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Farm Business Survey

2016-17

Lowland Grazing Livestock Production in England

Mark Fogerty, Richard Soffe and Keith Robbins

RBR

independent research, data and analysis

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Acknowledgements

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Foreword to the First Series

This report is one of a series being produced based on the results of the Farm Business Survey (FBS) for England. The annual Farm Business Survey is the most comprehensive and independent survey of farm incomes and provides a definitive data source on the economic and physical performance of farm businesses in England. It is conducted by a Consortium comprising the Universities of Cambridge, Newcastle upon Tyne, Nottingham and Reading, and Askham Bryan, Duchy and Imperial Colleges. The Consortium is led by the University of Nottingham and its members work in partnership, using uniform and standard practices in reporting on their findings to ensure consistent data quality, accuracy and validity. The Survey is financed by Defra and the Consortium values greatly the input of their staff.

These detailed reports for various farm types and enterprises are in addition to the comprehensive Farm Business Survey Reports for Government Office Regions published at www.farmbusinesssurvey.co.uk. The Consortium is seeking by these additional reports to ensure that timely and relevant information is available to farmers, consultants, advisers and other organisations and individuals interested in farming and land management. The analysis and publication of these reports uses data from farm businesses across England, with an individual member of the Consortium undertaking the research analysis. In line with the ethos of the Consortium, these reports present results in such a way as to ensure a significant element of continuity and consistency from one report to the other, whilst also ensuring that each report captures the contemporary issues of relevance to the sector of agriculture in England to which it relates.

We believe these reports will make a valuable and useful contribution to the farming industry and we commend them to you.

Prof. Martin Seabrook

(Chief Executive of the Consortium)

Spring 2007

Foreword to the Twelfth Series

This series of reports on the economics of agriculture and horticulture in England from *Rural Business Research (RBR)* represents the twelfth series of outputs that focus on providing independent data and analysis to the individual sectors of agriculture and horticulture. As farmers and growers look towards the future for their businesses, the policy landscape is beginning to emerge. The direction of policy travel for UK agriculture and horticulture will be more focused upon the market and the provision of specific environmental goods, and land-area based payments are likely to be reduced or removed in the future. The direction of policy travel has been accompanied with a guarantee that the Basic Payment will remain until at least 2022. These signals provide both an indication of policy outcomes and a time-frame within which businesses can begin to adapt to a new future. The UK's decision to leave the EU will of course have major implications for agriculture and horticulture; these impacts are likely to be bring both challenges and opportunities. While many factors remain uncertain, at the level of the individual business what is required is to position the business to meet the challenges that lie ahead while maximising the outcome of the opportunities that will present themselves. For individual businesses this begins with a need to understand current performance, and to place this within the context of the wider market environment and understand the relative strengths of the business against others within the sector. Within this series of reports, RBR seeks to help businesses to identify their relative strengths and challenges through independent data presented to highlight the key findings and data as appropriate to individual sectors of agriculture and horticulture. It is not possible to manage a process or activity successfully without knowing the underlying data or performance of the process or activity. This series of reports sets out to provide this information at this crucial planning stage for agriculture and horticulture.

The headline data from the Farm Business Survey (FBS) for the 2016/17 financial year, shows that average Farm Business Income (FBI) increased by 20% to £38,000 per farm, taking farm incomes upwards again after a period of six years of falling income levels. At £38,000 per farm FBI is still the second lowest average income from the previous six years. Examining results by farm type, on average, with the exception of Poultry farms, all farm types benefited from an increase in FBI in 2016/17. One of the main drivers for the increased FBI results was a generally lower cost base, with increases in the price of beef, sheep and combinable crops also playing an important part in the increased FBI results. The contribution of increased output from agri-environment, diversification activities and the Basic Payment were also features of the increased FBI result. The exchange rate movement that weakened the value of Sterling in the aftermath of the EU referendum result in 2016, that led to increased output prices during 2016/17, has recently moderated. Should Sterling gain momentum moving forward this will place downward pressure on output prices, but offer some input price advantage, in particular for imported inputs.

As we produce this twelfth series of independent reports, agricultural and horticultural businesses need to prepare for the future if they are to prosper as the market and policy landscapes change. Businesses that understand their costs of production and their relative strengths within a sector will be best placed to compete irrespective of what the future may bring. With this series of reports we aim to help inform agricultural and horticultural businesses about the economics of the sector in which they operate, in order to aid management decision making. It is of crucial importance to recognise that this valuable series of reports would not be possible without the direct support of our farmer and grower co-operators and the wider support of agricultural and horticultural businesses and sector stakeholders. Our thanks therefore go to the farmers and growers who assist us in this valuable work through their participation in the FBS.

Professor Paul Wilson
Chief Executive Officer, Rural Business Research
February 2018

www.ruralbusinessresearch.co.uk

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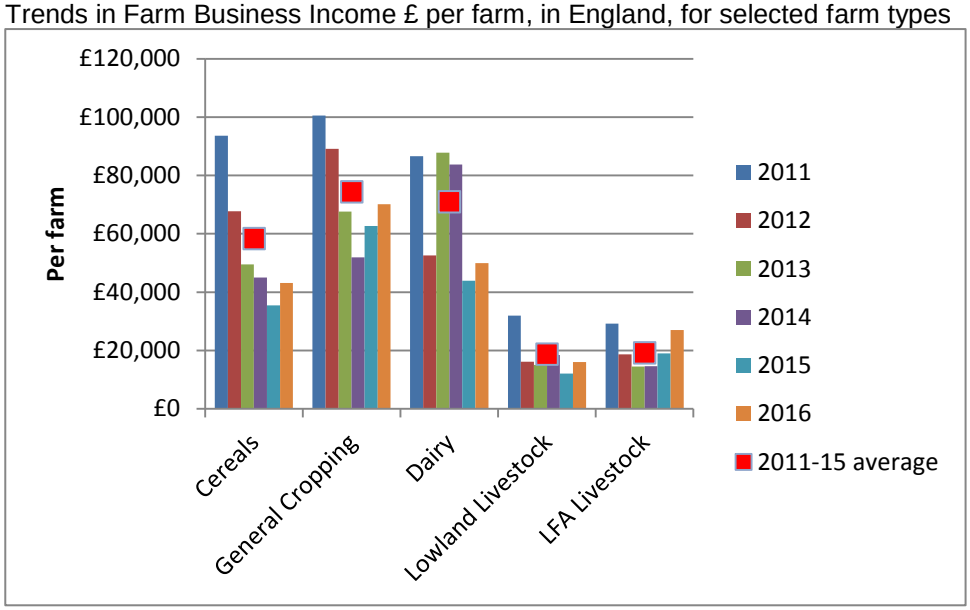
Key Findings of Lowland Grazing Livestock Production in England 2016-17

