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The Pig Sector in England and Wales
A study based on information collected by the Farm
Business Survey over the years 2001-02 and 2002-03

ANDREW SHEPPARD

*SPECIAL STUDIES
IN AGRICULTURAL ECONOMICS*

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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 II.

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

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FOREWORD

Studies of the economics of pig production have been an almost continuous feature of the Defra (formerly Ministry of Agriculture, Fisheries and Food) sponsored farm economics research work throughout the post Second World War period. For the greater part of 40 years, both the University of Cambridge and the University of Exeter produced an annual report on the subject. Continuous costings ended in 1993, but Special Economic Studies of pig production, embracing the whole of England (and for two years also Wales) have been conducted in four of the years between 1993 and the present, the most recent in 2002-03.

Financial pressures suggest that specific pig enterprise costings, in common with other single enterprise costings, will not in future be possible within the Defra budget for farm-level research by the universities and colleges that have for long undertaken such work. However, the same universities and colleges are contracted to Defra to collect data for the Farm Business Survey, a part of the EU-wide Farm Accounts Data Network, and that survey includes a significant number of farms with pigs. This report presents an analysis of data from farms in England and Wales with pigs that were in the Farm Business Survey in the two years 2001-02 and 2002-03.

Separate analysis and publication of sectoral data from the Farm Business Survey is not entirely new. Horticultural data from the Farm Business Survey is examined and published annually in *Horticultural Business Data*, available from the Department of Agricultural and Food Economics at the University of Reading. A number of Special Economic Studies have been “bolted-on” to the Farm Business Survey (E.g. Machinery, Buildings and Labour Overhead Costs and Agricultural Contracting in 2000-01¹). However, until the present study, no analysis of anything so specific as a particular livestock enterprise has been attempted.

The Farm Business Survey was not designed for detailed examination of single enterprises. Even Gross Margin analysis has not hitherto been possible, let alone the Net Margins routinely calculated by the Special Economic Studies. In addition to allocating variable and fixed costs to individual farm enterprises, the Special Economic Studies collect much data on the physical aspects of production, and various measures of technical efficiency are calculated (e.g. Quantity of feed used per bird in an egg production unit, or Lambing percentage – number of lambs produced per 100 ewes put to ram – in a sheep costing). Large as the Farm Business Survey already is as a data collecting exercise, its scope does not extend to the collection of the necessary details for calculation of such measures.

To enable the calculation of Gross Margins for a range of mainstream and other enterprises in which the European Commission takes a specific interest, the Farm Business Survey data collection form has been modified somewhat for 2004-05. Meanwhile, the present study was commissioned. Its objective was to report on the pig sector as recorded by the Farm Business Survey and to establish to what extent reliable measures of the financial performance and technical efficiency of pig production can be extracted from the existing FBS data. A separate report to Defra will outline further modifications that might be made to the FBS data collection exercise to improve the usefulness of the pig data collected and to

¹ For details of the resulting report, also of *The Economics of Horticultural Production Under Glass 2000-2002*, another bolt-on study, see Appendix II

increase the number of calculated benchmarks that can be aligned with the standard measures used by the industry.

Unless and until modifications on those lines are implemented, the information on the specifics of pig production that can be gleaned from the Farm Business Survey will continue to have definite limitations. However, much can be learned from the Farm Business Survey about the characteristics of farms with pigs, both those that specialise in pig production and those that do not, and therein lies the greatest value of the present report. The context of pig production in England and Wales is delineated in a way that is most certainly unique to the Farm Business Survey and this study. The strengths of the Farm Business Survey, that it takes full farm accounts, carefully scrutinising the detail and ensuring that the accounting methodology complies in every case with set standards, and that it extends the accounting process to production of a fully reconciled balance sheet, are also the strengths of the present study.

The University of Exeter Centre for Rural Research is very grateful to Defra, especially staff of the Farm and Animal Health Economics Division, for sponsorship and support of the study. In particular, we would like to acknowledge the specific input of several individuals within that division; that input included identification of all farms in the Farm Business Survey with pigs in either or both of the two years studied, abstraction of the several hundred items of relevant data for each of those farms, and constructive comment on the draft of this report. Martin Turner and Keith Robbins, colleagues of the author at the Centre for Rural Research, made valuable contributions to the study from their comprehensive knowledge of the methodology of the Farm Business Survey, and Martin Turner wrote the commentary in this report on balance sheet aspects of the data.

We are grateful too for the dedication to detail and accuracy of staff working on the Farm Business Survey at the universities of Cambridge, Exeter, Manchester, Newcastle, Nottingham, Reading, Imperial College at Wye, the University of Wales at Aberystwyth and Askham Bryan College. And, of course, neither the Farm Business Survey nor the present study would be possible without the willing co-operation of the busy, and in many cases hard-pressed, farmers who so kindly allow use of their accounting data. For each of them we are providing a copy of this report as a token of our gratitude.

SUMMARY

For some years, DEFRA's Commissioned Work Programme (CWP) in Agricultural Economics has embraced the Farm Business Survey (FBS) and a series of Special Economic Studies (Special Studies) of commodity production and other farm activities. Contemporary financial pressures are such that Special Studies cannot be undertaken as frequently as in the past, if at all, and it is likely to be necessary to look to the FBS for detail of individual farm enterprises that has previously been obtained from Special Studies. In any case, there is an important need to maximise the usefulness of information available from the FBS, and indeed to make more use for analytical purposes of the large body of information that is available from the FBS than has hitherto been the case.

The objective of the present study is to bring into the public domain detailed information on pig production systems collected by the Farm Business Survey. The volume of data is not inconsequential and it relates to a significant number of farms widely distributed throughout England and Wales². If the study were to be extended over a number of years, valuable additional information could be gleaned on changes between years and over time both on samples of the same farms and within tightly defined groups of similar farms. No doubt some changes and extensions to the information gathered could also expand the usefulness of the data published, particularly for the purposes of benchmarking on nationally recognised definitions of financial and physical performance.

By comparison with many other years in the past decade or more, pig prices in the 2001-02 and 2002-03 FBS years³ were relatively stable and profit margins might at first sight be thought to have been acceptable, especially by comparison with the period between 1998 and 2000 when virtually all pig producers sustained serious losses. However, pig farmers faced a number of problems, which combined together to make many of them feel that future prospects for the industry were poor, particularly with reference to themselves, and numbers ceasing production continued on a path begun in 1998 that, cumulatively, now amounts to an exodus unprecedented by anything in the post-World War II period.

Against that background, the FBS nevertheless managed to strengthen its sample of farms with pigs from 165 in 2001-02 to 183 in 2002-03. Data collected from those farms in those years forms the basis of this study. Farms with pigs included many classified as Dairy, Cereal, etc.; even including Less Favoured Area Cattle and sheep farms, some of which had pig enterprises whose commercial credentials were beyond question. The farm classification Pigs and poultry provided 63 of the 165 farms with pigs in 2001-02 and 62 of the 183 in 2002-03.

Characteristics examined on the farms with pigs included their regional distribution, form of business, number of holdings making up the farm business, whether or not there were organic enterprises on the farms, or whether organic conversion was in progress, Utilised Agricultural Area (UAA), the proportion of UAA that was owner-occupied, farms in Environmentally Sensitive Areas, Nitrogen Vulnerable Zones and Moorland areas, labour usage, percent of farm output derived from pigs, the percent of livestock output derived from pigs, types of pig production and description of pigs produced/sold, and average numbers of

² Widely distributed through England and Wales, although in fact only two FBS recorded farms with pigs in 2001-02 and three in 2002-03 were actually located in Wales.

³ Farm account year ends within the Farm Business Survey in the two years reported on here ranged from 31st December to 30th April, with an average year end of mid-February.

sows and of growing pigs, all by farm type. Much of that detail could not readily be gleaned from any other source.

Surprises uncovered by the analysis included the very small numbers of farms with breeding sows that keep no pigs at all to finishing weight and the considerably larger number selling finished pigs but doing so exclusively below 55kg deadweight. However, the less surprising was more characteristic, such as that almost half of all pig farms in the FBS were located in East England, the largest herd-type group was indoor breeding herds selling finished pigs and that, notwithstanding the numbers selling light pork, the majority of finished pigs were sold in the 55 to 75kg deadweight band.

The analysis went on to look particularly carefully at farms that roughly coincided in their characteristics to the Field of Survey of the most recent pig Special Economic Study; those with at least 20 breeding sows and/or 200 finishing pigs. Such farms can be considered the commercial core of the industry. The total number of 'Field of Survey' farms was 122 in 2001-02, rising to 139 in 2002-03. Of those, 62 fell within the Pigs and poultry farm classification in 2001-02 and 60 in 2002-03. Most were breeding-finishing farms, but the broader All farms classification also contained a useful group of contract finishers, i.e. farms finishing pigs for a third-party owner.

The particular interest in the Pigs and poultry group is that other enterprises on the farm arose less frequently than in other classifications and, where they were present, were usually of relatively minor significance. Poultry could, of course, sit alongside the pigs without affecting the classification, but in fact only a few Field of Survey pig farms had significant numbers of poultry. Thus, for cost items such as Vet and medicines, Other livestock costs and Heat, light and water – where, unlike feed, the FBS does not itemise the expenditure specifically related to pigs – the best indication of expenditure on pigs was obtained from this group.

Great caution is required, however, in making any comparison between the results of the FBS as it was conformed in 2001-02 and 2002-03 and those of surveys concerned specifically with pig enterprises. Definitions relating to pigs in the Farm Business Survey tend to be different from those of single enterprise pig costings, and data considered fundamental to any detailed pig study is not within the scope of the FBS (the size of which, as a data collecting exercise, is already very large). The FBS was not designed to be used as a source of enterprise costings, still less of detailed measures of production efficiency at the enterprise level. Should it be required to become so in years to come, modifications and additions will be required.

Nevertheless, as this study demonstrated, a certain amount of pig data can be gleaned from the FBS, and between-year comparisons of the various measures are valid. As it happens, the general level of profitability in the two years studied here was rather similar, but differences and trends could be noted, some of which could be confirmed by reference to other data in the public domain and the recently completed 2002-03 pig Special Economic Study.

Evidence that specialist breeders fared better than finishers in profitability terms in the 2001-02 and 2002-03 FBS years is in accord with the Special Economic Study, as is the new current general level of pigs reared per sow per year of less than 20, a figure that would have been regarded as very disappointing before Post-weaning Multi-systemic Wasting Syndrome (PMWS), and the associated Porcine Dermatitis Nephropathy Syndrome moved into the national pig herd.

1. INTRODUCTION

For some years, DEFRA's Commissioned Work Programme (CWP) in Agricultural Economics has embraced the Farm Business Survey (FBS) and a series of Special Economic Studies (Special Studies) of commodity production and other farm activities. The work is undertaken under contract by eight university and college Centres in England, under common procedures and to common standards.

The Farm Business Survey establishes the financial and many physical parameters of whole farm businesses on an ongoing basis, enabling examination of a longitudinal sample over two or more years, and comparison of groups of similar farms (e.g. Lowland Cattle and Sheep farms) on a year to year basis. Perhaps inevitably, given the constraints of retaining farmer cooperation in a voluntary survey, the detail of the information on individual farm enterprises is somewhat restricted and little analysis of specific farming activities has in the past been attempted.⁴

By contrast, Special Studies (e.g. the 2002-03 Special Study of the Economics of Milk Production) examine both the financial and physical production aspects of specific farm enterprises in considerable detail, and the published report on each such study examines the financial structure of production of that particular enterprise down to net margin level, detailing also many measures of physical production useful for benchmarking purposes. However, Special Studies most usually cover just one year and they are repeated at a frequency that might be considered less than desirable for industry monitoring and policy making purposes.

