveys, in part because the proportion of outdoor herds (which tend to be larger in size) was increased from 23 to 31 per cent. The proportion of outdoor Breeding-finishing herds in the study decreased. Besides being generally larger than indoor herds, outdoor breeding herds have a somewhat different cost structure, and expectations of breeding performance are generally lower – although the best outdoor breeding herds demonstrate that this need not necessarily be the case (see Table 10 below and Appendix Table A18). Comparison of the two survey years' results should therefore be approached with a degree of caution.
- The average pig sold was five per cent lighter at 24 kg, but sold for 34 per cent more at £29.84. However, value of output per sow increased by only 17 per cent because of smaller numbers of pigs weaned per sow (down 12 per cent to 19.7).

- Feed showed a slightly increased unit cost for sows, boars and unweaned piglets, but the reduction in total feed used, because of lighter weaner sales and less weaners sold in total, produced an overall nine per cent reduction in cost of feed per sow.
- Other variable costs were notably increased (plus 19 per cent), but the increased hourly cost of labour (plus 14 per cent) was absorbed on a per sow basis by reduced labour hours per sow (minus ten per cent).
- Litters per sow per year declined by four per cent and live pigs born per litter by six per cent. Those factors combined with a ten per cent increase in piglet mortality (to 13.1 per cent) to cut numbers weaned per sow to 19.7.

**Table 5 Summary non-contract Breeding results compared, 1998-99 and 2002-03**

		1998-89	2002-03	% change
Average number of sows		420	628	+50
£ per sow				
Output	£	495	577	+17
Feed	£	285	258	-9
Other variable costs	£	42	50	+19
Gross margin	£	<u>168</u>	<u>269</u>	<u>+60</u>
Labour	£	127	128	+0
(hours)	hrs	20	18	-10
Other fixed costs	£	90	88	-3
Net margin	£	<u>-49</u>	<u>53</u>	<u>~</u>
Litters per sow		2.24	2.15	-4
Live pigs born per litter		11.3	10.6	-6
Pigs weaned per sow		22.3	19.7	-12
Pre-weaning mortality	%	11.9	13.1	+10
Liveweight of piglets, weaners & stores sold	kg	25.3	24.0	-5
Price per pig	£	22.24	29.84	+34
Return per kg liveweight	pence	88	125	+42

#### **Finishing – non-contract – 19 herds**

- Increases in weight (plus six per cent between 1998-99 and 2002-03) and price per deadweight kg (plus 37 per cent) produced a 34 per cent increase in value of output per carcass pig equivalent (Table 6, see also Appendix Tables A8 and A9). That figure was less than it might otherwise have been because of an increase in mortality from 2.8 to 4.5 per cent (61 per cent increase), mortality being a charge made against output.
- Net margin improved from -£0.4 per pig to £2.4 per pig, or from minus 1.6 to plus 6.6 per cent of output. The corresponding 2002-03 percentage of output figures for the Breeding-finishing and Breeding herds were, respectively, 9.0 and 9.2 per cent. This suggests that the 43 per cent increase in price per kg that the finishers paid for incoming pigs (for a slightly heavier pig) transferred to the Breeders somewhat more of the total margin available on the pig than was the case in 1998-99.
- Feed, labour, other variable and fixed costs all showed significant increase on a per pig basis and labour hours per carcass pig equivalent increased, despite a 33 per cent

increase in number of pigs sold per herd. As with other herd types, cost per tonne of feed was close to the same as in 1998-99; the increased cost per pig was mainly due to the increased weights to which pigs were fed. The slight increase in quantity of feed per kg of liveweight gain could also be a result of feeding pigs to a greater weight, but increase in mortality has a depressive effect on feed conversion, so it would appear that feed conversion would have been seen to improve but for the mortality effect.

**Table 6 Summary non-contract Finishing results compared, 1998-99 and 2002-03**

		1998-89	2002-03	% change
Carcase pigs sold per herd		5,471	7,294	+33
£ per carcass pig equivalent				
Output	£	26.9	36.0	+34
Feed	£	18.0	19.3	+7
Other variable costs	£	1.8	3.1	+72
Gross margin	£	<u>7.1</u>	<u>13.6</u>	<u>+92</u>
Labour	£	3.8	5.1	+34
(hours)	hrs	0.6	0.7	+16
Other fixed costs	£	3.7	6.1	+65
Net margin	£	<u>-0.4</u>	<u>2.4</u>	<u>~</u>
Liveweight of incoming pig	kg	34.8	35.2	+1
Cost per kg liveweight	pence	77	110	+43
Percent mortality	%	2.8	4.5	+61
Deadweight of carcass pig	kg	71.7	76.1	+6
Return per kg deadweight	pence	71	97	+37
Feed per kg liveweight gain	kg	3.04	3.07	+1

#### **Rearing –contract – 9 herds**

- Losses in contract rearing herds increased between 1998-99 and 2002-03 from seven to eight pence a pig, though at 2.1 per cent the loss was a smaller proportion of a greatly increased value of output per pig (Table 7, see also Appendix Tables A12 and A13).
- A 35 per cent increase in the payment per pig was translated to a 28 per cent increase in Gross Margin after deduction of variable costs that had more than doubled. However, fixed costs that increased by 80 pence a pig (despite increase in number of pigs sold per herd from 2,679 to 9,092) more than counterbalanced the 69 pence per pig increase in gross margin and a ten pence reduction in labour cost per pig.
- The reduction in labour cost was achieved through a marked reduction in labour hours per pig, no doubt a benefit of the increased average herd size. The per hour cost of labour nevertheless increased by 21 per cent.
- The weight of incoming pigs decreased, whilst those of outgoing pigs increased, enlarging the spread between incoming and outgoing pigs from 28.1 kg to 32.9 kg. Mortality was much increased (from 1.3 to 3.8 per cent) and the quantity of feed used per kg of liveweight gain increased from 1.61 kg to 1.82 kg.

- On the evidence, payments for contract rearing pigs were not sufficient in 2002-03 to adequately reward the farmers who undertook that work. Many pig rearing and finishing contracts carry penalties for mortality and poor feed conversion. It would appear that contracts were not fully adjusted to accommodate the prevailing general level of disease. Given that disease usually arrives (or arrived) on the contract rearer's farm with the pigs supplied by the person paying for the rearing service, the fact that the pigs were sick or unthrifty could be argued to be no fault of the contractor.

**Table 7 Summary contract Rearing results compared, 1998-99 and 2002-03**

		1998-89	2002-03	% change
Store pigs sold per herd		2,679	9,092	+239
£ per store pig equivalent				
Output	£	2.71	3.66	+35
Feed	£	0.00	0.00	-
Other variable costs	£	0.22	0.48	+115
Gross margin	£	<u>2.49</u>	<u>3.18</u>	<u>+28</u>
Labour	£	1.52	1.42	-6
(hours)	hrs	0.25	0.19	-23
Other fixed costs	£	1.04	1.84	+76
Net margin	£	<u>-0.07</u>	<u>-0.08</u>	<u>-6</u>
Liveweight of incoming pig	kg	7.6	7.4	-3
Percent mortality	%	1.3	3.8	+192
Liveweight of outgoing pigs	kg	35.7	40.3	+13
Feed per kg liveweight gain	kg	1.61	1.82	+13

#### **Finishing – contract – 98 herds**

- Contract finishing herds changed their nature somewhat between 1998-99 and 2002-03, with the proportion that they were of all herds (as established by the structure survey) moving up from 22 to 28 per cent and average herd size falling. In part at least, this would be because of producers moving from finishing pigs on their own account to finishing them for a third party, in some cases as a half way stage to ceasing pig production altogether. Average number of carcass pigs produced per herd declined 23 per cent from 3,678 to 2,816.
- Output per carcass pig equivalent increased by 31 per cent, a similar percentage to increase in value of output in other herd types. However, as with the contract Rearing herds, the increase was not enough to cover increased costs. Margins were reduced from 86 pence a pig (14.6 per cent of output, the best result of the 1998-99 study) to two pence (0.2 per cent of output).
- All cost categories seen in Table 8 show significant increase (see also Appendix Tables A14 and A15). The cost per hour of labour increased by 17 per cent from £6.02 to £7.06 per hour. Smaller herd size is the most likely explanation for increased labour hours per pig produced, and possibly also for some of the increase in fixed costs.
- As with other herd types finishing pigs, carcass weights increased, in this case from 71.5 to 76.1kg. The weight of incoming weaners meanwhile decreased, further

increasing the liveweight gained whilst in the finishing unit from 37.6 to 48.1kg. Feed per kg of liveweight gain increased four per cent to 2.79kg, whilst mortality increased by a factor of more than 3.5 to 8.3 per cent.

**Table 8 Summary contract Finishing results compared, 1998-99 and 2002-03**

		1998-89	2002-03	% change
Carcase pigs sold per herd		3,678	2,816	-23
£ per carcass pig equivalent				
Output	£	5.87	7.67	+31
Feed	£	0.00	0.00	-
Other variable costs	£	0.51	0.68	+34
Gross margin	£	<u>5.36</u>	<u>6.99</u>	<u>+30</u>
Labour	£	2.12	3.53	+67
(hours)	hrs	0.35	0.50	+42
Other fixed costs	£	2.38	3.44	+45
Net margin	£	<u>0.86</u>	<u>0.02</u>	<u>-98</u>
Liveweight of incoming pig	kg	33.9	28.0	-17
Percent mortality	%	2.2	8.3	+277
Deadweight of carcass pig	kg	71.5	76.1	+6
Feed per kg liveweight gain	kg	2.69	2.79	+4

The weighted average margin of all contract herds in the 2002-03 survey was minus 0.1 per cent of value of output, an average loss (down from a relatively healthy plus 15.2 per cent of value of output in 1998-99), whilst that of non-contract herds was 8.8 per cent of value of output (up from minus 7.9 per cent in 1998-99). The relative profitability of contract and non-contract production was therefore reversed, with contract rearing looking particularly unattractive.