- Lowland Grazing Livestock farms account for about a quarter of commercial holdings in England. The majority, nearly three quarters, of these businesses are small or part-time. All other farm types are, on average, larger businesses.

- As compared to the other lowland land-based farm types in England, the Grazing Livestock farms produce the lowest incomes per farm, per hectare and per annual labour units. For example, for the Lowland Grazing Livestock farms the Farm Business Income (FBI) per farm was close to a third of the Dairy farms in 2016-17 but as compared to the LFA Grazing Livestock farms incomes were broadly similar.

Trends in Farm Business Income £ per farm, in England, for selected farm types



- The average Farm Business Income (which closely resembles farm profit) for 2016-17 for the Lowland Grazing Livestock farms in England was £16,082 per farm, an increase of £4,033 compared to the previous year, 85% of the average of the previous five years. Two thirds of this improvement came from higher receipts for the Basic Payment Scheme.

- There is a wide range in the level of Farm Business Income per farm within the Lowland Grazing Livestock producers. In 2016-17, 22% had a negative income and 64% had an income of less than £20,000.

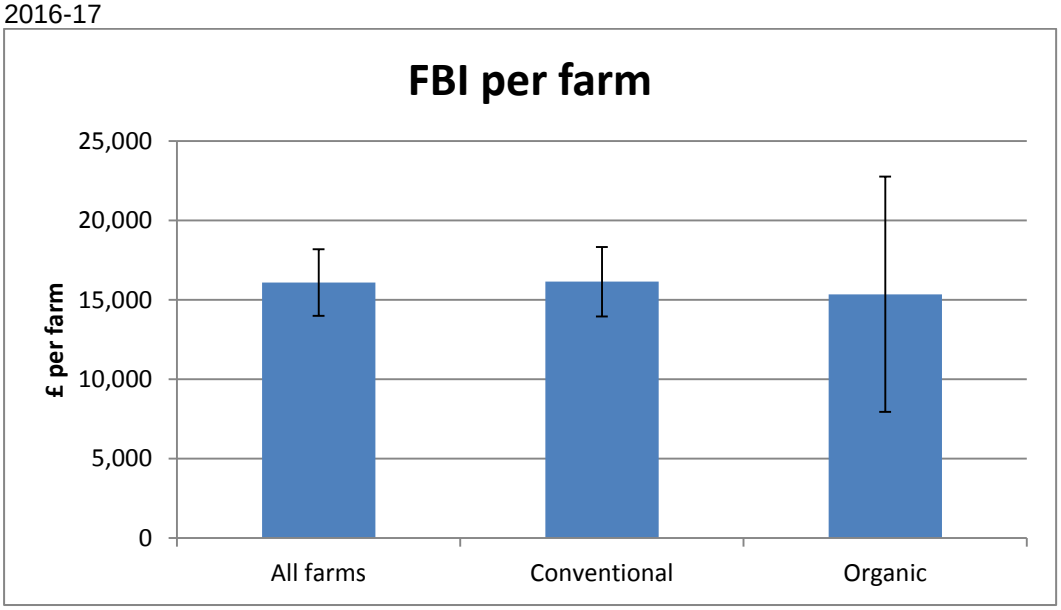
- Farm size is important, with the better performing businesses (based on the ratio of output/input) being much larger farms. The High Performance Band producers farmed over twice the area of the Low Performance producers and produced a higher Farm Business Income per hectare, £401 per hectare compared to a loss of £207 per hectare.

- For the average Lowland Grazing Livestock farm in 2016-17 the value of unpaid labour used by the business (£27,418) and the level of private drawings (£22,239). Thus, these businesses are 'paying' themselves at 81% the appropriate market rate for their labour. For this year the Farm Business Income is £11,000 lower than the value of unpaid labour, thus not covering living expenses or representing any financial return on their capital invested in the business.

- This year's sub-sample of organic producers farm a similar area to their conventional contemporaries and their Farm Business Income was similar on a per hectare basis. The

organic farms have more output from agri-environmental sources due to their eligibility for extra organic aid, much lower variable costs and similar fixed costs.

Lowland Grazing Livestock farms- Farm Business Income per farm, by type of production. 2016-17



Sample sizes are small for some of these analyses and standard error bars have been included in the figures to indicate the accuracy of the estimate of the mean. Error bars are shown on 95% confidence intervals as a measure of the uncertainty that may apply to the estimated means. These signify that we are 95% confident that this range contains the true value. They are calculated as the standard error (se) multiplied by 1.96 to give the 95% confidence interval (95% CI)

- The Basic Payment Scheme is crucial to the level of income the Lowland Grazing Livestock farms achieve. Without the Basic Payment Scheme, the average Lowland Livestock Grazing farm, in England, for 2016-17 would be making a Farm Business Income loss of £1,077.

- From the gross margin analysis the premium (top third) producers, as ranked by gross margin per head, have gross margins more than 54% higher for both the lowland beef cows and rearing cattle to sell as stores. Top third producers of finishing cattle have gross margins 80% higher than the average. For lowland breeding ewes the top third producers are 57% better.