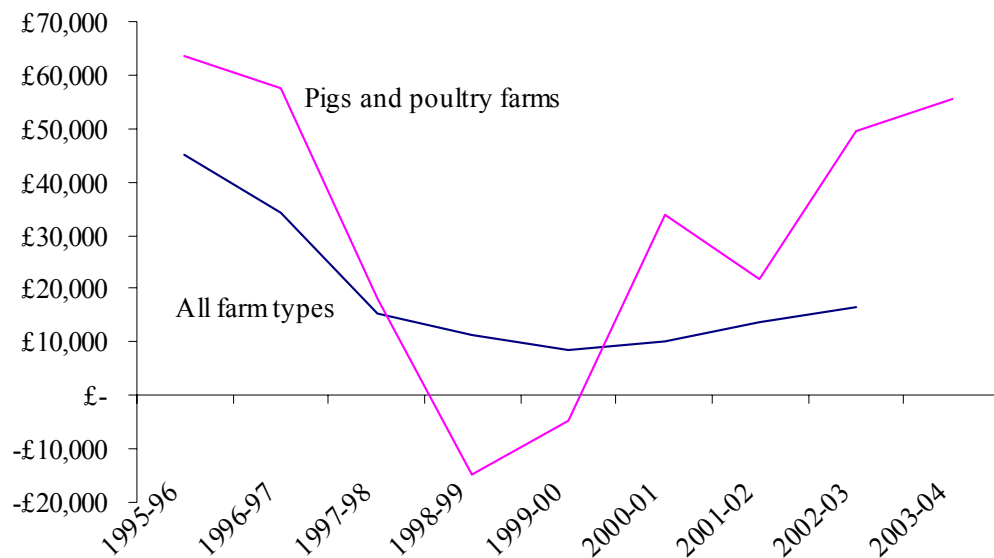
Contemporary financial pressures are such that even that frequency of occurrence of Special Studies, which is arguably less than satisfactory, will not be sustained into the medium term future. In any case, there is an important need to maximise the usefulness of information available from the FBS. On a national basis, DEFRA publishes *Farm Accounts in England* and *Agriculture in the United Kingdom* (available in hard copy form and on DEFRA's website) and many of the CWP Centres publish regional reports and handbooks, but many of those acquainted with the nature and volume of data collected for the FBS feel that it is an under-utilised resource even in its present form, and that the scope and usefulness of the data has potential for extension.

The objective of the present study is to bring into the public domain detailed information on pig production systems collected under the Farm Business Survey. As will be seen, the volume of data is not inconsequential and it relates to a significant number of farms widely distributed throughout England and Wales. (Only a few of the FBS farms with pigs are located in Wales, but that is a true reflection of the overall situation with regard to pigs in Wales). If the study was to be extended over a number of years, valuable additional information could be gleaned on changes between years and over time both on samples of the same farms and within tightly defined groups of similar farms. No doubt some relatively modest changes and extensions to the information gathered could also expand the usefulness of the information collected and published, particularly for the purposes of benchmarking on nationally recognised definitions of financial and physical performance.

⁴ A notable exception is the horticultural sector as recorded by the FBS, the subject of an annual report, *Horticultural Business Data*, prepared and published by the Department of Agricultural and Food Economics at the University of Reading.

As it happens, the economic context to the two financial years on which this review is based illustrates not only the cyclical nature of profitability in pig production (the ‘pig cycle’) but also the severity of recent recessions with the consequent pressures on business sustainability. Some of the consequences of these economic changes are discussed in the following section. Using information drawn from the Farm Business Survey (FBS), Figure 1 charts the changes in real (that is, adjusted for inflation) Net Farm Incomes (NFI) on farms classified as Pigs and poultry farms over the period from 1995, together with similar results for all full-time farms.

Figure 1 Net Farm Income by farm type, real terms, 1995-96 to 2003-04



Note: 2003-04 data is provisional for the Pigs and poultry farm type and is as yet unavailable for All farm types

That the intensive livestock sector is characterised by often dramatic swings in profitability, sometimes within the space of little more than a few months, cannot be doubted from these data. The chart also illustrates the changing pattern of profitability *relative to the industry as a whole*: over this eight year period, the index of relative profitability for Pigs and poultry farms ranged between plus 3.3 (i.e. an average NFI some 3.3 times larger than the ‘all farms’ average) to minus 2.3. This short review focuses on the detailed financial results of specialist Pigs and poultry farms in 2001-02 and 2002-03 which, in terms of NFI, can be seen to be close to the average level of the past few years.

2. THE ECONOMIC ENVIRONMENT FOR PIG PRODUCTION IN THE 2001-02 AND 2002-03 FBS YEARS

By comparison with many other years in the past decade or more, pig prices in the 2001-02 and 2002-03 FBS years were relatively stable (Figure 2 and Table 1). The average deadweight price was marginally lower in 2001-02 than in the previous year, but it was nevertheless better than in any other year since 1997-98, and the peak price achieved in the first week of July 2001 was the highest since October 1997. The 2002-03 year was not quite so good, with a somewhat lower peak, a lower low point and lower average.

Figure 2 Deadweight Average Pig Price (DAPP)⁵, February 1993 to October 2004

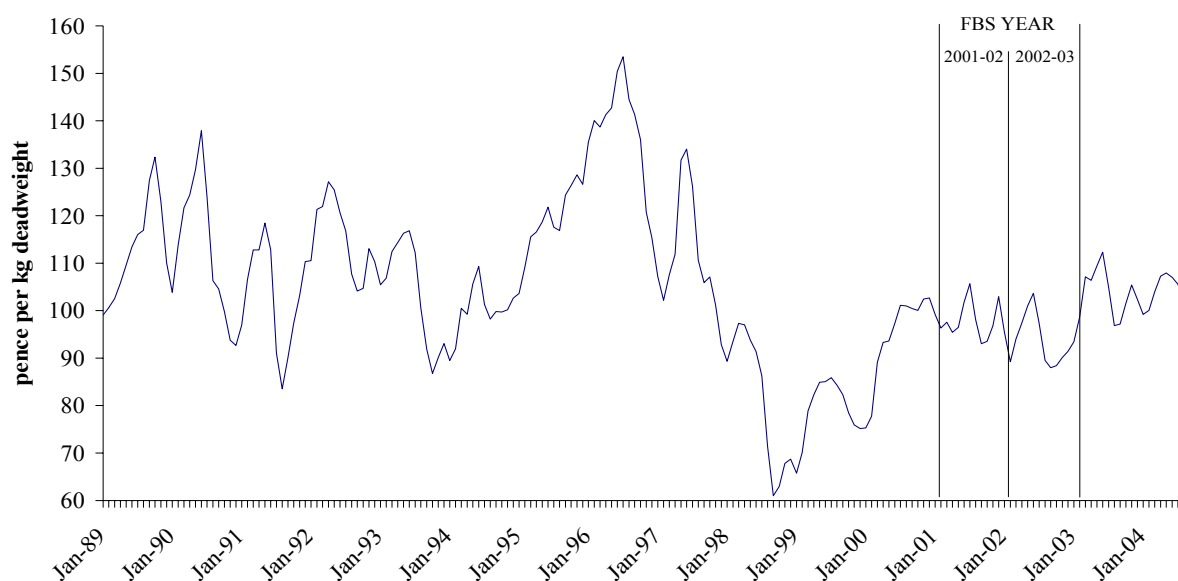


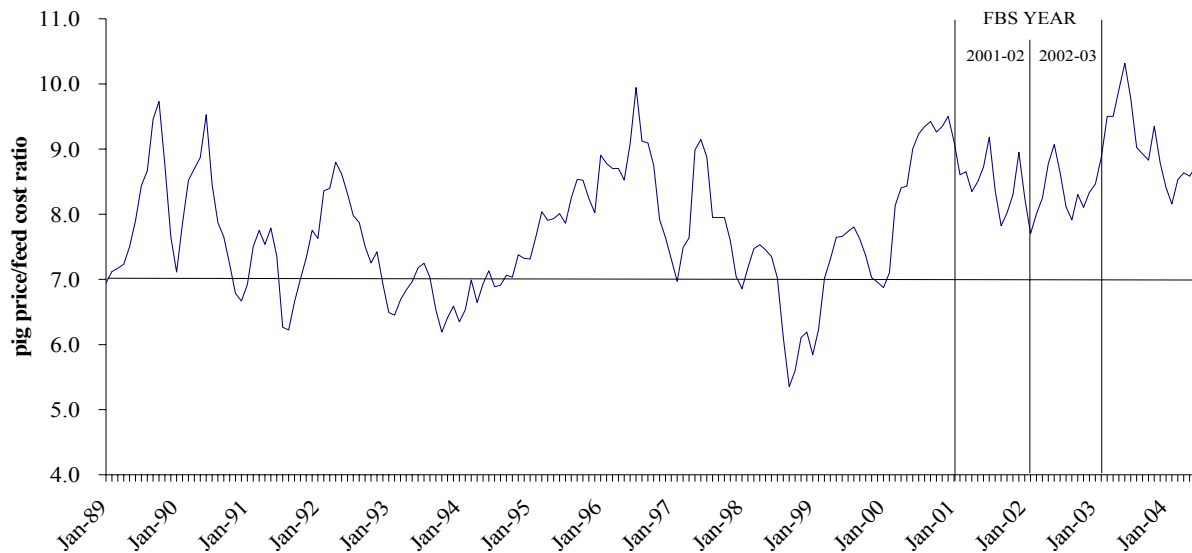
Table 1 Annual average, lowest, highest and variation in monthly DAPP, years ended February 1993 to 2004 and Pig price:feed cost ratio

Year ended February	DAPP (monthly average)				Pig price:feed cost ratio
	Average	Lowest	Highest	Variation	
1993	113.7	104.1	127.1	23.0	8.1
1994	101.3	86.7	116.8	30.1	6.9
1995	102.4	98.2	109.3	11.1	6.9
1996	124.0	115.6	140.0	24.5	7.8
1997	132.7	102.2	153.5	51.3	7.9
1998	109.3	89.3	134.0	44.7	7.1
1999	77.8	61.0	97.3	36.3	5.8
2000	80.5	75.1	85.9	10.7	7.0
2001	98.0	89.1	102.7	13.6	9.1
2002	97.2	93.0	105.8	12.6	8.4
2003	94.4	88.0	103.7	15.7	8.4
2004	103.6	96.8	112.3	15.5	9.2

⁵ DAPP, Deadweight Average Pig Price. This is the latest name and definition for the best available measure of changes over time in finished pig prices. Care is required in making strict comparisons, the series reproduced here has seen two changes of name and adjustments of definition over the period portrayed.

There were some sharp price movements during the two years, with two distinct price peaks and three troughs in the first year, one of each in the second. The price trend across the two years was mostly downward (though with a useful rise from September 2002 towards what proved to be a new peak in the 2003-04 year), so it is understandable if pig producers felt that they were still operating in an unstable price environment and that prospects for the future were far from secure.

Figure 3 Pig price/feed cost ratio, monthly February 1993 to June 2004



Whilst it is true that pig farmers tend to be always aware of the prevailing selling prices for their pigs, and that their optimism or otherwise about the prospect of profit varies with pig prices, the price of finished pigs is rather less than half the profitability equation and most pig producers are well aware of that. Figure 3 shows the changing relationship of finished pig prices to the cost of a typical finishing ration over the years since 1989. The boundaries of the two FBS years covered by this report are marked by the vertical lines towards the right hand side.

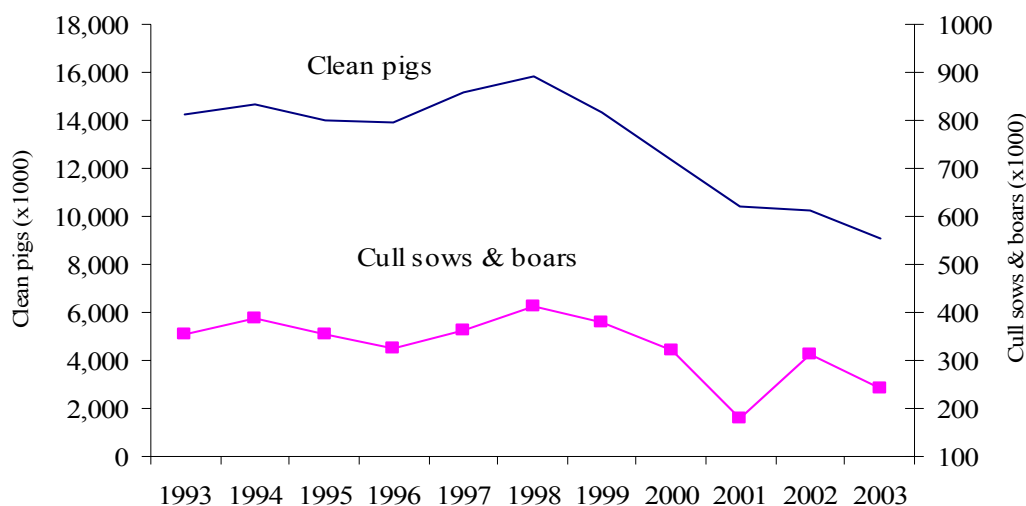
Because feed typically represents about 70 per cent of the cost of producing a pig, the pig price:feed cost ratio serves as a broad indicator of general levels of profitability. The ratio illustrated is produced by dividing the cost per kg of a typical pig finishing ration into the return, in pence, for a deadweight kg of pigmeat. Thus, if the cost of a finishing ration is £125 a tonne and DAPP is 100 pence, the ratio is 8:1. The ratio would still be 8:1 if feed cost was £140 at tonne and the DAPP 112 pence, but if feed was £140 at tonne and DAPP 100 pence, the ratio would be 7.14:1.