In 2002-03, non-contract production was the better proposition. However, a good result relative to a loss-making alternative and a loss-making earlier situation is not necessarily a good result *per se*. An unprofitable situation makes a poor benchmark. Furthermore, whether or not a weighted average net margin of 8.8 per cent is a sufficient return to encourage and finance investment for the future is debatable.

### **Premium herds**

Table 9 sets out the cost structures and margins of the top third of the three non-contract herd types. The top third, or Premium, group is selected according to net margin per £100 of output.



**Table 9 Costs and margins per £100 output, premium (top third) herds**

	Premium non- contract Breeding herds	Premium non- contract Finishing herds	Premium non- contract Breeding- finishing herds
	£ per £100 output		
Feed	39.3	47.2	49.2
Other variable costs	5.9	5.5	8.5
Gross margin	<u>54.8</u>	<u>47.3</u>	<u>42.3</u>
Labour	20.7	11.3	14.3
Other fixed costs	13.9	10.9	11.7
Net margin	<u>20.2</u>	<u>25.1</u>	<u>16.2</u>

The superior margins of the Premium herds were achieved through a combination of better breeding performance and feed conversion, greater efficiency of labour use, lower unit prices paid and higher prices received. Evidence of all of these can be seen in the tables in Appendix A. The difference between average and top third performance levels for individual measures listed in the tables tends to be small, but small gains on virtually all measures amount to significant gain in total. In tables such as Appendix Tables A6 (costs and returns for piglets, weaners and stores) and A18 (costs and returns per carcass pig), it can also be seen how an accumulation of generally lower costs per pig amounted to significant total gain. Lower costs per pig were achieved through superior production efficiency, more pigs produced, with less labour, *et cetera*.

In present circumstances, the question might arise whether there was an element of the top third herds being less affected by disease. Comparing earlier measures of pigs weaned per sow, post-weaning mortality and feed conversion efficiency with those for the most recent period, it appears that the top third herds have been affected to a similar degree to other herds, but the decline in performance levels has been from a higher base, and performances therefore remain superior.

The great majority of finished pigs produced by herds in the survey were sold at bacon/cutter weight. Ninety-seven per cent of carcass pigs sold by non-contract herds were of that weight, only three per cent of pork weight. With contract herds, virtually 100 per cent of finished pigs were baconers/cutters. As is made clear by Table 11, pork production was seriously unprofitable in the costing year, whilst bacon/cutter production was moderately profitable. Top third herds produced an even smaller proportion of pork pigs than did herds in the survey as a whole. Paradoxically, however, whereas it is concluded above that top third herds were not less affected by disease than were the general run of herds, there is some evidence that herds specialising in pork were generally healthier. One indication of that is the lower mortality rate of the specialist pork producers.

### **Outdoor breeding herds**

Over the 20 years since outdoor breeding became a significant part of UK production, comparison of indoor and outdoor breeding and financial performances has been an enduring source of interest. In the early days, one less weaned pig per litter from outdoor breeding was

considered acceptable; margin per sow could still be similar or, even if less, nevertheless offer a better return on (less) capital than the indoor herd.

More recently, breeding performance from the outdoor herds has often been found to be rather similar to that of the indoor herds, the benefit of two decades' experience of outdoor production and some top class management. The most recent figures, Table 10, offer a mixed picture; litters per sow per year were better outdoors than in, and pre-weaning mortality less bad, but pigs born and weaned per litter were less good outdoors than indoors and the indoor herds weaned 0.4 pigs less per sow per year.

**Table 10 Indoor and Outdoor Breeding herds compared (non-contract)**

	Indoor		Outdoor	
	Average	Top third <sup>1</sup>	Average	Top third <sup>1</sup>
Number of herds	147	49	17	6
Average number of sows	237	336	423	562
Pigs born alive per litter	10.8	11.1	10.3	10.3
Pigs weaned per litter	9.4	9.7	9.1	9.0
Litters per sow per year	2.09	2.13	2.12	2.20
Pigs weaned per sow per year	19.7	20.7	19.3	19.9
Pre-weaning mortality	% 12.6	12.0	11.6	12.1
Sow, boar and piglet feed to weaning per sow per year	t 1.38	1.37	1.47	1.37

<sup>1</sup> Top third by £ net margin per £100 of output

### **Economies of scale**

During the course of the 1996-99 cycle of the survey, we looked for evidence of economies of scale (size economies) in pig production and found mixed results. Generally speaking, larger herds were more profitable, often with better breeding and feeding efficiency measures as well as lower unit costs. Labour cost was particularly interesting in that it tended to be greater on a per hour basis in the larger herds, but be more efficiently used. Trends were sufficiently pronounced for us to be confident in expecting that the big would continue to get bigger, and the small disappear, but there were exceptional cases.

Appendix table A19 presents a selection of performance and financial measures by herd type and size group. There we see two cases where margin per £100 of output steadily increases with herd size (Breeding and Breeding-finishing). With contract Finishing, however, those farms with an average herd size of less than 500 pigs were most profitable, those with 500 to 999 pigs recorded an average loss, whilst those with 1,000 or more pigs made a profit, albeit less in per cent of output terms than the smallest size group. A simple explanation for that might be that the smaller and larger sized herds were more successful in excluding pig wasting diseases from their holdings.

Except in the case of specialist Breeding herds, the hourly cost of labour did not on this occasion show a steady progression across the size bands, but the proportion that labour

ultimately formed of value of output was less for the larger herds than with the smaller. Only the mid-sized contract Finishing herds broke the trend of declining labour cost with increasing herd size; their inefficient use of labour apparently making a significant contribution to their overall loss.

The two herd types with breeding pigs show numbers of pigs weaned per sow that consistently improve with herd size, as do their feed conversion ratios and the Breeder-finishers' numbers of pigs born alive per litter. With the Breeding herds, however, pigs born alive per litter peak with the middle size band, and the contract and non-contract Finishing herds do not support any trend of improving feed conversion ratios.

It is probably valid to conclude that larger herds are frequently more efficient in their use of labour (despite, or perhaps because of, their tendency to pay more for labour) and they tend to be more profitable than smaller herds, often with better performance figures. However, that is not invariably so, and any such conclusion has to remain tentative.

It could in fact be that labour, for many years a steadily increasing proportion of total costs, is the key to efficiency and profitability, especially with breeding pigs. The largest herds frequently have specialist labour engaged exclusively on pig-keeping (not distracted by other tasks on mixed farms). Furthermore, individual workers are often assigned specifically to tasks such as serving sows or to the farrowing house, two areas that are key to the achievement of good numbers of pigs weaned per sow per year.

### **Break-even production costs**

For several recent cycles of the survey, our report has included some examination of the break-even cost of production. This is of particular importance as some producers seek to negotiate contracts with processors or supermarkets on that basis.

In making a break-even calculation, it is necessary first to eliminate any impact on apparent margins that changes in unit values of pigs on the farm at the beginning and end of a costing year might have made on a conventional accounting statement. In the year ended 30<sup>th</sup> September 2003 breeding stock on non-contract survey herds showed a 7.4 per cent increase in average value, *purely on the basis of the per head figures that were applied to them*, whilst trading stock staged a 13.4 per cent increase. The aggregated account for the non-contract herds therefore includes a £1.7m "profit" from improvement in stock values over the year, 42 per cent of the total 4.1m profit (see Appendix Table A20).

Appendix Table A16 establishes cost of production figures (not affected by valuation changes) for pork and bacon/cutter weight pigs. The figures in Table 11 are abstracted from that table. The cost of production (including cost of producing the weaner taken in by the rearing/finishing unit) for each weight of pig can also be regarded as the break-even cost of production. If the return for the finished pig is not at least equivalent to the cost of production, the pig has been sold at a loss.

**Table 11 Break-even costs of production, net of effects of valuation change**

		Pork	Average Cutter/Bacon	Top third Cutter/Bacon
Carcase pigs sold per herd		970	4,536	5,403
Weight of incoming weaner	kg	34.6	37.2	36.6
Cost of incoming weaner	£	43.67	38.89	33.93
Deadweight of carcase pig	kg	54.8	72.4	72.8
Mortality percentage	%	2.7	4.6	4.1
Net margin per carcase pig	£	-13.37	1.76	9.06
Cost of production	pence per kg ddwt	128	96	85

The pork and cutter/bacon figures in the tables are based on Breeding-finishing herds in the survey that finished at least 80 per cent of their pigs in one or other of those categories. The great majority finished pigs at cutter/bacon weight, and only ten sold 80 per cent or more of their pigs as pork. The pork producers were also relatively small herds, finishing an average of 970 pigs, compared to 4,536 for the cutter/bacon producers.

In view of the 128 pence per deadweight kg cost of production for pork and the average £13.37 a pig loss sustained by the producers, it would appear that the sector of the industry that still produces pork weight pigs is liable to shrink much further. The cutter/bacon sector, however, appears as secure as the wider pig industry – which, it must be admitted, does not at the moment exhibit signs of the greatest confidence in its own future – and the sample of 110 herds selected as specialist producers between them sold almost half a million pigs in the year. The average cost of production of those pigs was 96 pence per deadweight kg, a figure that was exceeded by the actual payment, on average, by 2.4 pence.

The narrowness of that margin, in a year that saw the best levels of profitability in pig production for at least five years, is a matter of some concern. In any case, it may be that in the longer term the production costs seen in Tables 11 and A16 are unsustainable. Many producers in the survey were postponing repairs and renewals that would become inevitable if they were to continue in production in the longer term, and some were already running their units down in anticipation of ceasing pig production.

Producers wishing to negotiate a price for their product based on cost of production would also wish, and quite justifiably, to include charges for the items specifically not included in these costings, general farm overheads, (as distinct from those specific to the pig enterprise), interest on working capital and payment for the operator's own management input.

Details of general farm overheads and the proportion of them that should be allocated to the pigs could be collected, but have not been, and working capital could be calculated and a suitable interest rate agreed.