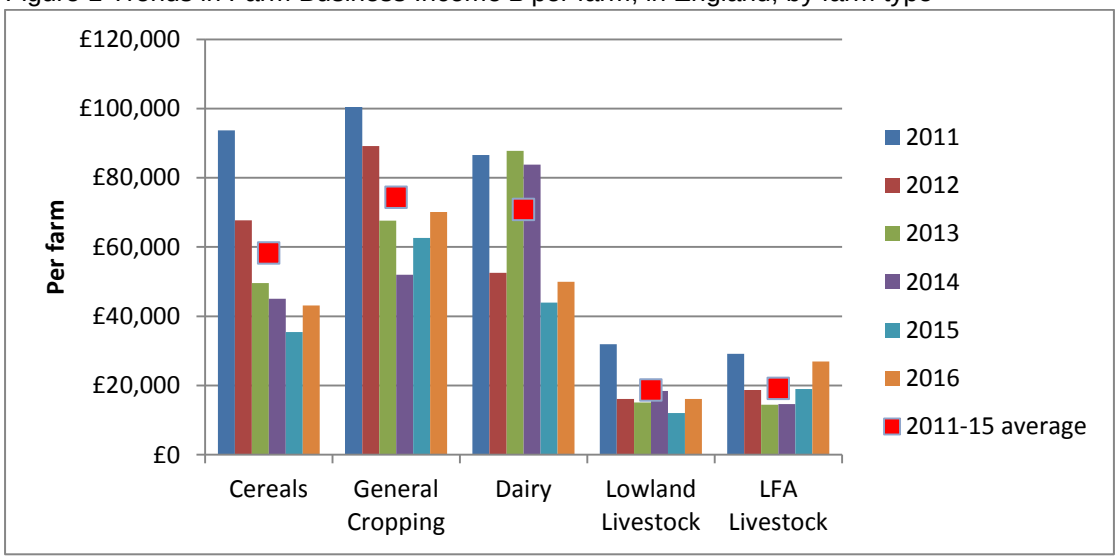
- Comparing the gross margin per hectare across the differing livestock enterprises on the Lowland Grazing Livestock farms, the beef bred cattle finishers have the highest margin followed by beef bred store cattle producers and the lowland breeding ewes. Beef cows produce the lowest gross margin per hectare. All gross margins were slightly higher than the previous year.

Lowland Grazing Livestock Production in England 2016-17

- Of those farm businesses in England that are eligible for the Farm Business Survey 21% are classified as Lowland Grazing Livestock[1]. Approaching three quarters of lowland grazing livestock farms are classed as either part-time or small. Although similar to cereal farms, this is much higher than for dairy (11%) or general cropping (53%) farms.
- The Grazing Livestock businesses have the lowest Farm Business Income of the land based farm types in England (Figure 1).
- Lowland Grazing Livestock farms are the least profitable farm type in the English lowlands, using either per hectare or per Annual Labour Unit (Figure 2)
- Over the last six years the Farm Business Income for Lowland Grazing Livestock businesses has been variable. The Farm Business Income for 2016-17 was 86% of the average for the previous five years. Farm Business Income is more variable than the finished prices of cattle and sheep would have suggested, indicating that the costs to the businesses, valuation changes to the livestock (which are part of the output) and other sources of output were more variable and all have a part to play in the level of income for these farms (Figure 3). Figure 3 also shows the average Farm Business Income broken down into the four cost centres, Agriculture, Agri-environment, Diversification and Basic Payment Scheme or it's predecessor the Single Payment Scheme. It illustrates that the largest variation in income between years comes from the Agriculture cost centre which only made a positive contribution in 2011.
- A number of Indices of Prices of Agricultural Products (United Kingdom) are illustrated in Figure 4. This shows the changes in average annual prices for energy, fertiliser, animal feed and machinery; which have all seen large changes since 2010. Animal feed costs, for example, have increased by 12% in 2017 compared to the base year 2010; but were as much as 40% greater in 2013. Energy and Fertiliser costs are now both lower than in 2010 but both rose by over 20% in the 2011/2012 period. Output prices from cattle and sheep have also seen large changes and volatility in the same period but, in general, are more stable than input prices.

[1] Grazing Livestock farms are classified as farms with more than two-thirds of their total Standard Output produced by cattle and sheep (excluding holdings classified as dairy). A farm is classified as "Lowland" if less than 50% of its total area is in the EC Less Favoured Area.

Figure 1 Trends in Farm Business Income £ per farm, in England, by farm type



Source: http://www.farmbusinesssurvey.co.uk

Figure 2 Farm Business Income per hectare and per Annual Labour Unit, in England 2016-17, by Farm Type

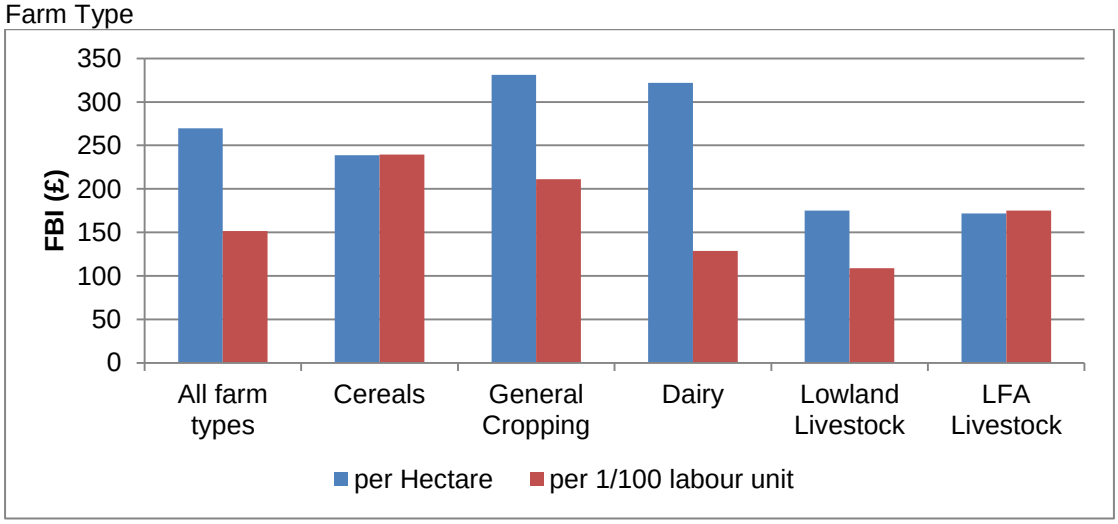


Figure 3 Lowland Grazing Livestock farms in England - Average Farm Business Income by Cost Centre 2011-2016