Comparison of Figure 3 with Figure 2 indicates that short-term changes in profitability, during the 2001-02 and 2002-03 FBS years, and at other times, have been very much in line with changes in finished pig prices, but that change in feed price has modified trends over the longer term. In particular, whereas 2001-02 was only one per cent worse than 2000-01 in terms of average pig price, a six per cent increase in average feed cost detracted very much from the pig price/feed cost ratio. Nevertheless, the ratio was never worse than 7.7:1, which by comparison with the not-so-distant past was less than disastrous. Average pig price was a further three per cent lower in 2002-03, but because of declining feed costs the average pig price:feed cost ratio remained the same at 8.4:1.

It should also be noted that the average pig price:feed cost ratio over those two years compared well with all but the best periods of profitability in the years since 1993, one of which was the year 2000-01. A very significant reduction in feed cost over the past decade accounts for what appears to be a long-term trend of improvement in the average pig price:feed cost ratio. The average pig price was, for instance, 14.5 per cent lower in 2001-02 than in 1992-93, but feed cost was reduced by 22 per cent. However, that does not by any means indicate that pig production was necessarily more profitable overall. Other costs, particularly labour, have over the same period assumed increasing importance. In addition, and uniquely in contemporary experience, there have been some deleterious shifts in technical production efficiency, mainly due to widespread disease problems.

Leaving longer-term changes aside, sharp changes in the selling prices and profitability of pigs have long been associated with changes in the pig population and numbers of pigs coming to market. The very low prices prevailing in 1998-99 were clearly associated with the higher than normal numbers of clean pigs slaughtered in that period (Figure 4). The price spike in 1996 might also be seen to be related to the reduced numbers of pigs slaughtered around that time.

Figure 4 Clean pigs and cull sows and boars slaughtered annually, 1993 to 2003



The second data series seen in Figure 4 represents numbers of sows and adult boars slaughtered. Movements in that series are broadly similar to those of the clean pigs series, with the marked exception of the 2001 Foot and Mouth Disease hiatus.

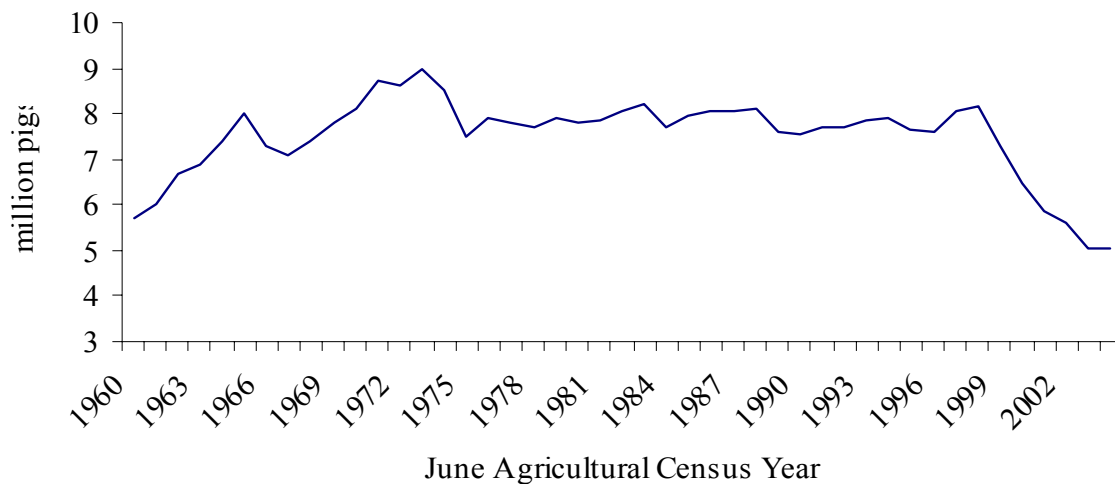
Following the long period of severe unprofitability in 1998 and 1999, the reduction in the pig population, and thus in pig slaughterings seen in Figure 3, came as no surprise. However, the extent to which pig numbers and slaughterings have continued to decline over a period exceeding five years, despite the considerable measure of recovery in the profitability of pig production seen in Figure 2, is without precedent in the post war period.

The published June Agricultural Census figures indicate that the decline in the pig population was not so great between June 2001 and June 2002 as for three years previously, but the trend returned to a steeper downward plunge between June 2002 and June 2003. Even by June 2002, the UK pig population, at 5.6 million pigs, was below that of June 1960, or of any time since.

The most recent Agricultural Census indicates that pig numbers were at last more or less stable between June 2003 and June 2004, declining by less than 9,000, out of a population of a little over five million (less than 0.2 per cent). Further evidence that pig numbers might at last be finding a new stability is found in the numbers of clean pigs slaughtered in the third quarter of 2004; taken over the three months as a whole, the number was almost exactly the same as one year earlier.

The reduction in pig numbers between June 1998 and June 1999 brought the industry back from its 1997-98 peak to a size closer to its longer term average. In view of the effect that the larger pig population of 1997-98 had on pig prices and profitability, it could be argued that initial reduction represented a desirable trimming of surplus capacity. However, the major decline in pig numbers over the past five years clearly reflects a much more fundamental restructuring of the industry than that, especially when considered against the degree of recovery of pig prices and profitability seen in Figures 2 and 3.

Figure 5 UK pig population, June 1960 to June 2004



Despite greatly improved efficiency of production (set back, but not eradicated by current disease problems) and heavier average carcase weights, the volumes of home-produced pigmeat and the proportion of the home market held by home-produced pigmeat are well below the levels achieved over many years past.

In addition to Foot and Mouth Disease, pig production has been affected by the implementation of a ban on the use of stalls and tethers as accommodation for non-lactating sows (from 1st January 1998), and an outbreak of Swine Fever in Eastern England (16 cases, August to December 2000). More recently, (from about 1998 and still ongoing) a new wasting disease, Post Weaning Multi-systemic Wasting Syndrome (PMWS), and the associated Porcine Dermatitis Nephropathy Syndrome have affected many pig herds. The latter two diseases have a seriously depressing effect on volume of pig output and the efficiency of production and, in common and in tandem with the disease and other factors above, have accelerated the exit from the industry of significant numbers of producers.

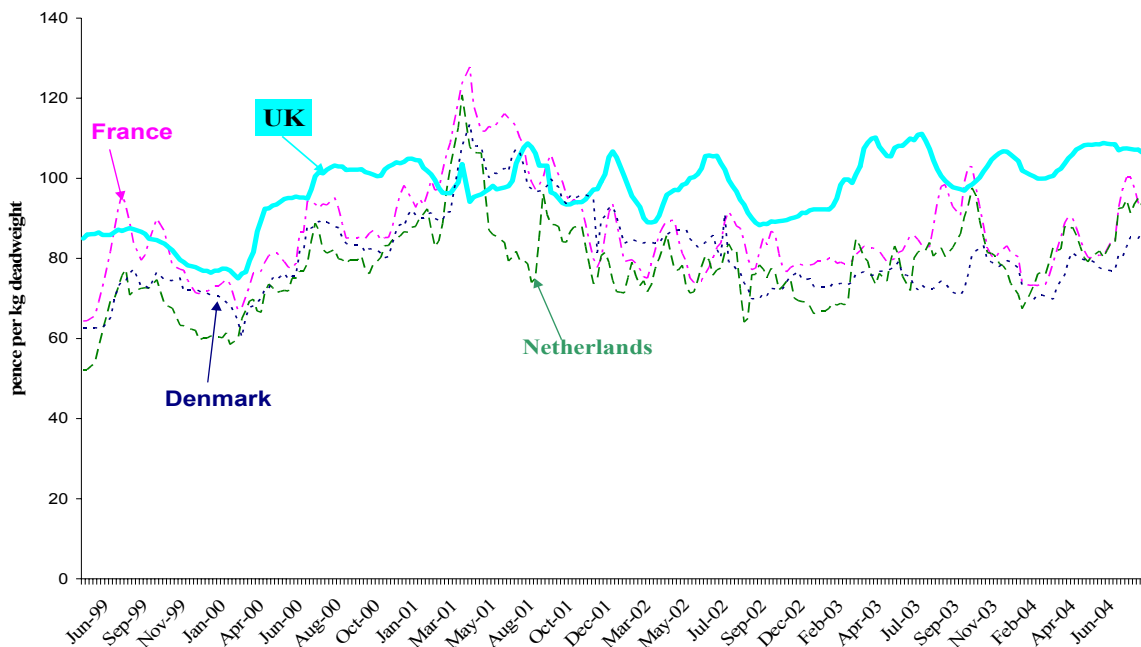
The Pig Industry Restructuring Scheme (PIRS), a part of the Government's Action Plan for Farming, agreed between the Prime Minister and industry leaders in March 2000, has also had some effect on the size and structure of the industry. The objective of the PIRS was to facilitate the longer-term development of an efficient and sustainable pig sector within the UK agricultural industry. Its component parts were the Pig Outgoers 1 and 2 and Pig

Ongoers schemes. The Outgoers schemes sought to reduce production capacity through the removal of less efficient producers, thereby improving core efficiency within the industry. Outgoers had to clear their holdings of breeding pigs by the end of August 2001 and remain out of pig production for a period of not less than ten years. The Ongoers Scheme was intended to assist producers wishing to continue in production to overcome any competitive disadvantages. Larger holdings taking advantage of the scheme were required to decommission, or render unusable for pig breeding, 16 per cent of their June 1998 sow capacity until July 2003.

To what extent the downsizing of the national pig breeding herd and the number of holdings on which it is located during the seventeen months between March 2000 and August 2001 was attributable to the PIRS, and to what extent it would have happened anyway, as a result of other factors, is a matter for debate and further research. Whether or not the PIRS has resulted in a more efficient industry also requires objective investigation, though identifying the effects of the Scheme separately from those of other factors, in an ongoing dynamic situation, is clearly not easy. Similarly, it will be difficult, even over the longer term, to determine if the pig population, prices and profitability have been stabilised by the Scheme.

Whilst the quantity of pigmeat produced in the UK decreased by 33 per cent between 1998 and 2003, the quantity consumed remained much the same. The shortfall was made up by increased imports of both pork and bacon, almost exclusively from other European Union countries.

Figure 6 Pig prices, April 1999 to July 2004, in the UK and three other major EU pig producing countries



Many pig producers would unhesitatingly blame the strength of the pound Sterling, relative to the currencies of our major competitors in the pigmeat market, for the very large increase in the share of the UK market held by imported pigmeat. Figure 6 appears to lend some weight to that analysis, the UK farm gate sale price of pigs, expressed in pence per deadweight kg, being consistently above that in our major competitor countries for most of

the time between April 1999 and the present. One could however argue, on the same evidence, that UK pigmeat was clearly well capable of commanding a premium on the home market; a crumb of comfort and a pointer for the future, perhaps.

Pigmeat was available relatively cheaply in countries such as Denmark and the Netherlands. From the point of view of UK pig producers, the Euro, which came into being on 1st January 2001, has so far made little practical difference, the UK having remained outside the Eurozone.

3. ANALYSIS OF SURVEY RESULTS

Taking the two Farm Business Survey (FBS) years 2001-02 and 2002-03 separately, all farms within the survey were examined to determine if they had any pigs at all in the respective year. (The average year end falls in February, individual year ends range from 31st December to 30th April). As can be seen from Table 2, 165 farms recorded for the 2001-02 year were found to have pigs, of which 63 were classified for FBS purposes as specialist Pigs and poultry farms. For the 2002-03 year the total number of recorded farms with pigs increased to 183, but those classified as Pigs and poultry farms decreased by one to 62⁶. The classification indicates farms that derive more than 66 per cent of their Standard Gross Margin from pig and/or poultry production. In practice, few of the Pigs and poultry farms with pigs derived significant output from any enterprise other than pigs.