Computation of an appropriate payment to the operator for his or her management input could be more problematic. Should an excellent manager be better rewarded than an average or poor manager? How is the quality of management to be measured, at what level

should it be rewarded, and should it be rewarded just as well in a year of general losses as one of profit?

There is much room for debate in this area and it is unlikely that a definitive answer could be arrived at. As a very broad general guide, it is possible that the additional items of general farm overheads, interest on working capital and payment for the operator's management input might add five to ten pence per deadweight kg to the production cost, raising break-even cost for bacon and cutter weight pigs in 2002-03 to 101 to 106 pence per deadweight kg, beyond the level at which they were actually paid.

Despite profit margins that are much improved over those of the acknowledged period of great financial difficulty for pig farmers, 1998 to 2000, the UK pig herd continues to waste away almost as dramatically as a pig with PMWS. As we search for reasons why, the slender financial rewards have to be a large part of the answer. As an entrepreneur, the pig farmer takes a considerable financial risk; the management requirements are exacting; for more than five years many pig farmers have found themselves obliged to care for sick and unthrifty pigs; increasingly they feel that the job they undertake is not valued by the rest of society; they lack confidence in the future of their industry. Unless pig margins take a smart step upwards, we will be obliged to join them, however reluctantly, in that lack of confidence.



**APPENDIX A****The results of the survey****Table A1 Feedingstuffs used, 183 non-contract herds, weighted**

	tonne	%	£	£ per tonne
<b>Purchased concentrates</b>				
Compound - sows, boars & unweaned piglets	51,268	26.9	5,947,672	116
- rearing pigs	31,518	16.5	5,617,705	178
- finishing pigs	59,904	31.4	7,268,194	121
Wheat - purchased	10,281	5.4	778,297	76
- home-grown	6,447	3.4	421,260	65
Barley - purchased	6,415	3.4	458,192	71
- home-grown	5,893	3.1	371,189	63
Other energy	2,867	1.5	341,833	119
Soya bean meal	5,758	3.0	929,294	161
Other protein (incl. protein concentrates)	1,708	0.9	461,630	270
Minerals, vitamins and additives	876	0.5	475,516	543
<b>Total meal</b>	<b>182,935</b>	<b>95.8</b>	<b>23,070,782</b>	<b>126</b>
<b>Other feed (converted to meal equivalent)</b>				
Whey/Milk	1,833	1.0	98,681	54
Cereal starch		1,972	1.0	100,941
51				
Waste yeast	854	0.4	56,158	66
Fodder beet, potatoes and other roots	233	0.1	17,538	75
Liquid potato	167	0.1	6,441	39
Other	2,891	1.5	213,002	74
<b>Total feed</b>	<b>190,885</b>	<b>100.0</b>	<b>25,563,543</b>	<b>123</b>

**Table A2 Financial results, all non-contract herds**

		All herds Weighted	Top third	Bottom third
<b>Number of herds</b>		183	61	61
Breeding		-	9	14
Breeding-finishing		-	45	48
Finishing		-	15	7
<b>Output - composition per £100</b>				
Sales	£	111.85	104.96	112.9
Less purchases	£	-15.51	-8.26	-16.64
Valuation difference (+ or -)				
due to change in values	£	3.64	3.54	4.68
due to change in numbers	£	0.01	-0.24	-0.94
<b>Costs and margins per £100 output</b>				
Feed	£	50.4	47.1	58.6
Other variable costs	£	8.7	8.2	10.8
Labour	£	17.6	15.3	23.7
Other fixed costs	£	14.6	11.6	19.3
Total costs	£	91.2	82.2	112.3
Margin	£	8.8	17.8	-12.3
<b>Weights and prices of purchased weaners and stores</b>				
liveweight	kg	35.2	34.5	28.7
price per kg lwt	p	110	106	122
price per pig	£	33.60	36.48	35.14
<b>Weights and prices of sales weaners and stores</b>				
liveweight	kg	24.5	21.9	28.5
price per kg lwt	p	123	136	111
price per pig	£	30.20	29.68	31.74
<b>Pork</b>				
deadweight	kg	55.4	55.7	55.1
price per kg lwt	p	103	100	104
price per pig	£	56.79	55.88	57.47
<b>Cutter/Bacon</b>				
deadweight	kg	73.3	72.8	72.0
price per kg lwt	p	98	98	98
price per pig	£	71.93	71.08	70.42
<b>Sales composition</b>				
Weaners and stores	%	34.6	23.9	23.6
Pork	%	1.9	1.0	9.7
Cutter/Bacon	%	61.3	73.0	66.4
Casualties and miscellaneous	%	2.2	2.1	0.3



**Table A3 Production results, all non-contract herds**

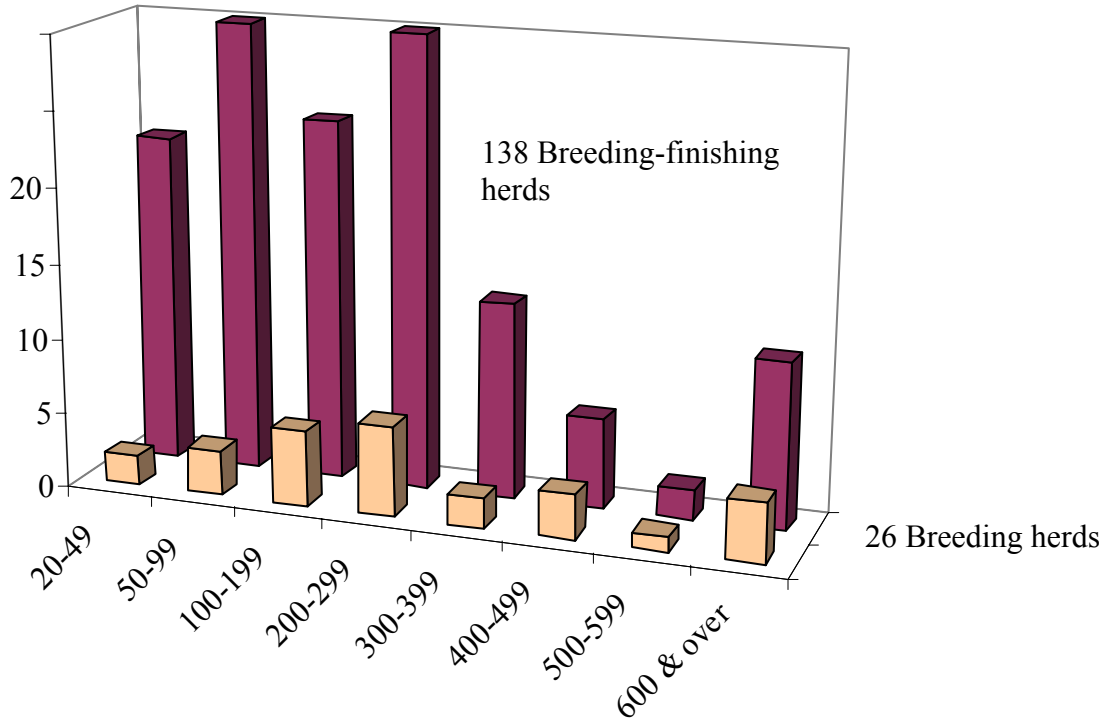
		All herds Weighted	Top third	Bottom third
<b>Breeding</b>				
Average number of sows		229	303	113
Litters per sow		2.11	2.13	1.95
Age at weaning	days	27	27	29
Open days per litter	days	30	28	42
Live pigs born per litter		10.7	10.9	10.3
Pigs weaned per litter		9.3	9.6	8.9
Pigs weaned per sow		19.7	20.6	17.5
Pre-weaning mortality	%	12.6	11.8	13.5
Sow, boar & unweaned piglet feed used per sow	t	1.40	1.37	1.45
	£	159	152	170
per pig weaned	kg	71	67	83
	£	8.1	7.4	9.7
Cost of meal per tonne	£	114	111	118
Cost of feed per tonne equivalent	£	113	110	117
Compounds as % of total feed	%	87	83	79
Meal equivalent from milk by-products (by weight)	%	0.0	0.0	0.1
Sows culled (including deaths)	%	50	53	50
Sow mortality	%	6.3	7.3	5.7
Costs per weaner				
Breeding stock depreciation	£	1.19	1.27	1.62
Variable costs				
Feed	£	8.08	7.36	9.70
Vet and vet supplies	£	1.12	1.04	1.40
AI	£	0.50	0.51	0.54
Contract (including carcass disposal)	£	0.18	0.17	0.23
Bedding and litter	£	0.53	0.52	0.75
Fixed Costs				
Labour	£	5.31	5.04	7.27
(hours)	hrs	(0.7)	(0.7)	(1.0)
Tractor, machinery & pig equipment	£	1.28	1.14	1.52
Power and water	£	0.62	0.70	0.93
Miscellaneous expenses	£	0.30	0.26	0.42
Buildings	£	1.04	1.01	1.39
Pasture	£	0.19	0.09	0.17
<b>Total</b>	<b>£</b>	<b>20.35</b>	<b>19.10</b>	<b>25.94</b>