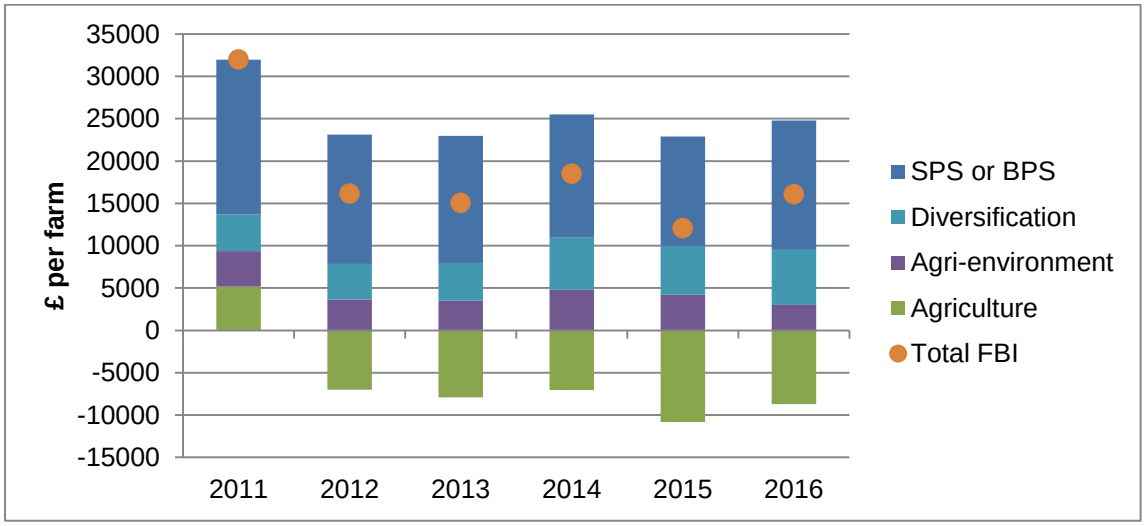
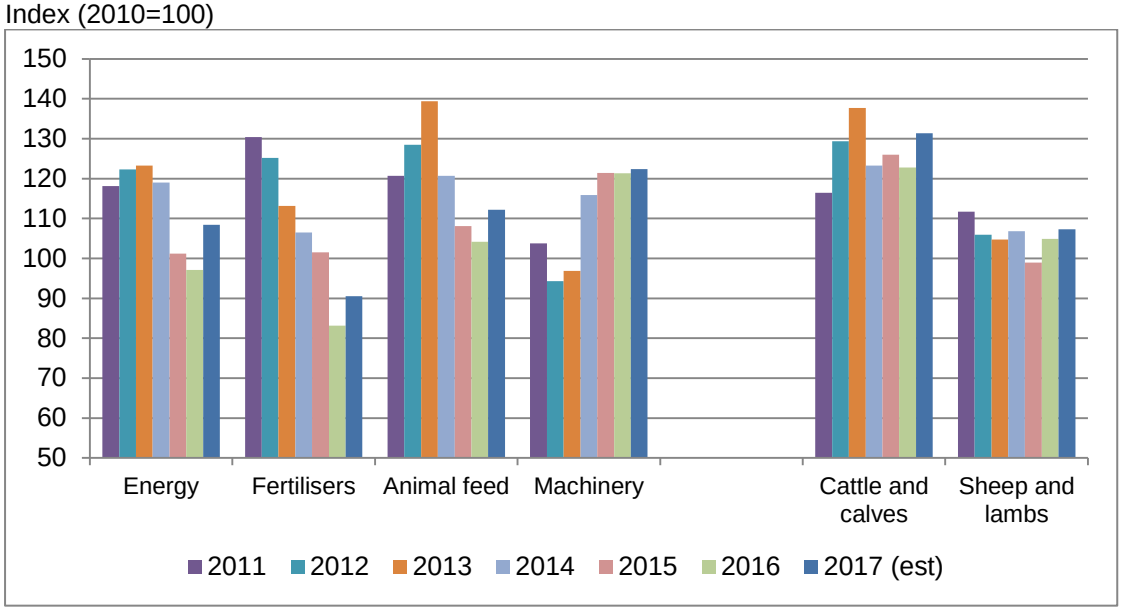


Figure 4 Indices of Producer and input Prices of Agricultural Products (United Kingdom)
Index (2010=100)



Source: Defra

Lowland Grazing Livestock Production in 2016-17- detailed results

- This report uses data extracted from the Farm Business Survey (FBS) for this important group of farms and includes data from 286 farms which has been 'weighted' to produce figures that represent the whole of the Lowland Grazing Livestock industry in England, excluding the smallest farms which are not included within the survey (see Appendix 1).
- The results for the FBS farms for 2016-17 show an increase in Farm Business Income per average farm from 2015-16 to £16,082, an improvement of £4,033. Two thirds of this improvement resulted from higher Basic Payment Scheme income. The Net Farm Income was £4,083 per farm, again a similar improvement on the previous year's figure. (Table 1).
- The average Lowland Grazing Livestock farm was 62% owner occupied and the average area farmed was 91.9 hectares. Permanent grassland and rough grazing covers approaching three quarters of the area with temporary grassland and fodder crops another 15%. The stocking rate is low, emphasising the 'extensive' type of production adopted by this farm type, with only 1.1 Grazing Livestock Units per hectare. Cattle account for 70% of these livestock units (Table 2).
- The balance sheet for the average farm shows over £87,000 of liabilities with the majority of borrowing held by the banks, as loans or overdraft. Total assets for the business of £1,222,000 are dominated by the land and buildings which account for 83% of the total. (Table 3). The balance sheet ratios therefore indicate a strong financial position for these farms in terms of ratios of assets to liabilities, but with the low incomes earned, extra borrowing is still difficult to justify and then service.
- The relationship between trading profit generated, capital investment made, drawings taken by the farming family/families, and the funding of the trading business is summarised by the 'flow of funds' (Table 4).The trading net fund surplus from these farms is £28,500 after depreciation on buildings and machinery is added back to Farm Business Income and the increase in live and deadstock valuations is deducted. Close to £17,000 was spent on capital purchases. Purchase of land and property averaged nearly £1,500, with machinery investment accounting for over £10,000. The machinery pool on these farms was thus