Table 2 Distribution of FBS farms with pigs by farm type and EU region

Farm type	N England	W England	E England	Wales	All regions
2001-02					
Cattle & sheep (LFA)	-	2	2	2	6
Cattle & sheep (lowland)	1	2	3	-	6
Cereals	8	2	11	-	21
Dairy	2	5	4	-	11
General cropping	7	1	13	-	21
Horticulture	-	-	-	-	-
Mixed	8	11	18	-	37
Pigs & poultry	20	14	29	-	63
Other	-	-	-	-	-
All farms	46	37	80	2	165
2002-03					
Cattle & sheep (LFA)	-	1	2	2	5
Cattle & sheep (lowland)	2	5	5	-	12
Cereals	7	2	13	-	22
Dairy	4	5	2	-	11
General cropping	6	1	14	-	21
Horticulture	-	-	1	-	1
Mixed	11	14	22	-	47
Pigs & poultry	19	15	28	-	62
Other	-	-	1	1	2
All farms	49	43	88	3	183

In 2001-02, 102 other farms, in six other farm classifications had pigs, including six on Less Favoured Area (LFA) Cattle and sheep farms, of which two were in Wales. In 2002-03, the number of recorded farms with pigs that were not classified as Pigs and poultry was increased to 121 and the number of farm classifications other than Pigs and poultry was eight, one holding classified as Horticultural and two that went unclassified having kept pigs. In the latter year the number of (LFA) Cattle and sheep farms with pigs increased to five, of which the Welsh figure remained two. For that year, Wales gained a third recorded farm with pigs, the farm type not being determined.

⁶ The increase in number of holdings with pigs was against the overall trend recorded by the annual June Agricultural Censuses. Regional centres contributing data to the FBS had no particular reason to recruit additional farms with pigs, and it is noted that the number of farms classified as being of the Pigs and poultry type remained relatively stable, declining by one from 63 to 62.

The regional distribution of farms with pigs was much as would be expected, with East England leading the field, North England following and West England also making a significant showing, but Wales barely registering. North, West and East England and Wales are the standard EU regions, as illustrated in Figure 7.

Figure 7 EU regions, England and Wales



Table 3 Distribution of FBS farms with pigs by farm type and form of business

Farm type	Sole trader	Partnership		Farming company	Other	All business types
		Family	Other			
2001-02						
Cattle & sheep (LFA)	1	5	-	-	-	6
Cattle & sheep (lowland)	4	2	-	-	-	6
Cereals	7	13	-	1	-	21
Dairy	6	5	-	-	-	11
General cropping	5	16	-	-	-	21
Horticulture	-	-	-	-	-	-
Mixed	16	18	-	3	-	37
Pigs & poultry	39	19	1	4	-	63
Other	-	-	-	-	-	-
All farms	78	78	1	8	0	165
2002-03						
Cattle & sheep (LFA)	1	4	-	-	-	5
Cattle & sheep (lowland)	11	1	-	-	-	12
Cereals	11	10	-	1	-	22
Dairy	4	7	-	-	-	11
General cropping	4	16	-	1	-	21
Horticulture	-	1	-	-	-	1
Mixed	25	20	-	2	-	47
Pigs & poultry	40	19	-	3	-	62
Other	-	1	1	-	-	2
All farms	96	79	1	7	0	183

The FBS gathers information on type of business and the results for the two years for the farms with pigs are shown in Table 3. The great majority of all farms are seen to operate either as sole traders or family partnerships, that being the case with all farm types. Averaging the two years, farming companies occurred at the rate of four per cent overall, six per cent of the Mixed and Pigs and poultry farm types, but the numbers are too small for any statistical inference to be drawn with confidence. Similarly, it would be unsafe to base any conclusion on the decline between the two years in the proportion of total farms with pigs that were operated by farming companies.

In both years, more than 90 per cent of farms in the survey that had pigs were operating on just one holding, with all of the increase in total number of farms with pigs recorded gravitating to the single holding category (Table 4). Farms operating on two holdings declined by one and those involving three holdings increased by one. Whilst it is undoubtedly the case that some farm businesses with pigs operate on more than three holdings, none of those were represented within the FBS in either the 2001-02 or the 2002-03 years.

Table 4 Distribution of FBS farms with pigs by farm type and number of holdings

Farm type	1 holding	2 holdings	3 holdings	Total
2001-02				
Cattle & sheep (LFA)	6	-	-	6
Cattle & sheep (lowland)	6	-	-	6
Cereals	19	-	-	21
Dairy	10	1	-	11
General cropping	18	3	-	21
Horticulture	-	-	-	-
Mixed	33	4	-	37
Pigs & poultry	59	2	2	63
Other	-	-	-	-
All farms	151	10	4	165
2002-03				
Cattle & sheep (LFA)	5	-	-	5
Cattle & sheep (lowland)	12	-	-	12
Cereals	20	-	2	22
Dairy	10	1	-	11
General cropping	17	2	2	21
Horticulture	1	-	1	2
Mixed	43	3	-	46
Pigs & poultry	59	3	-	62
Other	2	-	-	2
All farms	169	9	5	183

Between the two years, the number of farms with organic enterprises increased from seven to eight. In both years there were five instances in which they included the pig enterprise (Table 5). However, whilst two specialist Pigs and poultry farms had organic enterprises, in no case was the pig enterprise organic.

Also in both years, three farms were in the process of conversion to organic production, one of which was classified as specialist Pigs and poultry.

Table 5 FBS farms with pigs with organic enterprises or with land in organic conversion

Farm type	organic enterprises	land in organic conversion
2001-02		
Cattle & sheep (LFA)	-	-
Cattle & sheep (lowland)	1	
Cereals	2	1
Dairy	1	-
General cropping	1	
Horticulture	-	-
Mixed	-	1
Pigs & poultry	2	1
Other	-	-
All farms	7	3
2002-03		
Cattle & sheep (LFA)	-	-
Cattle & sheep (lowland)	1	-
Cereals	2	2
Dairy	1	-
General cropping	1	-
Horticulture	-	-
Mixed	1	-
Pigs & poultry	2	1
Other	-	-
All farms	8	3

The Utilised Agricultural Area (UAA) of farms with pigs ranged from nil to more than 1200 hectares with two farms in 2001-02 and three in 2002-03 farming a part of their total land area under share cropping arrangements. Pig herds housed indoors make little call on UAA, so it was no surprise to find that the specialist Pigs and poultry farms occupied the smallest average area of UAA (Table 6), with 40 and 42 farms, respectively in the two years (63 and 68 per cent of farms in that group) having a UAA of less than 30 hectares. In fact, seven farms in the Pigs and Poultry group in 2001-02 and six in 2002-03 (11% and 10%) had no UAA at all (Table 7), and 22 and 16, respectively, (35% and 26%) had less than five hectares.

Table 6 Utilised Agricultural Area of FBS farms with pigs, by farm type

Farm type	Utilised Agricultural Area - hectares				Average
	Less than 30	30 to 69.9	70 to 149.9	150 and more	
2001-02					
Cattle & sheep (LFA)	1	2	1	2	105
Cattle & sheep (lowland)	1	2	3	-	71
Cereals	-	3	7	11	171
Dairy	2	4	5	-	74
General cropping	-	1	7	13	283
Horticulture	-	-	-	-	-
Mixed	2	9	13	13	143
Pigs & poultry	40	17	3	3	17
Other	-	-	-	-	-
All farms	46	38	39	42	115
2002-03					
Cattle & sheep (LFA)	1	1	1	2	109
Cattle & sheep (lowland)	2	3	7	-	78
Cereals	-	3	9	10	168
Dairy	-	6	5	-	79
General cropping	-	1	6	14	290
Horticulture	-	1	-	-	44
Mixed	8	11	15	13	122
Pigs & poultry	42	15	4	1	26
Other	1	1	-	-	36
All farms	54	42	47	40	107

Table 7 indicates the proportions of UAA that were owner-occupied. Of all the farm types shown, and but for the LFA Cattle and Sheep farms, the Pigs and poultry farms showed the greatest tendency towards owner-occupation, with an average of 75 per cent and 73 per cent of UAA owner-occupied in the two years. The decline from 11 per cent to five per cent of Pigs and poultry farms where the UAA was 100 per cent tenanted is substantial and begs the question, were 100 per cent tenanted Pigs and poultry farms for some reason more inclined to cease production, or otherwise drop out of the survey, than those with at least some owner-occupied area? Unfortunately, the numbers involved were too small for any statistically robust conclusions to be drawn.

Table 7 Percent of Utilised Agricultural Area that is Owner-occupied, FBS farms with pigs, by farm type

Farm type	% of Utilised Agricultural Area Owner-occupied					No UAA
	0	>0 to <35	35 to 90	90 and over	Average	
2001-02						
Cattle & sheep (LFA)	-	-	2	4	90	-
Cattle & sheep (lowland)	-	1	1	4	64	-
Cereals	4	4	2	11	55	-
Dairy	3	1	5	2	51	-
General cropping	4	2	7	8	62	-
Horticulture	-	-	-	-	-	-
Mixed	2	6	11	18	67	-
Pigs & poultry	7	1	7	41	75	7
Other	-	-	-	-	-	-
All farms	20	15	35	88	64	7
2002-03						
Cattle & sheep (LFA)	-	-	2	3	89	-
Cattle & sheep (lowland)	3	4	2	3	33	-
Cereals	6	4	3	9	49	-
Dairy	2	-	7	2	58	-
General cropping	3	-	9	9	69	-
Horticulture	-	-	-	1	91	-
Mixed	6	5	13	23	63	-
Pigs & poultry	3	3	6	44	73	6
Other	1	-	-	1	72	-
All farms	24	16	42	95	62	6

In 2001-02, nine farms with pigs were located wholly or partially in an Environmentally Sensitive Area (ESA), a Nitrogen Vulnerable Zone (NVZ) or a Moorland area, a figure that increased to 11 in 2002-03 with the addition of two more pig farms in an ESA (Table 8). One Pigs and poultry farm in 2001-02 and two in 2002-03 were almost entirely within an ESA, but did not have a management agreement for the land within the ESA. All other farms with pigs with land in an ESA had at least some that was subject to a management agreement. In neither year did either farm with pigs in an NVZ or a Moorland area (one in each in both years) have a management agreement.

Table 8 FBS farms with pigs in an ESA, NVZ or Moorland area

Farm type	in ESA	in NVZ	Moorland area
2001-02			
Cattle & sheep (LFA)	2	-	1
Cattle & sheep (lowland)	-	-	-
Cereals	-	1	-
Dairy	-	-	-
General cropping	2	-	-
Horticulture	-	-	-
Mixed	1	-	-
Pigs & poultry	2	-	-
Other	-	-	-
All farms	7	1	1
2002-03			
Cattle & sheep (LFA)	1	-	1
Cattle & sheep (lowland)	1	-	-
Cereals	-	1	-
Dairy	-	-	-
General cropping	1	-	-
Horticulture	-	-	-
Mixed	4	-	-
Pigs & poultry	2	-	-
Other	-	-	-
All farms	9	1	1

Table 9 provides an indication of the scale of operation of farms with pigs, in terms of labour employed. Actual labour hours recorded, including those of the farmer, spouse, and any other unpaid labour, have been divided by 2400 to arrive at whole-time equivalent Standard Man Years.

Despite the increase between the two years in number of FBS farms with pigs, the number providing only part time employment (i.e. less than one whole time equivalent standard man year) decreased from 19 to 14, i.e. from 12 per cent to eight per cent of the sample. The number accounting for between one and two whole time equivalents increased from 46 to 61, or from 28 to 33 per cent. Many of the latter were essentially manned by one person, single-handedly working considerably more than 2400 hours a year, with a small contribution of relief or help as necessary. On three farms in 2001-02 and nine in 2002-03, in both years with two of them in the Pigs and poultry group, only one worker was recorded in total – working unaided for as much as 4100 hours in the year. Sixty-one per cent of farms in 2001-02, 59 per cent in 2002-03 (62% and 55% of Pigs and poultry farms) had an input of two or more Standard Man Years; 16 per cent, falling to 13 per cent (13% falling to 11% of Pigs and poultry farms) an input of five or more.