**Table A3 (continued)**

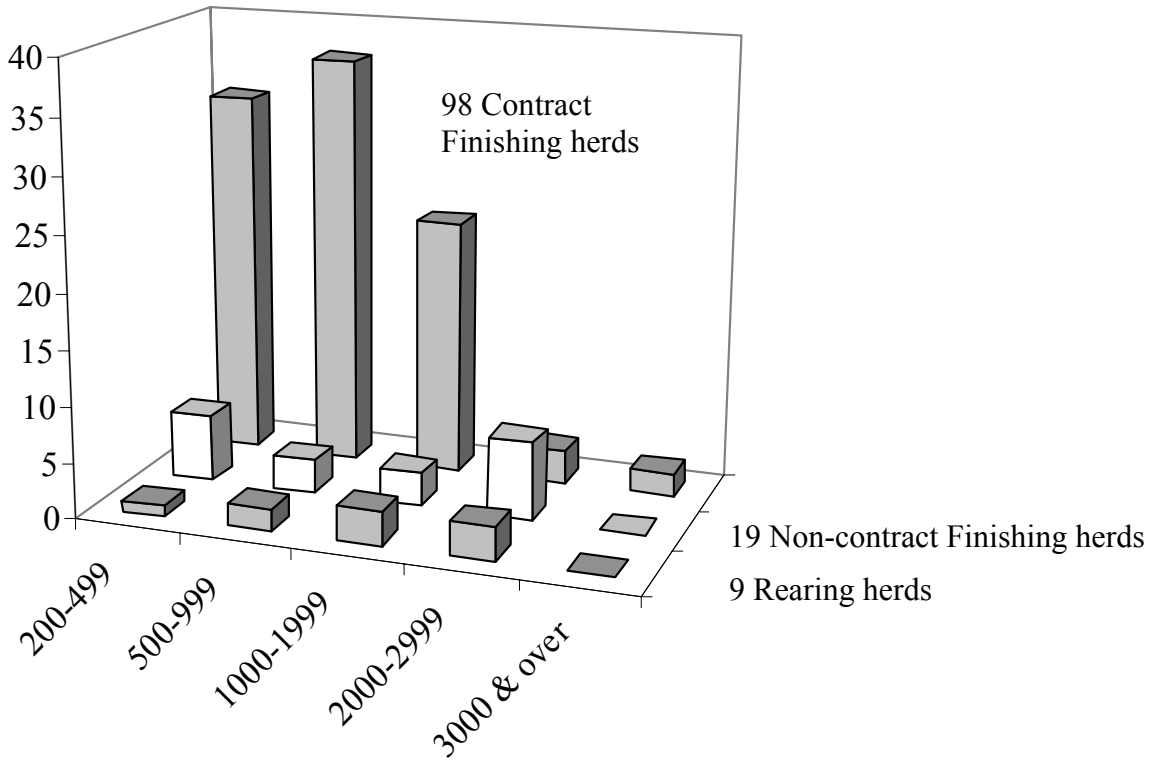
		All herds Weighted	Top third	Bottom third
<b>Rearing-finishing</b>				
Number of carcass pigs sold per herd		3,066	4,636	1,661
Percentage of carcass pig sales:				
Pork	%	3	1	13
Cutter/Bacon	%	97	99	87
Average liveweight of carcass pigs sold	kg	96.8	96.2	95.3
Liveweight of pigs produced	kg	70.9	77.9	77.6
Liveweight of pigs brought in	kg	11.6	9.5	11.7
Pigs brought in - % purchased	%	15	9	19
Days rearing-finishing	days	144	147	154
Daily liveweight gain	g	576	576	537
Mortality percentage	%	7.1	6.9	9.0
Labour hours per carcass pig equivalent	hrs	(0.9)	(0.8)	(1.1)
Feed conversion rate		2.52	2.40	2.79
Cost of meal per tonne	£	132	130	137
Cost of feed per tonne equivalent	£	128	128	128
Compounds as % of total feed	%	69	72	55
Meal equivalent from milk by-products (by weight)	%	1.4	0.7	2.6
Costs per kg liveweight gain				
Feed	p	32.2	30.6	35.6
Other variable costs	p	4.1	4.0	5.0
Labour	p	7.4	6.1	9.7
Other fixed costs	p	7.6	5.6	10.0
Mortality charge	p	2.7	2.1	4.0
<b>Total</b>	<b>p</b>	<b>54.0</b>	<b>48.4</b>	<b>64.3</b>

**Distribution of pig herds in the 2002-03 survey, by type and size of herd**

**Figure A1 Breeding and breeding-finishing herds**



**Figure A2 Rearing and finishing herds**



**Table A4 Financial results, Breeding-finishing herds (non-contract)**

		All herds Weighted	Top third	Bottom third
Number of herds		138	46	46
<b>Output - composition per £100</b>				
Sales	£	98.50	98.46	100.83
Less purchases	£	-2.74	-2.52	-3.97
Valuation difference (+ or -)				
due to change in values	£	3.78	3.73	4.25
due to change in numbers	£	-0.47	0.33	-1.11
<b>Costs and margins per £100 output</b>				
Feed	£	51.5	49.2	57.8
Other variable costs	£	8.7	8.5	10.0
Labour	£	16.8	14.3	23.9
Other fixed costs	£	14.0	11.7	18.0
Total costs	£	91.0	83.8	109.8
Margin	£	9.0	16.2	-9.8
<b>Weights and prices of purchased piglets, weaners and stores</b>				
liveweight	kg	34.1	-	34.1
price per kg lwt	p	109	-	109
price per pig	£	37.24	-	37.24
<b>Weights and prices of sales piglets, weaners and stores</b>				
liveweight	kg	37.0	28.5	37.5
price per kg lwt	p	102	110	99
price per pig	£	37.66	31.31	37.08
<b>Pork</b>				
deadweight	kg	55.4	55.8	55.1
price per kg dwt	p	103	100	104
price per pig	£	56.81	55.97	57.49
<b>Cutter/Bacon</b>				
deadweight	kg	72.4	73.2	71.0
price per kg dwt	p	99	98	98
price per pig	£	71.36	71.68	69.40
<b>Sales composition</b>				
Weaners and stores	%	3.1	1.5	10.7
Pork	%	3.7	1.4	13.0
Cutter/Bacon	%	90.2	96.0	65.5
Casualties and miscellaneous	%	0.1	0.0	0.1

**Table A5 Production results, Breeding-finishing herds (non-contract)**

		All herds Weighted	Top third	Bottom third
<b>Breeding</b>				
Number of herds		138	46	46
Average number of sows		186	348	124
Litters per sow		2.09	2.09	1.94
Age at weaning	days	28	27	29
Open days per litter	days	32	31	43
Live pigs born per litter		10.7	10.9	10.3
Pigs weaned per litter		9.4	9.6	8.9
Pigs weaned per sow		19.6	20.2	17.3
Pre-weaning mortality	%	12.2	11.7	13.9
Sows culled (including deaths)	%	53	57	51
Sow mortality	%	7.0	7.7	5.7
Gilts brought in	%	54	55	46
Gilts purchased - of gilts brought in	%	45	46	42
Sow, boar & unweaned piglet feed used				
per sow	t	1.39	1.38	1.44
	£	158	152	169
per pig weaned	kg	71	68	83
	£	8.1	7.6	9.7
Cost of meal per tonne	£	114	111	118
Cost of feed per tonne equivalent	£	113	111	117
Compounds as % of total feed	%	81	80	77
Meal equivalent from milk by-products (by weight)	%	0.0	-	0.1
Costs per pig weaned				
Feed	£	8.05	7.55	9.73
Other variable costs	£	2.62	2.45	2.87
Labour	£	5.64	4.92	7.55
(hours)	hrs	(0.7)	(0.6)	(1.0)
Other fixed costs	£	3.62	3.19	4.34
Breeding stock depreciation	£	1.37	1.38	1.61
Total	£	21.30	19.49	26.13

**Table A5 (continued)**

		All herds Weighted	Top third	Bottom third
<b>Rearing-Finishing</b>				
Number of carcass pigs sold per herd		3,062	6,034	1,690
Percentage of carcass pig sales:				
Pork	%	4	1	17
Cutter/Bacon	%	96	99	83
Average liveweight of carcass pigs sold	kg	95.8	96.7	94.1
Liveweight of pigs produced	kg	94.9	96.3	90.7
Liveweight of pigs brought in	kg	7.3	7.2	8.2
Pigs brought in - % purchased	%	0.1	-	1.5
Days from birth to sale	days	181	181	187
Daily liveweight gain, weaning to sale	g	569	579	525
Mortality percentage	%	9.8	9.0	10.9
Labour hours per carcass pig equivalent	hrs	(0.8)	(0.7)	(1.1)
Feed conversion rate		2.49	2.40	2.65
Cost of meal per tonne	£	134	133	138
Cost of feed per tonne equivalent	£	133	132	134
Compounds as a % of total feed	%	78	78	68
Meal equivalent from milk by-products (by weight)	%	0.4	0.3	0.2
Costs per kg liveweight gain				
Feed	p	33.1	31.7	35.5
Other variable costs	p	3.9	4.0	4.4
Labour	p	6.8	5.8	9.6
Other fixed costs	p	7.2	5.8	9.1
Mortality charge	p	2.7	2.2	4.3
<b>Total</b>	<b>p</b>	<b>53.7</b>	<b>49.5</b>	<b>63.0</b>
<b>Breeding and finishing</b>				
Composition of costs				
Feed	%	57	59	53
Other variable costs	%	10	10	9
Labour	%	18	17	22
Other fixed costs	%	15	14	16

**Table A6 Financial results, Breeding herds (non-contract)**

		All herds Weighted	Top third	Bottom third
Number of herds		26	9	9
Indoor/Mixed		18	6	7
Outdoor		8	3	2
<b>Output - composition per £100</b>				
Sales	£	103.60	101.44	106.08
Less purchases	£	-7.28	-7.01	-10.66
Valuation difference (+ or -)				
due to change in values	£	3.79	4.15	3.60
due to change in numbers	£	-0.10	1.42	0.98
		100.00	100.00	100.00
<b>Costs and margins per £100 output</b>				
Feed	£	44.6	39.3	55.1
Other variable costs	£	8.7	5.9	12.5
Labour	£	22.3	20.7	27.4
Other fixed costs	£	15.2	13.9	21.2
Total costs	£	90.8	79.8	116.2
Margin	£	9.2	20.2	-16.2
<b>Costs and returns per pig (piglets, weaners and stores)</b>				
Net return	£	29.84	28.97	27.42
Breeding stock depreciation	£	0.40	0.64	1.10
Feed	£	13.80	11.68	15.08
Vet and vet supplies	£	1.34	0.88	1.67
AI	£	0.31	0.26	0.39
Contract (incl. carcase disposal)	£	0.28	0.17	0.34
Bedding and litter	£	0.76	0.47	1.03
Gross margin	£	12.96	14.86	7.80
Labour	£	6.89	6.14	7.50
(hours)		(1.0)	(0.8)	(1.1)
Tractors, machinery and pig equipment	£	2.42	2.28	2.43
Power and water	£	0.58	0.35	0.90
Miscellaneous expenses	£	0.41	0.44	0.79
Buildings	£	0.74	0.65	1.37
Pasture	£	0.56	0.41	0.30
Net margin	£	1.36	4.59	-5.48