maintained with re-investment being very close to the level of machinery depreciation charged to these businesses. This left a farm fund flow surplus of over £11,000. The private drawings from the farm were £22,200 and this year there was over £15,700 of net transfer in of funds, and so there was a £4,692 reduction in the funding. The introduction of funds from private sources has been a feature of Lowland Grazing Livestock farms for a long period, where the low incomes have not been sufficient to allow for both re-investments in the business and private drawings to support the farming family.

- There is a large distribution of Farm Business Income per farm within the sample of farms, 22% of farms had a negative Farm Business Income in 2016-17, with close to three quarters of farms making less than £20,000. Ten percent of businesses made over £50,000 (Figure 5).
- Farm performance is measured as the ratio of farm business output to farm business costs. An imputed value for unpaid manual labour, including that of the farmer and spouse is added to farm business costs. The value of paid managerial input is subtracted. The farms are ranked in descending order according to this ratio and allocated to quartiles with the top quartile (25 percent) representing the high performance band.[2] Farm size is important, with the better performing businesses being much larger farms and therefore able to spread their fixed costs over a larger area (Table 1). Farm Business Income per hectare still tends to be higher on the High performing farms (Table 5). Low performing farms tended to have lower levels of farm output per hectare. Substantial cost savings are made with fixed costs, where those of the highest performing group are 83% of the Medium performing group of producers. Lower costs are seen in all the fixed cost categories for the High performing group but the differences in the machinery costs have the largest impact. The highest performing group own nearly 60% of the area they farm whereas the low and medium performing group closer to 65% of the farmed area.
- The organic farms are broadly similar in size to their conventional counterparts but the percentage of the land they own is higher. Output from the organic farms is lower when compared to conventional equivalents. However, there are important differences in how this output is achieved; organic farms tend to get more than their conventional counterparts from agri-environment schemes and less from livestock and crops. The output from the agri-environment type schemes is nearly twice the level for the organic producers reflecting the extra support they receive Organic Entry Level Stewardship. With the lower 'farming' output, organic farms tend to have lower variable costs; being less than half the level of conventional producers. The resulting total gross margin per farm for the organic farmers is lower than the conventional level. Fixed costs for the organic farms are also broadly similar to the conventional producers. Thus the Farm Business Income per farm for the organic producers is lower than that of their conventional counterparts but not statistically significant (Table 6).
- Farm size can be described in terms of Standard Labour Requirement[3]. The average size of the Part-time farms is close to 55 hectares (136 acres), compared to the Very Large farms, which are six times bigger (Table 7). The total area farmed by the business increases in relation to the size of the farm and the proportion of tenanted land is similar for Part-time and Small farms (25%) and then increases on Medium and Large farms, with the Very Large farms renting 65% of the land they farm. The gross margin per hectare is similar on all sizes except for the Very Large farms where the gross margin was close to three quarters of the level achieved by the other businesses; Farm Business Income per hectare increases as the size of the business increases with Part-time farms and the Very Large farms having the lowest Farm Business Income per hectare, as illustrated in Figure 6.

[2] Note that the farm weights are used to allocate farms to quartiles so the number of farms in a quartile will not necessarily be equivalent to a quarter of the sample.

[3] Full details of the definitions relating to farm size are given in Appendix 1.

Table 1: Income details, 2016-17 for All Farms, and by Performance Band

Financial details, 2016/17		Performance Band		
	Average all farms	Low	Medium	High
Number of farms	286	43	153	90
Average farmed area (hectares)	91.9	54.6	92.5	127.4
Average % of owned total farmed area	62%	65%	63%	59%
	£ per farm			
Output				
Cattle	41,663	20,818	43,730	58,170
Sheep	16,673	3,932	21,048	20,535
Other livestock	584	983	133	1,092
Crops	5,244	1,553	6,258	6,868
Forage	4,374	788	5,010	6,654
Environmental schemes	3,406	1,141	3,081	6,298
Basic Payment Scheme	17,159	9,952	16,997	24,619
Rental income	5,635	2,329	3,521	13,136
Contract work	554	17	456	1,281
Miscellaneous output	11,610	5,481	10,220	20,460
Total Farm Output	106,901	46,993	110,454	159,113
Variable costs				
Concentrates	12,010	5,346	14,456	13,715
Purchased fodder	1,203	479	1,157	2,010
Veterinary and medicines	3,224	1,952	3,782	3,370
Other livestock costs	7,568	4,646	8,358	8,882
Seeds	1,180	463	1,266	1,717
Fertilisers	4,146	1,971	4,750	5,093
Crop protection	1,201	469	1,443	1,442
Other crop costs	842	521	1,005	834
Total Variable Costs	31,374	15,847	36,216	37,062
Gross Margin	75,527	31,146	74,238	122,051
Fixed costs				
Paid labour	5,760	3,452	6,056	7,453
Contract	6,703	4,914	7,336	7,207
Machinery repairs	4,832	3,957	5,137	5,087
Machinery fuel	3,621	2,318	3,857	4,439
Machinery depreciation	10,046	6,697	10,487	12,480
General costs	12,395	10,074	12,615	14,251
Property maintenance	4,495	3,631	4,257	5,826
Rent, hired in keep and bare land	5,399	3,104	6,005	6,458
Buildings depreciation	3,642	2,563	3,856	4,283
Interest	2,553	1,681	2,565	3,393
Total Fixed Costs	59,445	42,392	62,170	70,877
FARM BUSINESS INCOME	**16,082**	**-11,246**	**12,068**	**51,174**
All unpaid labour	27,418	27,267	29,132	24,137