Table 9 **Distribution of Standard Man Years per farm, by farm type**

Farm type	Standard Man Years					
	<1	1 to 1.9	2 to 2.9	3 to 4.9	5 to 9.9	10&+
2001-02						
Cattle & sheep (LFA)	1	2	2	1	-	-
Cattle & sheep (lowland)	-	3	3	-	-	-
Cereals	3	10	4	3	1	-
Dairy	-	5	2	2	2	-
General cropping	1	6	5	3	4	2
Horticulture	-	-	-	-	-	-
Mixed	5	5	8	10	6	3
Pigs & poultry	9	15	18	13	7	1
Other	-	-	-	-	-	-
All farms	19	46	42	32	20	6
2002-03						
Cattle & sheep (LFA)	-	1	2	2	-	-
Cattle & sheep (lowland)	-	5	5	2	-	-
Cereals	2	13	5	1	1	-
Dairy	-	2	6	1	2	-
General cropping	1	5	6	3	3	3
Horticulture	-	1	-	-	-	-
Mixed	2	14	12	11	6	2
Pigs & poultry	9	19	12	15	7	-
Other	-	1	1	-	-	-
All farms	14	61	49	35	19	5

Table 10 will cause no surprise in as much as it indicates that the great majority of farms in farm types other than Pigs and poultry derived no more than 25 per cent of their farm output from pigs, though it is of interest to note that in both years four Mixed farms (11% and 9% of the Mixed farm group) derived more than 75 per cent of total farm output from pigs. That 50 of 63 Pigs and poultry farms (79%) in 2001-02 and 51 of 62 in 2002-03 (82%) derived not less than 75 per cent of farm output from pigs is no surprise either. Seven Pigs and poultry farms (11%) and eight in 2002-03 (13%) derived less than 50 per cent of farm output from pigs, of which two in each year (3%) made less than 25 per cent of farm output from that source.

Of course, gross margins are not the same thing as output, and the Standard Gross Margins for various farm enterprises, by which the farms are classified, are likely to have a rather different relationship to each other than the outcome in terms of either relative output or gross margin on a particular farm in a particular year. A good or bad year for pigs, relative to, say, arable cropping, will tend to distort the pattern compared to what might have been expected in view of the basic farm classifications. The relatively good or bad year might apply generally across all farms, or it might apply specifically to a few individual farms.

It would appear that in both 2001-02 and 2002-03 comparatively few (in the case of Pigs and poultry farms with less than 50 per cent of output derived from pigs and Mixed farms with more than 75 per cent of output from pigs) suffered a particularly bad or good year relative to their other enterprises. In the case of some of the Pigs and poultry farms there would, of course, have been few, if any, other enterprise outputs to complicate the issue.

Table 10 Percent of farm output derived from pigs, by farm type

Farm type	% of farm output derived from pigs				
	<25	25 to 49.9	50 to 74.9	75 to 89.9	90&+
2001-02					
Cattle & sheep (LFA)	4	2	-	-	-
Cattle & sheep (lowland)	6	-	-	-	-
Cereals	18	2	1	-	-
Dairy	10	1	-	-	-
General cropping	13	7	1	-	-
Horticulture	-	-	-	-	-
Mixed	13	7	13	4	-
Pigs & poultry	2	5	6	15	35
Other	-	-	-	-	-
All farms	66	24	21	19	35
2001-03					
Cattle & sheep (LFA)	4	1	-	-	-
Cattle & sheep (lowland)	12	-	-	-	-
Cereals	17	4	1	-	-
Dairy	10	1	-	-	-
General cropping	14	6	1	-	-
Horticulture	1	-	-	-	-
Mixed	16	13	14	4	-
Pigs & poultry	2	6	3	17	34
Other	-	1	-	-	1
All farms	76	32	19	21	35

Table 11 indicates the percent of livestock output that was derived from pigs. Outside the Dairy and the two Cattle and sheep farm types, most farms with pigs did not have significant value of livestock output that was sourced from enterprises other than pigs. The great majority of farms classified as Pigs and poultry derived more than 50 per cent of livestock output (by value) from pigs. In fact, 43 of the 63 Pigs and poultry farms in 2001-02 and 50 of the 62 in 2002-03 derived 100 per cent of their livestock output from pigs, as did 34 farms of other types in 2001-02 and 38 in 2002-03.

Only three Pigs and poultry farms in 2001-02 and one in 2002-03 had any poultry output at all, of which just one in each year derived more than 50 per cent of livestock output from poultry.

Table 11 Percent of livestock output derived from pigs, by farm type

Farm type	% of livestock output derived from pigs				
	<25	25 to 49.9	50 to 74.9	75 to 89.9	90&+
2001-02					
Cattle & sheep (LFA)	4	-	2	-	-
Cattle & sheep (lowland)	4	2	-	-	-
Cereals	1	5	2	2	11
Dairy	10	1	-	-	-
General cropping	5	2	5	1	8
Horticulture	-	-	-	-	-
Mixed	9	5	4	2	17
Pigs & poultry	1	1	2	4	55
Other	-	-	-	-	-
All farms	34	16	15	9	91
2002-03					
Cattle & sheep (LFA)	4	1	2	-	-
Cattle & sheep (lowland)	11	1	-	-	-
Cereals	1	6	-	-	13
Dairy	10	1	-	-	-
General cropping	3	1	7	-	10
Horticulture	-	-	-	-	1
Mixed	10	9	9	2	17
Pigs & poultry	1	1	-	2	58
Other	-	1	-	-	1
All farms	40	21	18	4	100

Farms producing pigs were classified (Tables 12 and 13) according to production type and allocated to one of three broader production types, non-contract producers, contract producers and those mixing contract and non-contract production. Within each broad classification, the production codes were as follows:-

- | | |
|---|----|
| a) Outdoor breeding selling - weaners | 65 |
| - finished pigs | 66 |
| - mixed weaners and finished pigs | 67 |
| b) Indoor breeding selling - weaners | 68 |
| - finished pigs | 69 |
| - mixed weaners and finished pigs | 70 |
| c) Mixed indoor/outdoor breeding | 71 |
| d) Buying weaners, selling finished pigs | 72 |
| e) Mixed breeding/buying weaners, selling finished pigs/other | 73 |

In 2001-02, 73 per cent of all farms with pigs were non-contract producers, producing and selling pigs on their own account, 25 per cent were contract producers, caring for pigs that they did not own for the benefit of a third party, and two per cent combined the two systems of ownership (Table 12). At 78, 19 and three per cent, the division between non-contract, contract and mixed production was broadly similar for the Pigs and poultry group.

Table 12 Type of pig production, 165 FBS farms, by farm type, 2001-02

	Pig production type code									All types
	65	66	67	68	69	70	71	72	73	
Non-contract producers										
Cattle & sheep (LFA)	-	-	-	2	1	1	-	-	1	5
Cattle & sheep (lowland)	-	3	-	-	-	-	1	-	1	5
Cereals	-	-	1	1	9	1	-	2	-	14
Dairy	-	-	2	-	4	2	1	-	-	9
General cropping	-	1	-	2	6	1	-	-	-	10
Horticulture	-	-	-	-	-	-	-	-	-	-
Mixed	-	1	4	-	15	4	2	1	1	28
Pigs & poultry	1	3	2	2	33	4	-	-	4	49
Other	-	-	-	-	-	-	-	-	-	-
Sub total	1	8	9	7	68	13	4	3	7	120
Contract producers										
Cattle & sheep (LFA)	-	-	-	1	-	-	-	-	-	1
Cattle & sheep (lowland)	-	-	-	-	-	-	-	-	-	-
Cereals	1	-	-	-	-	-	-	5	1	7
Dairy	-	-	-	-	1	-	-	-	1	2
General cropping	-	-	-	-	1	1	-	6	2	10
Horticulture	-	-	-	-	-	-	-	-	-	-
Mixed	-	-	-	-	-	6	-	-	3	9
Pigs & poultry	-	1	-	-	2	9	-	-	-	12
Other	-	-	-	-	-	-	-	-	-	-
Sub total	1	1	0	1	4	16	0	11	7	41
Part-contract producers										
Cattle & sheep (LFA)	-	-	-	-	-	-	-	-	-	-
Cattle & sheep (lowland)	-	-	-	-	1	-	-	-	-	1
Cereals	-	-	-	-	-	-	-	-	-	-
Dairy	-	-	-	-	-	-	-	-	-	-
General cropping	-	-	-	-	-	1	-	-	-	1
Horticulture	-	-	-	-	-	-	-	-	-	-
Mixed	-	-	-	-	-	-	-	-	-	-
Pigs & poultry	1	-	-	-	-	-	-	-	1	2
Other	-	-	-	-	-	-	-	-	-	-
Sub total	1	-	-	-	1	1	-	-	1	4
All farms	3	9	9	8	73	30	4	14	15	165

The situation was very similar in 2002-03 (Table 13), though with movement of two per cent of all farms with pigs from non-contract production to contract production. That movement was not reflected however in the Pigs and poultry group of farms.

Table 13 Type of pig production, 183 FBS farms, by farm type, 2002-03

Farm type	Pig production type code									All types
	65	66	67	68	69	70	71	72	73	
Cattle & sheep (LFA)	-	1	-	2	1	-	-	-	-	4
Cattle & sheep (lowland)	-	3	-	-	3	-	1	1	-	8
Cereals	-	2	2	1	6	-	-	2	1	14
Dairy	-	-	2	-	3	1	-	1	1	8
General cropping	-	-	-	1	9	1	-	-	-	11
Horticulture	-	-	-	-	-	-	-	-	1	1
Mixed	1	-	2	-	24	2	1	2	1	33
Pigs & poultry	1	3	2	4	31	4	-	-	3	48
Other	-	1	-	-	-	1	-	-	-	2
Sub total	2	10	8	8	77	9	2	6	7	129
Contract producers										
Cattle & sheep (LFA)	-	-	-	1	-	-	-	-	-	1
Cattle & sheep (lowland)	-	-	-	-	-	-	-	4	-	4
Cereals	1	-	-	-	-	-	-	6	1	8
Dairy	-	-	-	-	1	-	-	1	1	3
General cropping	-	-	-	-	-	-	-	8	1	9
Horticulture	-	-	-	-	-	-	-	-	-	-
Mixed	-	-	-	-	-	1	-	10	2	13
Pigs & poultry	-	1	-	-	2	-	-	9	-	12
Other	-	-	-	-	-	-	-	-	-	-
Sub total	1	1	-	1	3	1	-	38	5	50
Part-contract producers										
Cattle & sheep (LFA)	-	-	-	-	-	-	-	-	-	-
Cattle & sheep (lowland)	-	-	-	-	-	-	-	-	-	-
Cereals	-	-	-	-	-	-	-	-	-	-
Dairy	-	-	-	-	-	-	-	-	-	-
General cropping	-	-	-	-	-	1	-	-	-	1
Horticulture	-	-	-	-	-	-	-	-	-	-
Mixed	-	-	-	-	-	-	-	1	-	1
Pigs & poultry	1	-	-	-	-	-	-	-	1	2
Other	-	-	-	-	-	-	-	-	-	-
Sub total	1	-	-	-	-	1	-	1	1	4
All farms	4	11	8	9	80	11	2	45	13	183

As would be expected, the largest group of farms, classified in this way, was indoor breeding herds selling finished pigs, the traditional breeder-finishers (code 69). In both years they constituted 44 per cent of all farms, 56 per cent of the Pigs and poultry group in 2001-02 and 53 per cent in 2002-03. More surprising was that the majority of contract producers in the FBS in 2001-02 were breeding pigs (codes 65 to 70), as distinct from merely finishing (code 72) and that, of the contract breeding herds, most had a mixed output of weaners and finished pigs. Perhaps that was just a transitional situation as producers changed their production strategies; by 2002-03, 38 of 50 (76 per cent) of contract herds did not have breeding stock and were selling finished pigs only

Outdoor breeding was well represented in the survey, with 21 farms breeding pigs outdoors in 2001-02 (codes 65 to 67), 23 in 2002-03, and a further four herds in each year operating at least partially outdoors (code 71).

Tables 14 and 15 indicate, for the two years, how many of the farms with pigs, by farm type, sold finished pigs and into which categories the finished pigs fell. Thus we see in Table 13 that in 2001-02, 22 farms did not sell finished pigs at all, and that of the 143 that did, 5 only sold pigs of more than 75kg deadweight, 73 sold them between 55 and 75kg deadweight, 41 at less than 55kg deadweight, and the rest in either a heavier or lighter mixed category.