**Table A7 Production results, Breeding herds (non-contract)**

		All herds Weighted	Top third	Bottom third
Number of herds		26	9	9
Average number of sows		628	475	171
Litters per sow		2.15	2.17	2.02
Age at weaning	days	27	28	28
Open days per litter	days	27	24	37
Live pigs born per litter		10.6	10.6	10.2
Pigs weaned per litter		9.2	9.3	8.9
Pigs weaned per sow		19.7	20.1	18.0
Pre-weaning mortality	%	13.1	12.4	12.4
<b>Weights and prices of piglets, weaners and stores sold</b>				
liveweight	kg	24.0	20.5	20.4
price per kg lwt	p	125	141	135
price per pig	£	29.84	28.97	27.42
<b>Sales composition</b>				
Piglets to 15 kg	%	41	54	64
Weaners 15 to 30 kg	%	56	43	36
Other	%	3	4	0
Sow mortality	%	5.1	4.2	5.3
Gilts brought in	%	32	38	41
Gilts purchased - of gilts brought in	%	100	84	93
Sow, boar & unweaned piglet feed used				
per sow	t	1.41	1.42	1.49
	£	160	151	173
per pig weaned	kg	72	71	83
	£	8.1	7.5	9.6
Cost of meal per tonne	£	113	106	116
Cost of feed per tonne equivalent	£	113	106	116
Compounds as % of total feed	%	96	100	88
Meal equivalent from milk by-products (by weight)	%	-	-	-
<b>Composition of costs</b>				
Feed	%	49	49	47
Other variable costs	%	10	7	11
Labour	%	25	26	24
Other fixed costs	%	17	17	18



**Table A8 Financial results, Finishing herds (non-contract)**

		All herds Weighted	Top third	Bottom third
Number of herds		19	6	6
<b>Output - composition per £100</b>				
Sales	£	216.34	215.76	196.29
Less purchases	£	-116.01	-110.11	-105.51
Valuation difference (+ or -)				
due to change in values	£	2.63	0.34	8.18
due to change in numbers	£	-2.97	-5.99	1.04
<b>Costs and margins per £100 output</b>				
Feed	£	53.6	47.2	64.9
Other variable costs	£	8.7	5.5	14.4
Labour	£	14.2	11.3	19.1
Other fixed costs	£	16.9	10.9	26.3
Total costs	£	93.4	74.9	124.6
Margin	£	6.6	25.1	-24.6
<b>Weights and prices of purchased weaners and stores</b>				
liveweight	kg	35.2	35.2	28.3
price per kg lwt	p	110	105	124
price per pig	£	38.61	36.83	35.04
<b>Weights and prices of sales</b>				
Pork				
deadweight	kg	56.7	-	56.7
price per kg dwt	p	101	-	95
price per pig	£	57.43	-	53.98
Cutter/Bacon				
deadweight	kg	76.1	75.1	74.9
price per kg dwt	p	97	96	98
price per pig	£	73.60	71.87	73.45
<b>Sales composition</b>				
Weaners and stores	%	-	-	-
Pork	%	0.3	-	0.3
Cutter/Bacon	%	99.4	99.4	99.5
Casualties and miscellaneous	%	0.3	0.6	0.2

**Table A9 Production results, Finishing herds (non-contract)**

		All herds Weighted	Top third	Bottom third
Number of carcass pigs sold per herd		7,294	5,471	3,758
Average liveweight of carcass pigs sold	kg	99.9	98.8	98.6
Liveweight of pigs produced	kg	99.8	98.7	98.5
Liveweight of pigs bought in	kg	35.2	35.2	28.3
Daily liveweight gain	g	570	618	597
Time in unit	days	113	103	118
Mortality percentage	%	4.5	3.9	6.8
Feed conversion rate		3.07	2.87	3.50
Cost of meal per tonne	£	107	98	123
Cost of feed per tonne equivalent	£	97	93	101
Compounds as a % of total feed	%	30	36	11
Meal equivalent from milk by-products (by weight)	%	5.3	1.6	10.9
<b>Cost per kg liveweight gain</b>				
Feed	p	29.9	26.8	35.3
Other variable costs	p	4.8	3.1	7.8
Labour	p	7.9	6.4	10.4
Other fixed costs	p	9.4	6.2	14.3
Mortality charge	p	2.9	2.5	3.9
Total	kg	55.0	45.0	71.6
<b>Finishing costs per pig</b>				
Feed	p	19.29	17.01	24.76
Other variable costs	p	3.11	1.99	5.48
Labour	p	5.11	4.05	7.28
(hours)	p	(0.7)	(0.6)	(1.0)
Other fixed costs	p	6.09	3.94	10.02
Mortality charge	p	1.90	1.56	2.73
		<b>35.50</b>	<b>28.56</b>	<b>50.28</b>
Cost of weaner	p	38.61	38.63	35.04
Total costs	p	74.11	65.34	85.32
Net return	p	73.55	71.87	73.40
Margin	p	-0.56	6.48	-11.92

**Table A10 Financial results, all contract herds**

		All herds Weighted	Top third	Bottom third
<b>Number of herds</b>		107	36	36
Rearing		9	4	3
Finishing		98	32	33
<b>Output - composition per £100</b>				
Sales	£	100.00	100.00	100.00
Less purchases	£	-	-	-
Valuation difference (+ or -)				
due to change in values	£	-	-	-
due to change in numbers	£	-	-	-
<b>Costs and margins per £100 output</b>				
Feed	£	-	-	-
Other variable costs	£	9.4	5.2	9.8
Labour	£	45.1	31.2	60.6
Other fixed costs	£	45.5	30.6	63.5
Total costs	£	100.1	66.9	133.9
Margin	£	-0.1	33.1	-33.9
<b>Weights and prices of purchased piglets, weaners and stores</b>				
liveweight	kg	23.5	27.9	23.9
price per kg lwt	p	-	-	-
price per pig	£	-	-	-
<b>Weights and prices of sales piglets, weaners and stores</b>				
liveweight	kg	40.1	41.7	38.8
price per kg lwt	p	-	-	-
price per pig	£	-	-	-
<b>Pork</b>				
deadweight	kg	55.9	56.2	-
price per kg lwt	p	-	-	-
price per pig	£	-	-	-
<b>Cutter/Bacon</b>				
deadweight	kg	76.2	75.4	76.9
price per kg lwt	p	-	-	-
price per pig	£	-	-	-
<b>Sales composition</b>				
Weaners and stores	%	19.3	15.0	11.5
Pork	%	0.1	0.5	-
Cutter/Bacon	%	61.3	69.5	77.1
Casualties and miscellaneous	%	0.1	-	-

**Table A11 Production results, all contract herds**

		All herds Weighted	Top third	Bottom third
<b>Rearing-Finishing</b>				
Number of carcass pigs sold per herd		2,579	3,079	2,880
Percentage of carcass pig sales:				
Pork	%	0	1	-
Cutters/Bacon	%	100	99	100
Average liveweight of carcass pigs sold	kg	100.0	99.2	100.8
Liveweight of pigs produced	kg	85.7	88.9	92.8
Liveweight of pigs brought in	kg	23.5	27.9	23.9
Pigs brought in - % purchased	%	100	100	100
Days weaning-finishing	days	127	119	131
Daily liveweight gain, weaning to sale	g	490	515	525
Mortality percentage	%	7.3	7.5	7.8
Labour hours per pig equivalent	hrs	0.6	0.4	0.7
Feed conversion rate		2.67	2.82	2.85
Cost of meal per tonne	£	-	-	-
Cost of feed per tonne equivalent	£	-	-	-
Compounds as a % of total feed	%	100	100	100
Meal equivalent from milk by-products (by weight)	%	0.1	0.0	-
Costs per kg liveweight gain				
Feed	p	-	-	-
Other variable costs	p	1.0	0.6	1.0
Labour	p	4.8	3.6	6.2
Other fixed costs	p	4.9	3.5	6.5
Mortality charge	p	-	-	-
<b>Total</b>	<b>p</b>	<b>10.7</b>	<b>7.7</b>	<b>13.8</b>
Composition of costs				
Feed	%	-	-	-
Other variable costs	%	9	8	7
Labour	%	45	47	45
Other fixed costs	%	46	46	47

**Table A12 Financial results, contract Rearing herds**

		All herds Weighted
Number of herds		9
<b>Output - composition per £100</b>		
Sales	£	100.00
Less purchases	£	-
Valuation difference (+ or -)		
due to change in values	£	-
due to change in numbers	£	-
<b>Costs and margins per £100 output</b>		
Feed	£	-
Other variable costs	£	13.1
Labour	£	38.8
Other fixed costs	£	50.2
Total costs	£	102.1
Margin	£	-2.1
<b>Incoming piglets and weaners</b>		
Pigs of less than 15kg lwt	%	100
	lwt kg	7.4
Pigs of 15kg and over	%	-
	lwt kg	-
<b>Outgoing weaners and stores</b>		
Pigs of less than 15kg lwt	%	-
	lwt kg	-
Pigs of 15kg and over	%	100
	lwt kg	40.3