Alternative Income Measures, 2016-17					
			Performance Band		
		Average all farms	Low	Medium	High
Reconciliation between Net Farm Income and Farm Business Income					
	FARM BUSINESS INCOME	16,082	-11,246	12,068	51,174
Plus-	Directors remuneration	225	90	404	0
Less-	Net income from assets associated with the farm business	0	0	0	0
Plus-	Buildings and works depreciation	3,642	2,563	3,856	4,283
Plus-	Landlord type expenses	453	384	410	607
Plus-	Imputed rental income	297	315	291	293
Less-	Imputed rent and rental value	13,801	8,829	14,118	18,091
Plus-	Net Interest	2,523	1,663	2,533	3,352
Less-	Unpaid labour of partners	5,337	4,165	6,171	4,830
Equals-	NET FARM INCOME**	4,083	-19,225	-727	36,788
** Excluding Breeding Livestock Stock Appreciation					

Table 2 Land Use, 2016-17 for All Farms, and by Performance Band

Land Use and Indicators of Technical Efficiency, 2016-17				
		Performance Band		
	Average all farms	**Low**	**Medium**	**High**
Number of farms in group	286	43	153	90
Average farmed area (hectares)	91.9	54.6	92.5	127.4
Average proportion of owned total farmed area(%)	62%	65%	63%	59%
Land use				
Area of crops	6.0	2.2	6.8	8.0
Temporary grass	11.6	4.6	13.7	14.4
Permanent grass	62.9	44.4	62.6	81.8
Fodder crops	2.3	0.4	2.5	3.8
Rough grazing	3.9	0.5	1.3	12.4
Uncropped, fallow and turf	1.3	0.8	1.4	1.5
Forage hired in	3.9	1.7	4.3	5.4
Stocking				
Average number of dairy cows	1	1	1	0
Average number of beef cows	22	18	23	26
Average number of other cattle	89	57	94	111
Average number of ewes	156	46	195	187
Average number of other sheep	179	58	219	221
Grazing livestock units	GLUs per farm			
Dairy cows	0.7	0.7	0.9	0.1
Beef cows	11.2	9.0	11.4	13.1
Other cattle	53.1	34.5	54.5	68.8
Sheep	25.3	7.8	31.4	30.6
Other livestock	1.3	1.6	0.5	2.4
Total	91.6	53.7	98.6	115.0
GLUs per ha	1.08	1.04	1.17	0.98
GLUs per adjusted ha	1.09	1.05	1.18	0.99

Table 3 Balance Sheet details, 2016-17 for All Farms, and by Performance Band

Balance Sheet, 2016-17		**Performance Band**		
(end of year)	Average all farms	**Low**	**Medium**	**High**
Number of farms in group	286	43	153	90
Average farmed area (hectares)	91.9	54.6	92.5	127.4
Average proportion of owned total farmed area	62%	65%	63%	59%
	£ per farm			
End of year assets & liabilities				
Land & buildings	1,084,710	733,259	1,126,225	1,349,666
Basic Payment Scheme	16,830	9,830	16,522	24,380
Machinery	61,330	40,489	63,370	77,887
Tenant's other assets	229	214	189	323
Breeding livestock	43,063	26,142	47,986	49,970
Total fixed assets	**1,206,163**	**809,933**	**1,254,292**	**1,502,227**
Trading livestock	52,716	30,637	57,554	64,900
Crops	1,345	407	1,586	1,790
Forage and cultivations	5,898	3,629	6,817	6,307
Stores	4,786	4,004	4,845	5,443
Debtors and loans	9,764	9,544	7,999	13,514
Bank credit and cash	29,018	18,203	22,872	52,027
Other current assets	0	0	0	0
Total current assets	**103,528**	**66,423**	**101,673**	**143,981**
Total assets	**1,309,691**	**876,356**	**1,355,965**	**1,646,208**
Financed by				
AMC	17,674	1,662	9,032	50,822
Bank loans	28,716	11,391	34,792	33,717
Other long term	9,920	9,573	10,226	9,651
Total long term	**56,311**	**22,627**	**54,050**	**94,190**
HP and lease	6,210	5,599	7,130	4,975
Creditors	9,303	7,244	9,190	11,566
Bank overdraft	15,576	17,481	15,525	13,791
Other short term	328	863	195	65
Total current liabilities	**31,416**	**31,187**	**32,039**	**30,397**
Total Liabilities	**87,727**	**53,813**	**86,090**	**124,587**
Net worth	**1,221,963**	**822,542**	**1,269,875**	**1,521,620**
Balance sheet ratios-				
% Owner equity (net worth v.total assets)	93%	94%	94%	92%
% Fixed assets vs. total assets	92%	92%	93%	91%
Gearing (long-term loans v.total assets)	4%	3%	4%	6%
Total debt (external liabilities v.net worth)	7%	7%	7%	8%

Table 4 Fund flow, 2016-17 for All Farms, and by Performance Band

FUND FLOWS, 2016-17		**Performance Band**		
	Average all farms	**Low**	**Medium**	**High**
Number of farms in group	286	43	153	90
Average farmed area (hectares)	91.9	54.6	92.5	127.4
Average proportion of owned total farmed area(%)	62%	65%	63%	59%
	£ per farm			
Funds available from trading				
Farm Business Income	16,082	-11,246	12,068	51,174
Buildings and works depreciation	3,642	2,563	3,856	4,283
Machinery depreciation	10,046	6,697	10,487	12,480
Change in valuation *	-1,245	7,755	-3,207	-6,231
Trading net fund flow surplus	28,525	5,769	23,205	61,706
Funds used for farm investments				
Net property and quota purchases	1,462	-3,287	1,813	5,463
Net landlord capital purchases	5,738	4,728	6,766	4,682
Net machinery and equipment purchases	10,049	7,258	9,107	14,698
Capital net fund flow	17,250	8,699	17,686	24,843
Total farm fund flow surplus	11,276	-2,930	5,519	36,863
Funds used for private expenditure				
Private drawings	22,239	14,310	19,499	35,572
Net private funds introduced	15,655	23,743	17,372	4,212
Private fund outflow	6,584	-9,433	2,128	31,360
Total net fund flow surplus	**4,692**	**6,503**	**3,391**	**5,502**
Increase in loans and deposits	-631	-2,540	1,326	-2,655
Increase in bank balance	6,172	4,758	6,052	7,814
Increase in cash in hand	26	-11	31	55
Increase in debtors	-1,632	-2,263	-1,034	-2,204
Increase in creditors	505	-1,478	331	2,817
Net change in funding	**-4,692**	**-6,503**	**-3,391**	**-5,502**