Table 14 Finished pigs sold, 165 FBS farms, by farm type, 2001-02

Non-contract producers	Type of finished pig						All types
	None sold	>75kg	55-75kg	<55kg	Mixed >55kg	Mixed <75kg	
Farm type							
Cattle & sheep (LFA)	3	-	-	1	-	2	6
Cattle & sheep (lowland)	1	-	-	3	1	-	5
Cereals	3	1	6	5	-	1	16
Dairy	1	2	3	4	-	1	11
General cropping	4	-	5	2	-	3	14
Horticulture	-	-	-	-	-	-	-
Mixed	5	-	14	10	3	2	34
Pigs & poultry	5	-	31	11	2	6	55
Other	-	-	-	-	-	-	-
Sub total	22	3	59	36	6	15	141
Contract producers							
Cattle & sheep (LFA)	-	-	-	-	-	-	-
Cattle & sheep (lowland)	-	-	-	-	-	-	-
Cereals	-	-	-	-	-	-	-
Dairy	-	-	-	-	-	-	-
General cropping	-	-	1	-	-	-	1
Horticulture	-	-	-	-	-	-	-
Mixed	-	-	-	-	-	-	-
Pigs & poultry	-	-	-	-	-	1	1
Other	-	-	-	-	-	-	-
Sub total	0	0	1	0	0	1	2
Part-contract producers							
Cattle & sheep (LFA)	-	-	-	-	-	-	-
Cattle & sheep (lowland)	-	-	-	1	-	-	1
Cereals	-	1	3	-	-	1	5
Dairy	-	-	-	-	-	-	-
General cropping	-	-	3	2	-	1	6
Horticulture	-	-	-	-	-	-	-
Mixed	-	-	1	2	-	-	3
Pigs & poultry	-	1	6	-	-	-	7
Other	-	-	-	-	-	-	-
Sub total	0	2	13	5	0	2	22
All farms	22	5	73	41	6	18	165

The picture was similar in 2002-03, with 24 farms not selling any finished pigs, and of the 159 that did, seven sold pigs of more than 75kg deadweight, 81 sold them between 55kg and 75kg deadweight, and 38 at less than 55kg deadweight.

Table 15 Finished pigs sold, 183 FBS farms, by farm type, 2002-03

Non-contract producers	Type of finished pig						All types
	None sold	> 75kg	55-75kg	<55kg	Mixed >55kg	Mixed <75kg	
Farm type							
Cattle & sheep (LFA)	2			2		1	5
Cattle & sheep (lowland)	3		1	5	1		10
Cereals	3	2	6	3		3	17
Dairy	2	1	2	3		3	11
General cropping	2		8	1		4	15
Horticulture				1			1
Mixed	6		18	8	3	3	38
Pigs & poultry	6	1	27	9	2	6	51
Other			1	1			2
Sub total	24	4	63	33	6	20	150
Contract producers							
Cattle & sheep (LFA)							0
Cattle & sheep (lowland)							0
Cereals							0
Dairy							0
General cropping			1				1
Horticulture							0
Mixed							0
Pigs & poultry			1				1
Other							0
Sub total	0	0	2	0	0	0	2
Part-contract producers							
Cattle & sheep (LFA)							0
Cattle & sheep (lowland)				1	1		2
Cereals			2	1		2	5
Dairy							0
General cropping		1	1	2		1	5
Horticulture							0
Mixed		1	4	1	2	1	9
Pigs & poultry		1	9				10
Other							0
Sub total	0	3	16	5	3	4	31
All farms	24	7	81	38	9	24	183

It is not surprising to find the largest numbers of finished pig producers selling in the 55kg to 75kg deadweight band. Those pigs (cutters/baconers) are used for both fresh meat and for processing into bacon and ham and they are the ultimate product of most pig production activity in the UK. The greater surprise is the 29 per cent (41 of 143 selling finished pigs) in 2001-02 and 24 per cent (38 of 159) in 2002-03 exclusively selling pigs of below 55kg deadweight. The most recent (2002-03) Special Economic Study of pig

Table 16 Average numbers of sows and of growing pigs over 20kg, by farm type and size band

Farm type	Average number of sows						Total farms
	0	<20	20-99	100-199	200-299	>300	
2001-02							
Cattle & sheep (LFA)	1	3	2	-	-	-	6
Cattle & sheep (lowland)	1	5	-	-	-	-	6
Cereals	9	10	2	-	-	-	21
Dairy	4	6	1	-	-	-	11
General cropping	10	3	5	1	1	1	21
Horticulture	-	-	-	-	-	-	-
Mixed	11	4	6	5	4	7	37
Pigs & poultry	14	-	16	11	9	13	63
Other	-	-	-	-	-	-	-
All farms	50	31	32	17	14	21	165
2002-03							
Cattle & sheep (LFA)	2	2	1	-	-	-	5
Cattle & sheep (lowland)	6	6	-	-	-	-	12
Cereals	10	7	4	1	-	-	22
Dairy	6	4	1	-	-	-	11
General cropping	10	3	3	1	3	1	21
Horticulture	1	-	-	-	-	-	1
Mixed	16	6	10	5	5	5	47
Pigs & poultry	14	-	14	16	8	10	62
Other	-	-	1	-	-	1	2
All farms	65	28	34	23	16	17	183
Farm type	Average number of growing pigs >20kg						Total farms
	0	<200	200-499	500-999	1000-2000	>2000	
Cattle & sheep (LFA)	4	2	-	-	-	-	6
Cattle & sheep (lowland)	1	5	-	-	-	-	6
Cereals	1	12	5	3	-	-	21
Dairy	1	8	2	-	-	-	11
General cropping	1	7	5	2	5	1	21
Horticulture	-	-	-	-	-	-	-
Mixed	3	5	7	9	6	7	37
Pigs & poultry	3	4	11	16	15	14	63
Other	-	-	-	-	-	-	-
All farms	14	43	30	30	26	22	165
Cattle & sheep (LFA)	1	4	-	-	-	-	5
Cattle & sheep (lowland)	1	10	1	-	-	-	12
Cereals	3	11	5	2	1	-	22
Dairy	2	6	2	-	1	-	11
General cropping	-	3	7	3	6	2	21
Horticulture	-	1	-	-	-	-	1
Mixed	1	10	12	8	11	5	47
Pigs & poultry	3	4	13	16	18	8	62
Other	-	1	-	-	-	1	2
All farms	11	50	40	29	37	16	183

production in England⁷ found that less than four per cent of finished pig producers were selling even 80 per cent of their carcass pigs at that weight, with the numbers of pigs involved constituting an even smaller percentage of the total.

Numbers of pigs kept and produced by the various farm types are obviously of great interest. Table 16 shows the distributions of sows and of growing pigs over 20kg. In 2001-02, only the General cropping, Mixed and specialist Pigs and poultry farm types had sow numbers averaging 100 or more, or an average of 1000 or more growing pigs. In 2002-03 the Cereals, Dairy and Other groups produced single exceptions to that general rule, but the pattern was still of the larger pig herds being found almost exclusively on General cropping, mixed and Pigs and poultry farms.

Field of Survey

For recent cycles of the National Survey of the Economics of Pig Production, a defined Field of Survey has been used that excludes farms that do not have at least 20 breeding sows and/or 200 growing pigs. (See, for instance, report number 60 in the Special Studies in Agricultural Economics series, Pig Production 2002-03, published by the University of Exeter's Centre for Rural Research). Table 17 presents the numbers of farms found in the Farm Business Survey that would have fallen within that Field of Survey in each of the two accounting years 2001-02 and 2002-03⁸.

In Table 17, we again see comparatively small numbers of relatively small herds in all farm types except the General cropping, Mixed and specialist Pigs and poultry farm types. With the exception of two Pigs and poultry farms, all 'Field of Survey' farms in both years had pigs of more than 20kg liveweight, but by no means all kept breeding sows. In the three farm type groups seen to be of greatest significance, the proportion of 'Field of Survey' herds with sows ranges from 50 to 79 per cent in 2001-02 and 44 to 80 per cent in 2002-03; the all farms figure in 2001-02 was 69 per cent and in 2002-03 65 per cent. Herd sizes were largest, both in terms of breeding sows and of pigs over 20kg, in the specialist Pigs and poultry group, but were not much smaller in the Mixed group. A single Horticultural holding also had a significantly large number of finishing pigs in 2002-03.

⁷ Pig Production 2002-03, Number 60 in the Special Studies in Agricultural Economics series, University of Exeter Centre for Rural Research, October 2004.

⁸ Unfortunately, there is some variation in definition between the various studies. The pig Special Economic Study enumerated weaned pigs, whilst the FBS and the June Agricultural Census enumerate pigs over 20kg.

Table 17 Numbers of 'Field of Survey' farms, by farm type, with average numbers of sows and pigs over 20kg

Farm type	Total	Field of Survey farms			
		Farms with sows farms	av sows	Farms with pigs >20kg farms	av pigs
2001-02					
Cattle & sheep (LFA)	2	2	51	2	124
Cattle & sheep (lowland)	-	-	-	-	-
Cereals	9	2	63	9	416
Dairy	3	1	24	3	484
General cropping	16	8	140	16	854
Horticulture	-	-	-	-	-
Mixed	30	22	236	30	1306
Pigs & poultry	62	49	254	60	1352
Other	-	-	-	-	-
All farms	122	84	226	120	1162
2002-03					
Cattle & sheep (LFA)	1	1	56	1	111
Cattle & sheep (lowland)	1	-	-	1	350
Cereals	12	5	48	12	372
Dairy	4	1	27	4	433
General cropping	18	8	175	18	1024
Horticulture	1	-	-	1	1298
Mixed	40	26	179	40	1021
Pigs & poultry	60	48	234	58	1126
Other	2	2	200	-	-
All farms	139	91	198	135	987

Tables 18 to 21 set out various measures of performance for the Field of Survey farms. Because definitions relating to pigs in the Farm Business Survey tend to be different from those of single enterprise pig costings, or data considered fundamental to any detailed pig study is not within the scope of the FBS (the size of which, as a data collecting exercise, is already very large), any comparison with the results of another study should be approached with great caution. It should also be noted that the FBS was never intended to be used as a source of enterprise costings, still less of detailed measures of production efficiency at the enterprise level. However, a certain amount of worthwhile information can be gleaned from the pig data, and comparison of the various measures between years should be valid.

Table 18 Measures of performance on Field of Survey farms, farms with sows

	All field of survey farms	Field of survey Pigs & poultry farms		
		All farms	Top third	Bottom third
2001-02				
Farms with sows	84	49	16	16
Av no. sows	226	254	260	221
Av no. pigs >20kg	1,660	1,259	893	1,161
Reared per sow	19.6	19.9	20.2	19.4
% sow turnover	43	41	36	57
£ per sow total pig feed	647	611	419	706
% feed own produce (by value)	3.2	1.2	-	1.3
Pig output £ per sow	1161	1126	890	1184
2002-03				
Number of herds	91	48	16	16
Av no. sows	198	234	247	208
Av no. pigs >20kg	991	1,029	800	657
Reared per sow	19.4	19.8	18.7	20.4
% sow turnover	54	54	35	79
£ per sow total pig feed	595	552	417	478
% feed own produce (by value)	3.6	1.4	0.8	2.6
Pig output £ per sow	1,089	1,019	874	781

Table 18 offers a comparison of some of those measures for all Field of Survey herds with sows and for Field of Survey herds falling within the Pigs and poultry farm classification. The latter group has also been analysed into top and bottom thirds, measured by value of the farm's net farm income as a percentage of total farm output⁹.

Average numbers of sows are consistently around or above 200, but the relationship of average number of pigs over 20kg to average number of sows varies considerably. This can be taken as a measure of the varying extent to which the different groups are finishing pigs or selling them as weaners. As with sow numbers, pigs reared per sow per year vary within a relatively narrow band around a mean of a little less than 20. Curiously, the top third Pigs and poultry group reared fewer pigs per sow per year in 2002-03 than did the bottom third.

⁹ In both cases excluding any "profit" derived from any appreciation over the accounting year in the values of breeding livestock and in the case of net farm income also excluding items defined as exceptional.

Table 19 Measures of performance on Field of Survey farms, breeding only herds

	All field of survey farms	Field of survey Pigs & poultry farms		
		All farms	Top third	Bottom third
2001-02				
Number of herds	4	3	-	-
Av no. sows	-	-	-	-
Av no. pigs >20kg	-	-	-	-
Reared per sow	-	-	-	-
% sow turnover	-	-	-	-
£ per store pig sold	-	-	-	-
% feed own produce (by value)	-	-	-	-
		£ per sow		
Pig output	-	-	-	-
Feed	-	-	-	-
Vet & medicine	-	-	-	-
Other livestock costs	-	-	-	-
Heat, light & water	-	-	-	-
Other general farming costs	-	-	-	-
Land & property costs	-	-	-	-
Occupier's expenses	-	-	-	-
Interest payments	-	-	-	-
2002-03				
Number of herds	7	5	-	-
Av no. sows	483	657	-	-
Av no. pigs >20kg	392	530	-	-
Reared per sow	22.8	23.1	-	-
% sow turnover	62	63	-	-
£ per store pig sold	23.82	23.68	-	-
% feed own produce (by value)	0.6	-	-	-
		£ per sow		
Pig output	527	517	-	-
£ per sow total pig feed	238	237	-	-
Vet & medicine	14	13	-	-
Other livestock costs	21	19	-	-
Heat, light & water	8	7	-	-
Other general farming costs	18	15	-	-
Land & property costs	62	49	-	-
Occupier's expenses	17	15	-	-
Interest payments	12	10	-	-

Sow turnover represents the number of sows that were culled or died as a proportion of those in the opening valuation, bought or transferred-in. Turnover notably increased between 2001-02 and 2002-03, whilst the cost of feed per sow declined. In this circumstance, the latter is a somewhat crude measure, because herds finishing a larger proportion of their pigs, rather than selling them as weaners, will use a greater amount of pig feed. In this case the total amount has simply been divided by number of sows. In all cases, the proportion of home-grown feed offered to the pigs was rather small, but it was notably smaller in the case of the Pigs and poultry group than with Field of Survey herds as a whole.