**Table A13 Production results, contract rearing herds**

		All herds Weighted
Number of weaner and store pigs sold per herd		9,092
Average liveweight of weaner and store pigs sold	kg	40.3
Liveweight of pigs produced	kg	40.3
Liveweight of pigs brought in	kg	7.4
Daily liveweight gain	g	550
Time in unit	days	60
Feed conversion rate		1.82
Cost of meal per tonne	£	-
Cost of feed per tonne equivalent	£	-
Compounds as a % of total feed	%	99
Meal equivalent from milk by-products (by weight)	%	1
Costs per kg liveweight gain		
Feed	p	-
Other variable costs	p	1.5
Labour	p	4.3
Other fixed costs	p	5.6
Mortality charge	p	-
Total	p	11.4
Finishing costs per pig		
Feed	£	-
Other variable costs	£	0.48
Labour	£	1.42
(hours)		(0.2)
Other fixed costs	£	1.84
Mortality charge	£	-
Total	£	3.74
Cost of incoming weaner	£	-
Total costs	£	3.74
Net return	£	3.66
Margin	£	-0.08

**Table A14 Financial results, contract finishing herds**

		All herds Weighted	Top third	Bottom third
Number of herds		98	33	33
<b>Output - composition per £100</b>				
Sales	£	100.00	100.00	100.00
Less purchases	£	-	-	-
Valuation difference (+ or -)				
due to change in values	£	-	-	-
due to change in numbers	£	-	-	-
<b>Costs and margins per £100 output</b>				
Feed	£	-	-	-
Other variable costs	£	8.9	5.0	9.6
Labour	£	46.0	31.6	61.4
Other fixed costs	£	44.9	30.1	63.2
Total costs	£	99.8	66.6	134.2
Margin	£	0.2	33.4	-34.2
<b>Weights and prices of purchased piglets, weaners and stores</b>				
liveweight	kg	28.0	31.3	26.2
price per kg lwt	p	-	-	-
price per pig	£	-	-	-
<b>Weights and prices of sales</b>				
<b>Pork</b>				
deadweight	kg	55.9	56.2	-
price per kg lwt	p	-	-	-
price per pig	£	-	-	-
<b>Cutter/Bacon</b>				
deadweight	kg	76.2	75.6	76.8
price per kg lwt	p	-	-	-
price per pig	£	-	-	-
<b>Sales composition</b>				
Weaners and stores	%	1.6	2.3	1.7
Pork	%	0.2	0.7	-
Cutter/Bacon	%	96.4	94.7	96.5
Casualties and miscellaneous	%	0.1	-	-

**Table A15 Production results, contract finishing herds**

		All herds Weighted	Top third	Bottom third
Number of carcass pigs sold per herd		2,816	3,436	3,141
Average liveweight of carcass pigs sold	kg	100.0	99.2	100.7
Liveweight of pigs produced	kg	98.9	97.8	99.7
Liveweight of pigs brought in	kg	28.0	37.2	34.4
Daily liveweight gain	g	565	545	565
Time in finishing unit	days	125	111	116
Mortality percentage	%	8.3	7.9	8.3
Feed conversion rate		2.79	2.89	2.08
Cost of meal per tonne	£	-	-	-
Cost of feed per tonne equivalent	£	-	-	-
Compounds as a % of total feed	%	100	100	100
Meal equivalent from milk by-products by weight)	%	-	-	-
Costs per kg liveweight gain				
Feed	p	-	-	-
Other variable costs	p	0.9	0.6	1.0
Labour	p	4.9	3.6	6.2
Other fixed costs	p	4.8	3.4	6.4
Mortality charge	p	-	-	-
Total	p	10.6	7.6	13.6
Finishing costs per pig				
Feed	£	-	-	-
Other variable costs	£	0.67	0.38	0.72
Labour	£	3.46	2.40	4.58
(hours)		(0.5)	(0.3)	(0.6)
Other fixed costs	£	3.37	2.28	4.72
Mortality charge	£	-	-	-
Total	£	7.49	5.06	10.01
Cost of weaner	£	-	-	-
Total costs	£	7.49	5.06	10.01
Net return	£	7.51	7.59	7.46
Margin	£	0.02	2.54	-2.55



**Table A16 A comparison of pork, cutter and bacon pig production, non-contract breeding-finishing herds**

		Pork	Average Cutter/Bacon	Top third Cutter/ Bacon
Number of herds		10	110	37
Number of carcase pigs sold per herd		970	4,536	5,403
Deadweight per carcase pig	kg	54.8	72.4	72.8
Net return per kg deadweight	p	104	98	98
Days from birth to slaughter	days	177	183	185
<b>Finishing results</b>				
Weight of incoming weaner	kg	34.6	37.2	36.6
Daily liveweight gain	g	558	673	651
Mortality percentage	%	2.7	4.6	4.1
Feed conversion rate		3.08	2.79	2.68
Cost of meal per tonne	£	129	119	116
Cost of feed per tonne equivalent	£	129	117	115
Compounds as a % of total feed	%	63	78	72
Costs per kg liveweight gain				
Feed	p	39.7	32.8	30.7
Other variable costs	p	2.8	4.4	4.4
Labour	p	13.1	5.4	4.8
Other fixed costs	p	6.8	6.7	4.7
Mortality charge	p	3.0	3.0	2.3
<b>Total</b>	<b>p</b>	<b>65.4</b>	<b>52.3</b>	<b>47.0</b>
<b>Costs and returns per carcase pig</b>				
Net return	£	56.78	71.25	71.01
Weaner cost	£	43.67	38.89	33.93
Mortality charge	£	1.20	1.77	1.38
Feed	£	16.09	19.19	18.30
Vet and vet supplies	£	0.33	0.41	0.43
Contract (incl. carcase disposal)	£	0.52	1.87	1.98
Bedding and litter	£	0.30	0.27	0.22
Gross margin	£	-5.32	8.85	14.77
Labour	£	5.29	3.18	2.88
(hours)		(0.7)	(0.4)	(0.4)
Tractors, machinery & pig equipment	£	1.99	1.41	1.09
Power and water	£	0.45	0.63	0.60
Miscellaneous expenses	£	0.04	0.29	0.22
Buildings	£	0.28	1.58	0.91
Net Margin	£	-13.37	1.76	9.06
Break-even net return per kg dwt	p	128	96	85

This table is based on those herds in the survey for which 80 per cent or more of value of trading pig sales came from pork or cutters/baconers, respectively.

**Table A17 Breeding results in relation to age at weaning, 164 non-contract herds**

		Age at weaning (days)		
		Less than 25	25 to 34	35 and over
Number of herds		25	81	23
Average number of sows		364	286	75
Litters per sow		2.10	2.11	1.91
Age at weaning	days	23	27	42
Open days per litter	days	35	30	32
Live pigs born per litter		11.0	10.6	10.8
Pigs weaned per litter		9.7	9.3	9.5
Pigs weaned per sow		20.3	19.6	18.1
Pre-weaning mortality	%	12.0	12.6	12.1
Sows culled (including deaths)	%	80	47	32
Sow mortality	%	12.2	5.7	6.1
Sow and boar depreciation - per sow	£	44	22	18
Sow, boar and piglet feed to weaning				
per sow	t	1.34	1.40	1.58
	£	145	157	221
per weaner	kg	66	71	87
	£	7.1	8.0	12.2
Cost of sow, boar and piglet feed per tonne equivalent	£	109	112	140
Costs per pig weaned				
Breeding stock depreciation	£	2.16	1.10	0.99
Variable costs				
Feed	£	7.15	7.99	12.16
Vet and vet supplies	£	1.08	1.18	1.06
AI	£	0.73	0.54	0.13
Contract (including carcass disposal)	£	0.19	0.18	0.10
Bedding and litter	£	0.63	0.52	0.61
Fixed costs				
Labour	£	6.06	5.22	7.47
(hours)	hrs	(0.8)	(0.7)	(1.1)
Tractors, machinery & pig equipment	£	0.90	1.28	1.44
Power and water	£	0.80	0.67	0.67
Miscellaneous expenses	£	0.36	0.26	0.37
Buildings	£	2.06	0.99	0.50
Pasture	£	0.02	0.18	0.10
<b>Total</b>	<b>£</b>	<b>22.14</b>	<b>20.12</b>	<b>25.62</b>

**Table A18 Indoor and outdoor specialist breeding herds compared (non-contract)**

		Indoor		Outdoor
		Average	Top third	Average
Number of herds		18	6	8
Average number of sows		253	428	590
Average age at weaning	days	27	28	27
Open days per litter	days	25	23	28
Pigs born alive per litter		11.0	11.1	10.2
Pigs weaned per litter		9.4	9.5	9.0
Litters per sow per year		2.17	2.18	2.14
Pigs weaned per sow per year		20.4	20.7	19.2
Pre-weaning mortality	%	14.0	14.4	12.3
Sow, boar and piglet feed to weaning				
per sow per year	t	1.40	1.39	1.40
	£	153	142	162
per pig weaned	kg	68	67	73
	£	7.5	6.9	8.4
Overall feed cost, per tonne meal equiv.	£	133	102	116
Output, costs and margin per sow				
Output	£	653	621	503
Feed	£	382	232	220
Other variable costs	£	56	37	42
Labour	£	153	137	101
(hours)		(22)	(19)	(14)
Land charges	£	0	0	22
Tractors, machinery & pig equipment	£	37	39	55
Buildings charges	£	20	19	8
Other fixed costs	£	22	16	19
Margin	£	83	141	42
Piglets, weaners and store pigs sold				
Liveweight	kg	27.5	23.6	18.3
Price per kg liveweight	p	122	131	135
Price per pig	£	33.49	30.88	25.16
Composition of sales				
Piglets up to 15kg	%	31	46	57
Weaners 15kg and over	%	69	54	37