* An increase in valuation is represented as a negative, with funds being used to increase the live and deadstock valuation

Figure 5 Farm Business Income- Income bands, the percentage of farms in each band

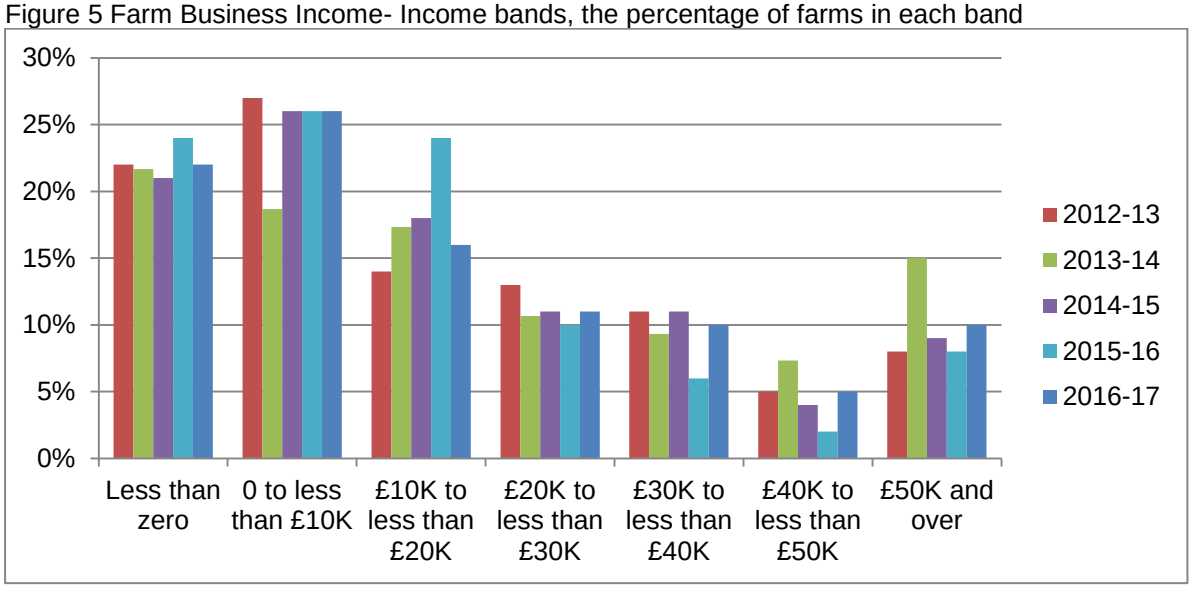


Table 5 Farm Business Income by Performance Band, 2016-17, £ per hectare

Performance Band	Low	Medium	High
Average farmed area (hectares)	54.6	92.5	127.4
Average % of owned total farmed area	65%	63%	59%
	£ per hectare		
Livestock and crops	514	823	733
Agri- environment type schemes	21	33	49
Basic Payment Scheme	182	184	193
Other	143	153	274
TOTAL FARM OUTPUT	860	1193	1249
Variable costs			
Livestock specific costs	228	300	220
Crop specific costs	63	91	71
TOTAL VARIABLE COSTS	291	391	291
TOTAL GROSS MARGIN	569	802	958
Fixed costs			
Labour	63	65	59
Machinery	328	290	229
General farming costs	184	136	112
Land & Property	170	153	130
Interest paid	31	28	27
TOTAL FIXED COSTS	776	672	557
FARM BUSINESS INCOME	-207	130	401

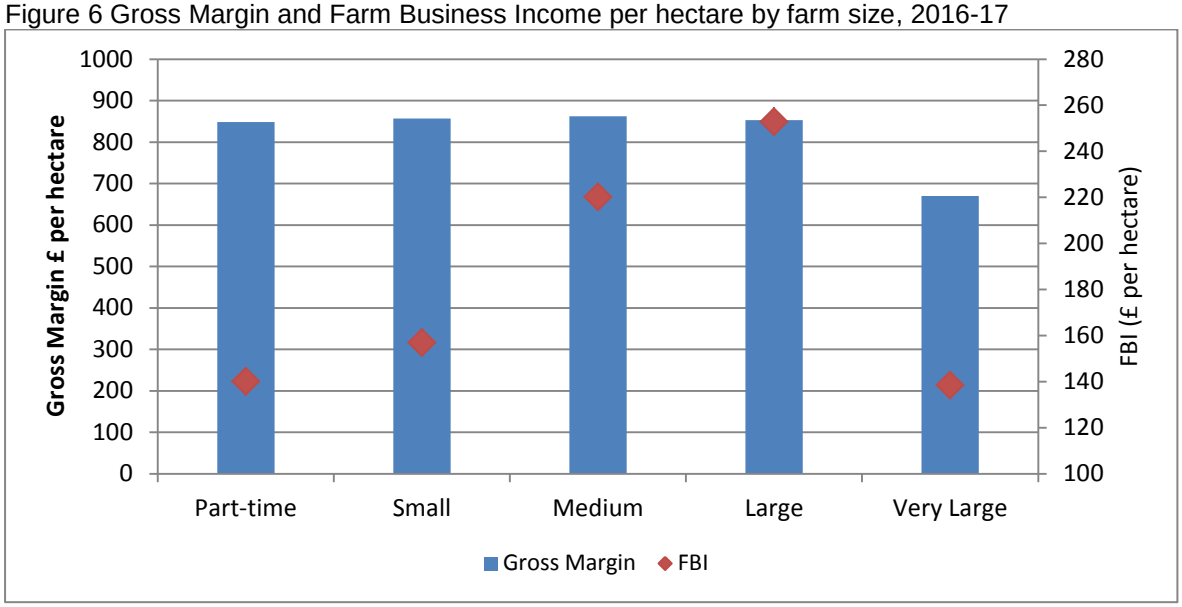
Table 6 Farm Business Income for Conventional and Organic farms, 2016-17