Table 20 Measures of performance on Field of Survey farms, breeding-finishing herds

	All field of survey farms	Field of survey Pigs & poultry farms		
		All farms	Top third	Bottom third
2001-02				
Number of herds	81	46	15	15
Av no. sows	207	223	196	213
Av no. pigs >20kg	1,198	1,237	967	1,046
Reared per sow	19.5	19.9	19.5	19.4
% sow turnover	45	44	38	62
£ per store pig sold	34.83	37.85	41.26	33.48
£ per finished pig sold	68.24	67.33	64.95	67.09
% feed own produce (by value)	3.4	1.3	-	1.5
		£ per sow		
Pig output	1,239	1,234	1,080	1,173
£ per sow total pig feed	697	684	554	694
Vet & medicine	44	40	26	30
Other livestock costs	109	89	69	89
Heat, light & water	39	30	24	40
Other general farming costs	54	39	41	45
Land & property costs	139	85	80	99
Occupier's expenses	58	36	37	28
Interest payments	50	40	36	52
2002-03				
Number of herds	85	43	14	14
Av no. sows	168	176	126	130
Av no. pigs >20kg	1,041	1,146	850	940
Reared per sow	18.7	18.8	20.6	16.3
% sow turnover	53	72	50	81
£ per store pig sold	27.31	36.48	38.60	-
£ per finished pig sold	67.84	66.41	67.00	65.78
% feed own produce (by value)	3.9	1.6	1.0	4.4
		£ per sow		
Pig output	1,257	1,272	1,402	1,126
£ per sow total pig feed	695	714	749	701
Vet & medicine	54	45	33	45
Other livestock costs	117	98	105	115
Heat, light & water	42	35	38	37
Other general farming costs	65	45	62	47
Land & property costs	162	87	84	101
Occupier's expenses	59	30	41	28
Interest payments	40	36	62	23

The total value of pig output, as with feed cost, when divided by number of sows provides a measure that varies considerably according to the proportion of pigs bred that are finished. Taken in conjunction with feed cost per sow, output per sow might best be regarded at the 'all herds with sows' level as no more than an indication of the proportion of pigs finished. Certainly, it appears that in 2001-02 the bottom third Pigs and poultry farms finished more pigs than did the top third, but that those who instead sold weaners retained a better profit margin.

Table 21 Measures of performance on Field of Survey farms, contract finishing herds

	All field of survey farms	Field of survey Pigs & poultry farms		
		All farms	Top third	Bottom third
2001-02				
Number of herds	24	8	-	-
Av no. pigs >20kg	969	1,481	-	-
		£ per farm		
Pig output	17,798	21,072	-	-
Pig feed	-	-	-	-
Vet & medicine	957	426	-	-
Other livestock costs	2,950	947	-	-
Heat, light & water	2,932	1,378	-	-
Other general farming costs	10,013	5,531	-	-
Land & property costs	27,343	6,929	-	-
Occupier's expenses	6,592	3,803	-	-
Interest payments	9,773	2,894	-	-
2002-03				
Number of herds	31	7	-	-
Av no. pigs >20kg	786	1,131	-	-
		£ per farm		
Pig output	17,043	21,644	-	-
Pig feed	-	-	-	-
Vet & medicine	506	144	-	-
Other livestock costs	2,673	1,030	-	-
Heat, light & water	2,199	2,112	-	-
Other general farming costs	16,197	4,258	-	-
Land & property costs	8,494	5,577	-	-
Occupier's expenses	1,942	3,197	-	-
Interest payments	2,070	3,092	-	-

As already noted, breeding-only pig farms in the FBS were remarkably few in the two years examined here. Table 19 presents such measures of performance as are possible. However, with only four herds in 2001-02, three in the Pigs and poultry group, seven and five in 2002-03, most cells are unfilled. For reasons of confidentiality, data that relates to less than five farms cannot be published.

Numbers of pigs reared per sow are notably better in the breeding only herds than those seen in Table 18 (all farms with sows), but with all pigs sold as weaners the value of pig output per sow is less, as is expenditure per sow on feed.

Some other costs are detailed in Table 20, but none are recorded in the FBS as being those for pigs alone. Any other livestock enterprise on the farm would be liable to add to the total veterinary bill, all enterprises might add to expenditure on heat, light and water, land and property cost would relate to all land and buildings, interest payments to all borrowings, etc. So a ready explanation is available as to why expenditure per sow is generally greater on those items in the group of all field of survey farms than it is among those only of the Pigs and poultry group. Even within the latter group, some expenditure relating to enterprises other than pigs will inevitably be included.

Table 21, which details similar measures for field of survey contract finishing herds, is well-populated in terms of herds of all farm types, but contract finishing is not a strong

feature in the more specialised Pigs and poultry group. Top and bottom third analysis within that farm type group is therefore not possible.

Nevertheless, the eight farms in the Pigs and poultry group that were contract pig producers kept considerably more pigs than did contract pig producing farms as a whole, an average number of 1,481 in 2001-02, 1,131 in 2002-03, compared with 969 and 786.

Unfortunately, it is not possible to know what total pig throughput was on those farms, as it was not always recorded for FBS purposes, the payment for keeping the pigs often being recorded in isolation. In consequence, the value of pig output and costs are set out in the table on a per farm basis, rather than per pig. The temptation to divide output and costs by the average number of pigs has been resisted on the grounds that average number of pigs is a very poor guide to throughput of such pigs, which arrive on different farms at a wide range of different ages and weights and remain there for widely varying periods of time.

Pig feed is not a cost for contract farms, it being provided by the owner of the pigs, and veterinary costs too usually do not fall to the person keeping the pigs. The relatively small amounts of veterinary and medicine expenditure seen are therefore largely unrelated to pigs on the farm. The fact that there is expenditure underlines the fact that none of the costs in tables 18 to 21 other than pig feed are necessarily exclusively related to pigs.

Assets and liabilities¹⁰

An important strength of the Farm Business Survey, given its brief to provide information on the financial state of farming in England and Wales, is the detailed statistics on assets and liabilities available for the sample farms. These data are summarised in Tables 22 and 23 for the two samples being considered, all Field of Survey farms and 'pigs and poultry' farms.

The data provide several important insights into the financial health of the sample farms.

1. More than a quarter of the farms recorded a negative NFI in both years, an indication of the extremely difficult trading conditions of the period being reviewed. A negative NFI implies that the business not only failed to provide any return for the manual and managerial input of the farmer and spouse, but also provided an inadequate (i.e. below market rate) return on other resources used. It should be noted that these businesses survived at least partly because the owners were (presumably) prepared to accept a low return on their landlord-type investment (see 'landlord type capital' in the tables).
2. It will be seen that whereas the All Field of Survey farms have opening assets of some £600 thousand, the assets on the Pigs and poultry sub-group, which are smaller holdings, were less than half as much. This difference between the two groups is evident also in the measures of tenant-type capital.
3. Both groups (All Field of Survey farms and Pigs and poultry farms) recorded a fall in net worth between the two years, reflecting reduction in the value of livestock and machinery as well as a decline in the valuation of property (land and buildings).

¹⁰ The author is pleased to acknowledge the contribution of the commentary on Assets and Liabilities by Martin Turner, a colleague at the University of Exeter Centre for Rural Research

Table 22 Summary information on assets and liabilities, all Field of Survey farms and Pigs and poultry farms, 2001-02

	All field of survey farms	2001-02 Field of survey Pigs & Poultry farms		
		All farms	Top third	Bottom third
Number of farms	122	62	21	21
		£ per farm		
Agricultural land (UAA owned - has.)	464,362 (72.1)	229,729 (32.9)	238,323 (33.8)	245,299 (17.3)
Farm buildings	40,527	27,066	31,657	14,965
All landlord type capital	523,993	263,157	279,978	264,053
Machinery valuation	86,119	53,520	49,957	45,472
Livestock valuation	78,160	81,270	55,705	66,952
Stores	13,982	6,195	6,410	4,304
All tenant type capital	245,820	176,198	154,457	139,093
Total loan accounts	90,571	80,730	86,759	66,982
Total current liabilities	73,559	59,377	54,514	51,460
Total external liabilities	164,130	140,108	141,273	118,442
Opening net worth	610,061	303,396	294,297	287,924
Net farm income (loss)	20,673	24,264	48,465	(8,923)
Closing net worth	601,305	295,098	292,029	281,482
No. farms with NFI profit	88	44	21	3
Average profit	37,586	39,252	48,465	11,772
No. farms with NFI loss	34	18	-	18
Average loss	23,102	12,372	-	12,372

Table 23 Summary information on assets and liabilities, all Field of Survey farms and Pigs and poultry farms, 2002-03

	All field of survey farms	2002-03 Field of survey Pigs & Poultry farms		
		All farms	Top third	Bottom third
Number of farms	138	60	20	20
		£ per farm		
Agricultural land (UAA owned - has.)	449,883 (68.5)	214,998 (19.6)	302,104 (34.5)	186,455 (13.2)
Farm buildings	31,740	18,550	31,591	11,183
All landlord type capital	496,650	237,300	338,729	198,374
Machinery valuation	79,002	52,068	83,489	44,565
Livestock valuation	66,050	68,439	115,749	45,120
Stores	13,320	5,614	8,462	5,259
All tenant type capital	226,968	154,990	258,645	108,835
Total loan accounts	80,950	80,453	165,078	39,289
Total current liabilities	68,995	62,785	115,731	52,923
Total external liabilities	149,945	143,238	280,809	92,212
Opening net worth	577,680	254,586	317,945	228,072
Net farm income (loss)	20,705	19,593	60,615	(12,670)
Closing net worth	569,665	243,519	315,183	201,922
No. farms with NFI profit	101	42	20	2
Average profit	34,614	34,094	60,615	1,481
No. farms with NFI loss	37	18	-	18
Average loss	17,264	14,243	-	14,243

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APPENDIX I

METHODOLOGY, DEFINITIONS OF TERMS, NOTES ON TABLES AND ON FARM CLASSIFICATION

Survey methodology

1. Farm accounts data are collected from samples of full time farm businesses in each of the four countries of the United Kingdom by University Departments of Agricultural Economics and Colleges of Agriculture in Great Britain and by the Department of Agriculture in Northern Ireland. Around 3,900 farm businesses are included, comprising around 2,350 in England, 500 in Scotland, 550 in Wales and 400 in Northern Ireland.
2. Survey results are based on the accounting year of each farm and do not, therefore, relate to precisely the same twelve month period for every farm in the survey. There are, however, concentrations of accounting year-ends at the close of the calendar and financial years (early April); the average year-end falls in mid-February.
3. In order to provide assessments of movements in income and the factors affecting income change between years, data are generally analysed for the identical sample of farms participating in the survey in two successive years.

Physical characteristics

4. *Total area farmed* is the area of tillage, temporary and permanent grass and rough grazing in sole occupation. It includes set-aside land and any land hired in for less than one year, but excludes land hired out. It also excludes woodland and other areas of the farm not used for agriculture (e.g. buildings, roads, water, household gardens).
5. *Livestock numbers* are based on estimated averages for the farm for the year, including fractions for livestock on the farm for less than a year.
6. *Total livestock units* are an approximate measure of stocking intensity based upon feed requirements. The factors used in England, Wales and Scotland are:

Livestock units per head

	<u>England/Wales</u>	<u>Scotland</u>
Boars	0.35	0.35
Breeding sows	0.44	0.44
Gilts in pig	0.20	0.20
Maiden gilts	0.18	0.18
Other pigs	0.17	0.17
Cocks, hens, pullets in lay	0.017	0.017
Pullets, one week to point of lay	0.003	0.003
Broilers	0.0017	0.0017
Other table chicken	0.004	0.004
Turkeys	0.005	0.005
Ducks, geese, other poultry	0.003	0.003

7. *Annual Labour Units* (ALU) are the estimated numbers of fulltime worker- equivalents of persons working on the holding during the year. One ALU represents the labour input of a full-time worker (working 2,200 hours in a year). Part-time workers are converted to full-time equivalents in proportion to their actual working time relative to that of a full-time worker.