**Table A19 Summary of results by herd type and size group**

	Average Rearing & finishers Number of herds	Pigs born alive & finishers Sows per herd	Pigs weaned per litter Pigs born alive per litter	Feed conversion ratio Pence feed cost per kg lwt gain	Cost labour £ per hour £ cost labour per £100 output	£ cost feed per £100 output £ cost feed per kg lwt gain	£ other costs per £100 output £ cost labour per £100 output	£ margin per £100 output £ margin per £100 output				
<b>Herd type 1 Breeding herds (non-contract)</b>												
Size group 1	5	56	123	9.8	17.7	2.58	40.4	6.27	63.4	26	24.7	-14.2
2	11	220	805	11.1	19.8	1.90	32.9	6.39	46.5	23.5	22.2	7.8
3	10	657	925	10.5	19.9	1.60	26.0	7.71	41.1	21.1	24.6	13.3
<b>Herd type 2 Contract rearing herds</b>												
Size group 1	1	(Data suppressed due to insufficient sample size)										
2	5	-	703	-	-	1.90	-	7.18	-	37.1	26.3	36.7
3	3	(Data suppressed due to insufficient sample size)										
<b>Herd type 3 Finishing herds (non-contract)</b>												
Size group 1	6	-	272	-	-	3.10	35.3	7.15	61.3	21.2	26.7	-9.2
2	3	(Data suppressed due to insufficient sample size)										
3	10	-	2172	-	-	3.19	29.2	6.84	52.6	14.8	28.8	3.8
<b>Herd type 4 Contract finishing herds</b>												
Size group 1	34	-	315	-	-	2.72	-	7.08	-	45.7	45.6	8.7
2	37	-	694	-	-	2.90	-	7.04	-	47.4	55.2	-2.6
3	27	-	1766	-	-	2.79	-	7.09	-	43.0	52.0	4.9
<b>Herd type 5 Breeding-finishing herds (non-contract)</b>												
Size group 1	53	58	388	10.6	18.2	2.53	35.3	7.26	57.5	23.6	20.7	-1.9
2	53	200	1440	10.7	19.6	2.48	31.8	7.12	51.5	18.6	22.9	7.0
3	32	599	4438	10.8	19.9	2.48	33.5	7.98	51	14.9	23.2	10.9
<b>KEY</b>	Herd types 1 and 5 Breeding pig average				Herd types 2, 3 and 4 Rearing/finishing pig average							
Size group 1	20 to 99				200 to 499							
Size group 2	100 to 299				500 to 999							
Size group 3	300 or more				1,000 or more							

**Table A20 Weighted results, 183 non-contract herds, in 'Farmer Output' format.**

Number	£	£	Number	£	£
VALUATION at 1 September 2002			VALUATION at 30 September 2003		
1603 Boars	361860		1398 Boars	306283	
4292 Maiden gilts	469031		4014 Maiden gilts	436160	
41732 Sows & served gilts	4590540		41549 Sows & served gilts	4985878	
69327 Suckling pigs	831927		72129 Suckling pigs	997549	
122052 Rearing pigs	2557335		126506 Rearing pigs	3146610	
141596 Finishing pigs	6327674	15138367	141027 Finishing pigs	6974332	16846812
PURCHASES			SALES		
438 Boars	204031		708 Cull boars	47414	
11460 Gilts & sows	1346050		18202 Cull sows & gilts	1475362	
6625 Weaners of less than 15 kg lwt	156163		18019 Gilts & boars for breeding	1327963	
141145 Weaners & stores 15 kg & over	5547951	7254194	125735 Weaners of less than 15 kg lwt	2732599	
COSTS			181662 Weaners & stores 15 kg & over	6550557	
Feed	23563543		17141 Pork pigs	973465	
Labour	8234653		543966 Cutters & baconers	39127574	
Vet & medicines	1593721		1312 Casualties & miscellaneous	71793	52306726
A I	408600		PAYMENT FOR		
Electricity/gas/heating oil	785935		CONTRACT PIG KEEPING		
Water	380578		MISCELLANEOUS SALES		
Small tools & miscellaneous	522455		BONUSES RECEIVED		
Bedding & litter:- purchased	463865				0
- home-grown	358474				18793
Hired transport & contract	1237408				5356
Pasture:- rent/rental value	225780		DEATHS		
Tractors and machinery	1939663		99 Boars		
Equipment	766122		92 Maiden gilts		
Building depreciation/rent paid	1643376		2631 Sows & served gilts		
Building repairs & maintenance	521917		118479 Suckling pigs		
Site rent	38835	42684925	42092 Rearing pigs		
			26512 Finishing pigs		
943002 PIGS BORN ALIVE					
NET MARGIN	4100200				
<u>1483272</u>	<u>69177687</u>		<u>1483272</u>		<u>69177687</u>
TOTAL OUTPUT FOR THE PERIOD	46785126		£ PER £100 OUTPUT		
PROFIT (LOSS) FROM CHANGE IN:-			Feed	50.4	
TRADING STOCK VALUES	1300026		Labour	17.6	
BREEDING STOCK VALUES	403621		Other	23.3	
Average number sows & served gilts	41957.7		Margin	8.8	
Number of litters	88491		COST PER TONNE OF FEED		
Pigs weaned	824523		Sows, boars & piglets	113	
Born alive per litter	10.7		Rearing pigs	172	
per sow	22.5		Finishing pigs	111	
Weaned per litter	9.3		Overall	123	
per sow	19.7		LABOUR		
Mortality			Total labour hours	1119340	
Pre-weaning	%	12.6	Cost (value) per hour	7.36	
Rearing	%	5.1	Value of farmer & spouse labour	2526782	
Finishing	%	4.3	% farmer & spouse labour (by value)	31	
Farrowing index (6 mos.)		2.11			
Age at weaning	days	27			
Open days per litter		30			

**Table A20 (continued)**

## ANALYSIS OF OPENING AND CLOSING VALUATIONS

		Opening	Closing
Average value:- Boars	£	226	219
- Maiden gilts	£	109	109
- Sows & served gilts	£	110	120
- Suckling pigs	£	12	14
- Rearing pigs	£	21	25
- Finishing pigs	£	45	49

**Rearing pigs**

Total liveweight	kg	2805658	2968370
Average liveweight	kg	23.0	23.5
Pence per kg lwt	pence	91	106

**Finishing pigs**

Total liveweight	kg	9151138	8991950
Average liveweight	kg	64.6	63.8
Pence per kg lwt	pence	69	78

## ANALYSIS OF PURCHASES

	No	lwt kg	£	Av lwt	£ per pig	p/kg
Boars	438	-	204031	-	465	-
Gilts & sows	11460	-	1346050	-	117	-
Weaners of less than 15 kg lwt	6625	52738	156163	8.0	24	296
Weaners & stores 15 kg & over	141145	5148920	5547951	36.5	39	108

## ANALYSIS OF SALES

	No	lwt kg	£	Av lwt	£ per pig	pence per kg
Cull boars	708	-	47414	-	67.01	-
Cull sows & gilts	18202	-	1475362	-	81.06	-
Gilts & boars for breeding	18019	1226397	1327963	68	73.70	108
Weaners of less than 15 kg lwt	125735	1094041	2732599	8.7	21.73	250
Weaners & stores 15 kg & over	181662	6450879	6550557	35.5	36.06	102

	%		dwt kg		Av dwt		pence per kg
Porkers	3	17141	949618	973465	55.4	56.79	103
Cutters and baconers	97	543966	39890385	39127574	73.3	71.93	98
Casualties & miscellaneous		1312	80126	71793	61.1	54.74	90

## FEED PURCHASES

	%	Sows, boars & piglets		Rearing pigs		Finishing pigs		£ per tonne
		=tonnes	£	=tonnes	£	=tonnes	£	
Home-grown wheat/barley	6	3062.13	196708	1949.87	126376	7327.55	469366	64
Purchased wheat/barley	9	2246.37	153685	1448.78	100231	13001.25	982573	74
Compound feed, other cereal and additives	81	52905.38	6266526	33366.08	6142199	67627.37	8633119	137
Milk & milk by-products	1	7.55	381	66.06	2062	1759.80	96238	54
Other by-products, etc.	3	613.40	48670	217.99	17204	5285.88	328205	64
Total	100	58834.82	6665970	37048.78	6388072	95001.85	10509501	123

**Table A20 (continued)**

## OUTPUT, COSTS, GROSS &amp; NET MARGINS

OUTPUT		£ per sow	1115
Feed			562
Other variable costs			97
GROSS MARGIN			457
Labour			196
(hours)			(27)
Other fixed costs			163
NET MARGIN			98
Sow & boar depreciation	£ per sow		23
Sow replacement rate	%		50
Sow, boar and unweaned piglet feed	tonnes per sow		1.40
	£ per sow		159
	kg per pig weaned		71
	£ per pig weaned		8.1
Pigs transferred or purchased into rearing section			828346
Av number rearing pigs			121707
Pigs transferred or purchased into finishing section			615548
Av number finishing pigs			135425
Days from birth to weaning	days		27
Days in rearing section	days		57
Days in finishing section	days		<u>87</u>
			<u>171</u>
REARING SECTION			
Daily liveweight gain	grams		438
Feed per kg lwt gain	kg		1.91
Cost per kg lwt gain	pence		32.8
FINISHING SECTION			
Daily liveweight gain	grams		667
Feed per kg lwt gain	kg		2.88
Cost per kg lwt gain	pence		31.9
REARING & FINISHING			
Daily liveweight gain	grams		576
Feed per kg lwt gain	kg		2.52
Cost per kg lwt gain	pence		32.2
Av liveweight at sale:-	stores & weaners	kg	24.5
	carcase pigs	kg	96.2
CARCASE PIG SALES			
	Number		561107
	Average deadweight	kg	72.8
	Return per pig	£	71.47
	Return per kg dwt	pence	98

**Table A21 Weighted results, 107 contract herds, in 'Farmer Output' format.**

Number	£	£	Number	£	£
	VALUATION at 1 September 2002			VALUATION at 30 September 2003	
0	0		0	0	
0	0		0	0	
0	0		0	0	
0	0		0	0	
11229	0		9884	0	
45607	0	0	45377	0	0
	PURCHASES			SALES	
0	0		0	0	
0	0		0	0	
162390	0		0	0	
227245	0	0	0	0	
	COSTS		86495	0	
			659	0	
			275270	0	
			378	0	0
				PAYMENT FOR	
				CONTRACT PIG KEEPING	
					2291478
				MISCELLANEOUS SALES	
					6182
				BONUSES RECEIVED	
					8115
				DEATHS	
			0	0 Boars	
			0	0 Maiden gilts	
			0	0 Sows & served gilts	
			0	0 Suckling pigs	
			8603	8603 Rearing pigs	
			19803	19803 Finishing pigs	
0	PIGS BORN ALIVE				
	NET MARGIN			NET MARGIN	
		-1357			
446471		2305775	446471		2305775
	TOTAL OUTPUT FOR THE PERIOD		2305775	£ PER £100 OUTPUT	
	PROFIT (LOSS) FROM CHANGE IN:-			Feed	
	TRADING STOCK VALUES		0	Labour	
	BREEDING STOCK VALUES		0	Other	
	Average number sows & served gilts		0.0	Margin	
	Number of litters		0		
	Pigs weaned		0	COST PER TONNE OF FEED	
	Born alive per litter		0.0	Sows, boars & piglets	
	per sow		0.0	Rearing pigs	
	Weaned per litter		0.0	Finishing pigs	
	per sow		0.0	Overall	
	Mortality			LABOUR	
	Pre-weaning		% 0.0	Total labour hours	
	Rearing		% 5.3	146622	
	Finishing		% 6.7	Cost (value) per hour	
	Farrowing index (6 mos.)		0.00	7.10	
	Age at weaning		days 0	Value of farmer & spouse labour	
	Open days per litter		0	695036	
				% farmer & spouse labour (by value)	
				67	



**Table A21 (continued)**

## ANALYSIS OF OPENING AND CLOSING VALUATIONS

		Opening	Closing
Average value:- Boars	£	0	0
- Maiden gilts	£	0	0
- Sows & served gilts	£	0	0
- Suckling pigs	£	0	0
- Rearing pigs	£	0	0
- Finishing pigs	£	0	0

**Rearing pigs**

Total liveweight	kg	299711	164488
Average liveweight	kg	26.7	16.6
Pence per kg lwt	pence	0	0

**Finishing pigs**

Total liveweight	kg	2764326	2614621
Average liveweight	kg	60.6	57.6
Pence per kg lwt	pence	0	0

## ANALYSIS OF PURCHASES

	No	lwt kg	£	Av lwt	£ per pig	p/kg
Boars	0	-	0	-	0	-
Gilts & sows	0	-	0	-	0	-
Weaners of less than 15 kg lwt	162390	1191811	0	7.3	0	0
Weaners & stores 15 kg & over	227245	7981018	0	35.1	0	0

## ANALYSIS OF SALES

	No	lwt kg	£	Av lwt	£ per pig	pence per kg
Cull boars	0	-	0	-	0.00	-
Cull sows & gilts	0	-	0	-	0.00	-
Gilts & boars for breeding	0	0	0	0	0.00	0
Weaners of less than 15 kg lwt	0	0	0	0.0	0.00	0
Weaners & stores 15 kg & over	86495	3472003	0	40.1	0.00	0
	%	dwt kg		Av dwt		
Porkers	0	659	36828	0	55.9	0.00
Cutters and baconers	100	275270	20962233	0	76.2	0.00
Casualties & miscellaneous		378	26165	0	69.2	0.00

## FEED PURCHASES

	%	Sows, boars & piglets		Rearing pigs		Finishing pigs		£ per tonne
		=tonnes	£	=tonnes	£	=tonnes	£	
Home-grown wheat/barley	0	0.00	0	0.00	0	0.00	0	0
Purchased wheat/barley	0	0.00	0	0.00	0	0.00	0	0
Compound feed, other cereal and additives	100	0.00	0	9053.91	0	48693.22	0	0
Milk & milk by-products	0	0.00	0	42.28	0	0.00	0	0
Other by-products, etc.	0	0.00	0	0.00	0	0.00	0	0
Total	100	0.00	0	9096.19	0	48693.22	0	0

**Table A21 (continued)**

## OUTPUT, COSTS, GROSS &amp; NET MARGINS

		£ per sow
OUTPUT		-
Feed		-
Other variable costs		-
GROSS MARGIN		-
Labour		-
(hours)		-
Other fixed costs		-
NET MARGIN		-
Sow & boar depreciation		£ per sow -
Sow replacement rate		% -
Sow, boar and unweaned piglet feed		tonnes per sow -
		£ per sow -
		kg per pig weaned -
		£ per pig weaned -
Pigs transferred or purchased into rearing section		162390
Av number rearing pigs		25108
Pigs transferred or purchased into finishing section		295882
Av number finishing pigs		71335
Days from birth to weaning		days 0
Days in rearing section		days 61
Days in finishing section		days <u>99</u>
		<u>160</u>
REARING SECTION		
Daily liveweight gain		grams 515
Feed per kg lwt gain		kg 1.93
Cost per kg lwt gain		pence 0.0
FINISHING SECTION		
Daily liveweight gain		grams 649
Feed per kg lwt gain		kg 2.88
Cost per kg lwt gain		pence 0.0
REARING & FINISHING		
Daily liveweight gain		grams 598
Feed per kg lwt gain		kg 2.67
Cost per kg lwt gain		pence 0.0
Av liveweight at sale:-		
stores & weaners		kg 40.1
carcase pigs		kg 100.0
CARCASE PIG SALES		
Number		275929
Average deadweight		kg 76.1
Return per pig		£ 0.00
Return per kg dwt		pence 0

## APPENDIX B

### DEFINITION OF TERMS

**Average number of sows** is an annual average calculated from the number of sows and in-pig gilts on hand at the beginning of each month and on the last day of the recording period.

**Sow replacement rate** is  $(\text{sows sold} + \text{deaths}) * 100 / \text{average number of sows}$ .

**Open days per litter** is the average number of days between weaning and the next productive service. In this survey it was calculated on the basis of a 116 day gestation period.

**Carcase pig equivalent** is a convenient way of putting all the pigs passing through a finishing unit on an equal basis. Based on liveweight output, it takes account of the varying weights of pigs at sale, at purchase and in the opening and closing valuations. It is also affected by the mortality rate, dead pigs being treated as a total loss in terms of pigmeat output.

**Output** is  $(\text{sales} + \text{closing valuation}) - (\text{purchased pigs} + \text{opening valuation})$ .

The **gross margin** is output minus variable costs. **Net margin** is gross margin minus fixed costs. See opposite for definitions of Fixed and Variable Costs.

**Top third** and **bottom third** herds were determined on the basis of margin per £100 output.

**Break-even pence per kg dwt**, is the production cost of carcase pigs, expressed in terms of pence per kg deadweight. If the net return for carcase pigs (after deductions and haulage and any addition of bonus) is less than this figure, pigs are being sold at a loss.

For **sales of pigs**, the prices used were net of all deductions, including MLC levy and, for pigs sold by auction, auctioneers' commissions and market tolls. Value added tax qualifying for refund was not deducted, neither was the cost of transporting pigs from the farm to the point of sale. The latter was a change from earlier pig cost surveys conducted as part of the Special Economic Studies programme. In the present study, transport of pigs to or from the farm, or internally within it, was treated simply as a cost:- a contractor's charge, or a combination of labour and machinery costs if the haulage was undertaken using the farm's own resources.

**Purchased pigs.** "Free" or subsidised breeding stock supplied by a feed company was costed at its full value and the imputed element treated as a bonus on weaner sales, or rebate on feed purchases, as appropriate. As with sales of pigs (see above), for the purposes of the present study any incoming transport cost was treated as a contractor's charge, or a combination of labour and machinery costs if the haulage was undertaken using the farm's own resources, not as an integral part of the cost of the incoming livestock. This was a change from the practice of earlier pig cost surveys conducted as part of the Special Economic Studies programme.

### Costs

**Feed.** For **purchased feed** the price is the delivered price less any discount or trading bonus.

For **home-grown cereals, fodder beet, potatoes, silage, etc.** the price used was the estimated market value when fed.

For the purpose of calculating **meal equivalents**, the following factors were used to convert to 1 kg meal equivalent:-

Potatoes, Fodder Beet, Carrots	5.00 kg
Grass/maize silage	6.00 kg
Liquid potato	10.20 kg
Brewers grains	3.80 kg
Bread	1.25 kg
Whey	15.00 litres
Whole milk	4.45 litres
Yoghurt	plain 4.90 litres      fruit 3.40 litres
Ice cream	1.70 kg
Starch syrup	wheat 1.00 kg      maize 1.75 kg

**Labour.** For **hired labour** an hourly rate was calculated for ordinary time based on all the costs of employing a worker. These included wages, perquisites, insurance and paid holidays. Overtime was charged at the appropriate rate.

For **family labour** (including the farmer) standard charges based on the above were used.

**Variable costs** include feed, veterinary costs, medicines, AI, contractors' charges (including those for disposal of mortalities) and purchased bedding and litter.

**Fixed costs** include labour, tractor work, pasture charges, power, heat, water, insurance, maintenance, repairs, building and equipment depreciation, small tools and sundry costs.

**Home-grown straw** and other bedding was costed at an appropriate opportunity cost.

### EU regions and regional centres contributing to the National Pig Survey



**NB.** No allowance was made in the costings for general farm overheads (as distinct from those specific to the pig enterprise), interest on working capital, or payment for the operator's own management input.

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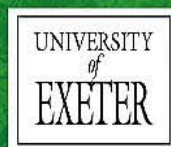
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CENTRE FOR RURAL RESEARCH  
THE UNIVERSITY OF EXETER  
LAFROWDA HOUSE  
ST GERMAN'S ROAD  
EXETER EX4 6TL

TELEPHONE: 44 (0)1392 263836  
FAX: 44 (0)1392 263852

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