Output

8. *Livestock enterprise output* consists of the total sales of livestock and livestock products, the value of such produce consumed in the farmhouse, by farm labour or fed on the farm (except direct suckling), any valuation changes associated with trading livestock or changes in the numbers of breeding livestock, less purchases of livestock and livestock products from outside the farm business. Sales and purchases are respectively adjusted for debtors and creditors at the beginning and end of the year and allow for transfers between the dairy and beef enterprises. Where appropriate, livestock output includes direct livestock subsidies. Breeding livestock stock appreciation, that part of the valuation change of breeding livestock arising from price movements, is excluded from livestock enterprise output.

9. *Miscellaneous revenue and general subsidies* includes the return from hirework, the rent (or rental value) of farm cottages plus the private share of the rental value of the farmhouse, an adjustment for receipts from the previous year's crop still in store at the beginning of the current year and the value of any farm resources used for producing capital assets of the farm. This category also includes direct general subsidies (i.e. other than those related to specific farm outputs). These include payments under the Environmentally Sensitive Area schemes and other payments introduced under the EU's Agri-environment package. Receipts from non-agricultural activities on the farm such as retailing, provision of tourist accommodation and catering, and rural crafts are excluded unless they are based on farm resources.

10. *Total farm output* is the sum of crop and livestock enterprise output, general subsidies and miscellaneous revenue. It excludes breeding livestock appreciation.

Inputs

11. *Inputs* comprise actual or imputed payments by the farm business for intermediate goods and the use of land, labour and capital plus the estimated value of home-grown inputs, such as feed and seeds, all adjusted for changes in stocks and creditors between the beginning and end of the year. Where an input is partly used by the farm business and partly for private use, only the appropriate share is included as a cost to the business.

12. *Total variable costs* for calculating net farm income are taken to be costs of feed, veterinary fees and medicines, other livestock costs, seeds, fertilisers, crop protection and other crop costs.

13. *Feed* represents the expenditure of the farm business on feeds and feed additives, including charges for agistment and rented keep. It also includes home-grown feed as the ex-farm value of all home produced cereals, beans, milk (excluding direct suckling), etc. fed on the farm from both the current and previous years' crops, other than fodder crops.

14. *Seeds* comprises expenditure on purchased seeds, plants and trees adjusted for changes in stocks. Home grown seed from the previous crop is included and charged at estimated market price: any seeds from current crops and sown for a succeeding crop are excluded, but

are included in the closing valuation of the crop and hence in enterprise output. This enables the value of home grown seed used in the production of the current crop to be identified.

15. *Fertiliser* includes lime and other manures, and is adjusted for changes in stocks. Fertilisers applied for next year's crops are treated as if they were still in store and are included in the closing valuation.

16. *Total fixed costs* for calculating net farm income are the costs of machinery, labour, contract work, land and buildings, other general farming costs and depreciation of plant, machinery, vehicles, glasshouses and permanent crops.

17. *Machinery* (excluding depreciation) includes the cost of machinery repairs, contract work, machine rentals, fuel and oil, and tools.

18. *Labour* used in the calculation of net farm income and occupier's net income includes unpaid labour, except that of the farmer and spouse, valued at the rate of comparable paid labour. It covers wages, employer's insurance contributions, payments in kind and salaried management. In the determination of cash income and family farm income, unpaid labour is added back.

19. *Depreciation of plant, machinery, vehicles, glasshouses and permanent crops* (e.g. orchards) is deducted in the derivation of net farm income and occupier's net income. It is calculated on a current cost basis and the rates of depreciation used (generally on a diminishing balance basis for machinery and straight line for glasshouses and permanent crops) are intended to reflect the expected life of the assets.

20. *Land and building costs* deducted in the calculation of net farm income comprise the rent paid by tenants (including the imputed rent on tenant's improvements), the rental value of owner-occupied farms, the farm share of rates and tenant-type repairs to land and buildings. In the derivation of occupier's net income and family farm income, land and building costs exclude all imputed rental charges, but include occupier's expenses associated with land ownership such as the insurance of farm buildings, and landlord-type repairs and upkeep.

21. *Depreciation of buildings and works* is deducted in addition to machinery depreciation in the calculation of occupier's net income and family farm income. Depreciation provisions are made on a current cost basis (generally on a straight line basis over 10 or 30 years depending on the type of asset). Depreciation of buildings and works is calculated net of any capital grants received.

22. *Interest charges* on loans taken out for farming purposes, net of interest receipts on monies invested temporarily outside the farm business, are deducted in the calculation of occupier's net income and family farm income. For the latter, interest receipts are not netted-off.

Farm level income measures

23. Brief definitions of various farm-level income measures are presented in this section¹¹.

¹¹ These and measures of aggregate agricultural incomes, and the differences between them were described in more detail in Appendix 3 of *Farm Incomes in the United Kingdom, 2001/02*.

24. *Net farm income* assumes all farms are tenanted and that all tenant-type assets are owned by the farmer. It thus represents the return to the principal farmer and spouse for their manual and managerial labour and on the tenant-type capital of the business.

25. *Occupier's net income* is based upon actual tenure and indebtedness and represents the return to the principal farmer and spouse for their manual and managerial labour and investment in the farm business.

26. *Farm net value added* is a measure used by the European Commission in the Farm Accountancy Data Network. It is a broad measure of income as it represents the return, after allowing for depreciation, to all factors of production (land, labour and capital) regardless of ownership. This indicator is also expressed relative to the volume of total labour input as measured by *Annual Work Units* (AWU). These units are equivalent to *Annual Labour Units* (see above) except that a worker is counted as one AWU even if he or she works for more than 2,200 hours.

27. *Family farm income* is also used by the European Commission. Like occupier's net income, it is based upon actual tenure and indebtedness of the business. However it is a broader measure than either net farm income or occupier's net income in that it represents the return to all unpaid labour (farmers and spouses, non-principal partners and directors and their spouses and family workers). This measure is also expressed relative to the volume of unpaid labour input (i.e. per *Family work unit*, FWU).

28. *Valuation change* is the component of income which represents the sum of the changes between the opening and closing valuations of total crops, trading livestock, cultivations, residual manures and stocks of seeds, feeds, fertilisers and miscellaneous items, but excludes buildings, works, machinery, glasshouses, permanent crops and that part of the valuation change for breeding livestock which is due to price change (breeding livestock stock appreciation).

29. *Cash income* is the difference between total receipts and total expenditure. It represents the cash return to the group with an entrepreneurial interest in the business (farmers and spouses, non-principal partners and directors and their spouses and family workers) for their manual and managerial labour and on their investment in the business.

30. *Net investment spending* comprises expenditure on land, buildings, plant, machinery, vehicles and improvements less any receipts from sales and from capital grants.

Farmer's flow of funds

31. *Cash flow from the farm business* is derived by subtracting net investment spending from cash income.

Balance sheet data

32. *Balance sheet data* covers the farming business only. Although all private or domestic liabilities and assets are excluded, the division between farm business and private purposes requires judgement for some farms. Given this, and the problems associated with the valuation of assets such as land, buildings and improvements, results should be interpreted with care.

33. *Total assets* comprise fixed assets and current assets.
34. *Fixed assets* consist of land, buildings, milk, livestock and other quotas, machinery, equipment and breeding livestock. For tenanted farms, assets can include farm buildings, cottages, quotas etc., where these are owned by the occupier.
35. *Current assets* are sub-divided into:
- *liquid assets* comprising cash and sundry debtors;
 - *physical working assets such as trading livestock, harvested and growing crops, stocks of livestock products and items of dead stock, excluding machinery*

Valuation of assets

36. *Land, buildings, improvements, fixed equipment and quotas* are valued at conservative market prices. The valuations take account of the age of buildings and improvements.
37. *Plant, machinery, vehicles, glasshouses and permanent crops* are valued on a current replacement cost basis.
38. *Breeding livestock* are valued on an estimated conservative market value basis, less the cost of marketing.
39. *Trading livestock*, or stock for rearing and for sale as stores or finished, are valued at estimated market values, less the cost of marketing.
40. *Harvested crops* not yet sold or used and nearly mature crops in the ground are valued at market prices, less any costs to be incurred before disposal; fodder crops are valued at cost.
41. *Stocks of livestock products*, purchased feed, seeds, fertilisers and other miscellaneous items are valued at estimated cost or market prices.
42. *Liabilities* are defined as the total value of claims on the assets of a business by the various suppliers of funds to it. They comprise:
- *long and medium term loans* are those of 12 months or over which are not usually liable to early recall;
 - *current liabilities or short term loans* are claims on the business which may have to be met within a short period of time, usually less than 12 months. Bank overdrafts, hire purchase and leasing debt are all included here.
43. *Net worth (or owner's equity)* represents the residual claim or interest of the owner in the business. It is the balance sheet value of assets available to the owner of the business after all other claims against these assets have been met.

Farm classification (revised 1994)

44. Since 1992-93, farms in the sample have been grouped by type of farming and size of business using the European Union's system of farm classification described in Commission Decision 85/377/EEC1 as amended by Commission Decision 94/376/EC2. This is based on

Standard Gross Margins (SGM) per hectare for crops and per head for livestock estimated for the period 1987 to 1989, commonly known as '1988' SGM¹².

45. The SGM is a financial measure based on the concept of the gross margin for farming enterprises. Because information on gross margins is not available for each farm, standards or norms have been calculated for all of the major crop and livestock enterprises for the three European Community (EC) regions of England (North, East and West) and for Wales, Scotland and Northern Ireland. The total SGM for each farm is calculated by multiplying its crop areas and livestock numbers by the appropriate SGM coefficients and then summing the result for all enterprises on the farm. SGM coefficients used to classify the June census are given in the article in *The Digest of Agricultural Census Statistics: United Kingdom 1993*. Farms in the Farm Business Survey are classified using the same SGM coefficients as are used to classify the June census with the exception of the SGM coefficients for sheep and mushrooms, which are adjusted to reflect the different way in which numbers and area data for these enterprises are collected in the Farm Business Survey¹³.

46. A farm is classified to an EC particular type according to the distribution of its SGMs among enterprises. In the EC system these particular types are grouped into 17 principal types, but these are not entirely suitable for use in the United Kingdom and alternative groupings have been adopted for use in the Farm Business Survey and in the June census¹⁴¹⁵.

47. *Pigs and poultry*: farms on which pigs and/or poultry account for more than two thirds of their total SGM.

Farm business size

48. Farm size is measured in European Size Units (ESU), where one ESU is defined as 1200 European Currency Units (average value 1987-89) of SGM. It is a measure of the economic size of holdings in terms of the value they add to variable inputs and thus differs from physical measures, such as area, which take no account of the intensity of production. Three size groups are defined for this report: the *small* size group contains farms in the range 8 to under 40 ESUs; the *medium* size group contains farms in the range 40 to under 100 ESUs and the *large* size group relates to farms of 100 ESUs and above. Holdings with less than 8 ESU are considered too small to provide full time work for one person and are not included in the Farm Business Survey.

Performance groups

49. Farms are ranked in ascending order of their performance index. The top 25 per cent are classified as *High*, the middle 50 per cent as *Medium* and the bottom 25 per cent as *Low*. The performance index is the ratio of total farm output to total inputs (including rental value, tenant-type inputs, and farmer and spouse manual labour, but excluding interest payments).

¹² An article describing the development of the current system used in the United Kingdom - the UK farm classification system (Revised 1992) - was published in Appendix 3 of *Farm Incomes in the United Kingdom: 1991/92 Edition*. Further details of the system and an analysis of June census data by farm type for the United Kingdom was published in Chapter 8 of *The Digest of Agricultural Census Statistics: United Kingdom 1993*.

¹³ A full listing of '1988' SGM coefficients for the EC(12) is published in Commission Notice (94/C 335/01)3.

¹⁴ The composition of farm types used in the United Kingdom by EC particular type is given in Appendix 2, Table 3 of *Farm Incomes in the United Kingdom, 2001/02*.

¹⁵ The chief characteristics of the eight robust types used to analyse the results of the Farm Business Survey are given in Appendix 2 of *Farm Incomes in the United Kingdom, 2001/02*.

Weighting of results

50. All averages are based on individual farm data weighted to reflect the population of holdings by farm type, size group, tenure and region as enumerated by the June agricultural census. Thus, when the average results of two or more groups of sample farms are combined, the results for each group are given a weight proportional to the total number of holdings in that group recorded at the June agricultural census.

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