Type of Production	**Conventional**	**Organic**
Number of farms	253	33
Average farmed area (hectares)	92.1	88.1
Average % of owned total farmed area	61%	78%
	£ per farm	
Output		
Cattle	42,571	29,726
Sheep	17,271	8,821
Other livestock	577	685
Crops	5,475	2,204
Forage	4,594	1,484
Environmental schemes	3,205	6,045
Basic Payment Scheme	17,148	17,304
Rental income	5,825	3,139
Contract work	595	7
Miscellaneous output	11,313	15,506
Total Farm Output	108,574	84,922
Variable costs		
Concentrates	12,721	2,660
Purchased fodder	1,204	1,178
Veterinary and medicines	3,298	2,259
Other livestock costs	7,738	5,343
Seeds	1,182	1,152
Fertilisers	4,405	743
Crop protection	1,288	58
Other crop costs	861	594
Total Variable Costs	32,698	13,987
Gross Margin	75,876	70,936
Fixed costs		
Paid labour	5,669	6,954
Contract	6,754	6,024
Machinery repairs	4,952	3,258
Machinery fuel	3,718	2,343
Machinery depreciation	10,004	10,600
General costs	12,447	11,702
Property maintenance	4,458	4,980
Rent, hired in keep and bare land	5,617	2,532
Buildings depreciation	3,576	4,512
Interest	2,543	2,679
Total Fixed Costs	59,738	55,584
FARM BUSINESS INCOME	**16,137**	**15,352**
All unpaid labour	27,497	26,371

Table 7: Income details, 2016-17 for All Farms, and by size of business

Farm Size by Standard Labour Requirement	Part-time	Small	Medium	Large	Very large
Number of farms	45	86	66	52	37
Average farmed area (hectares)	55.2	76.7	104.9	165.0	333.9
Average % of owned total farmed area	75%	72%	68%	49%	35%
	£ per farm				
Output					
Cattle	21,313	41,197	54,463	76,123	123,216
Sheep	2,482	8,309	26,723	50,314	101,140
Other livestock	502	92	405	0	5,939
Crops	1,372	3,487	6,318	11,929	34,621
Forage	4,069	5,364	1,750	7,370	2,983
Environmental schemes	2,174	2,647	3,329	5,962	14,377
Basic Payment Scheme	11,451	15,115	19,999	28,481	50,729
Rental income	6,189	3,318	5,258	8,517	10,473
Contract work	142	1,114	662	733	145
Miscellaneous output	9,992	12,406	10,417	16,612	15,128
Total Farm Output	59,686	93,050	129,324	206,042	358,751
Variable costs					
Concentrates	4,234	10,410	14,886	26,541	55,098
Purchased fodder	175	847	1,873	3,057	7,061
Veterinary and medicines	1,257	2,890	4,005	6,540	14,230
Other livestock costs	3,933	6,818	9,174	13,783	28,068
Seeds	669	938	1,144	2,221	5,324
Fertilisers	1,744	3,678	5,648	8,455	15,861
Crop protection	473	823	1,278	2,544	7,210
Other crop costs	347	918	919	2,130	2,123
Total Variable Costs	12,832	27,322	38,928	65,270	134,974
Gross Margin	46,854	65,727	90,396	140,772	223,777
Fixed costs					
Paid labour	2,312	4,435	7,354	9,662	32,512
Contract	5,446	5,808	6,967	9,683	16,933
Machinery repairs	2,882	4,910	5,495	8,652	12,550
Machinery fuel	2,079	3,209	4,619	6,951	10,654
Machinery depreciation	6,554	9,449	11,954	16,526	26,952
General costs	10,286	11,525	13,312	17,605	23,936
Property maintenance	3,212	4,301	4,904	6,408	12,275
Rent, hired in keep and bare land	2,830	4,163	5,813	12,636	20,888
Buildings depreciation	2,224	3,357	4,382	6,205	11,014
Interest	1,295	2,530	2,518	4,726	9,870
Total Fixed Costs	39,118	53,687	67,318	99,054	177,584
FARM BUSINESS INCOME	**7,736**	**12,041**	**23,079**	**41,718**	**46,194**
All unpaid labour	21,604	29,062	31,192	40,569	33,282

Figure 6 Gross Margin and Farm Business Income per hectare by farm size, 2016-17



The importance of the Basic Payment Scheme to the Lowland Livestock Grazing farms

- With the low level of the Farm Business Income generated by the Lowland Grazing Livestock farms the importance of the Basic Payment Scheme (BPS) cannot be underestimated, as illustrated in Table 8. The Basic Payment Scheme per farm represents 16% of the Total Output for Lowland Livestock Grazing farms and is greater than the level of the Farm Business Income. Without the Basic Payment Scheme, the average Lowland Livestock Grazing farm would be making a Farm Business Income loss of £-1,077. The Medium and Large farms would be making a positive income and all other sizes would be making losses up to nearly £4,500.
- Regarding the importance of the Basic Payment Scheme to the Lowland Grazing Livestock farms the reality of farming without the majority of this support would look bleak and unlikely to be sustainable in the current structure

Table 8 Farm Business Income and Basic Payment Scheme, 2016-17

	All Farms	Part-time	Small	Medium	Large	Very Large
	£ per farm					
Farm Business Income	16,082	7,736	12,041	23,079	41,718	46,194
Basic Payment Scheme Income	17,159	11,451	15,115	19,999	28,481	50,729
Farm Business Income less BPS	-1,077	-3,715	-3,074	3,080	13,237	-4,535
Private drawings	22.239	18,908	20,939	22,714	32,938	38,175

Farm Business Income by 'Cost Centre'[4]

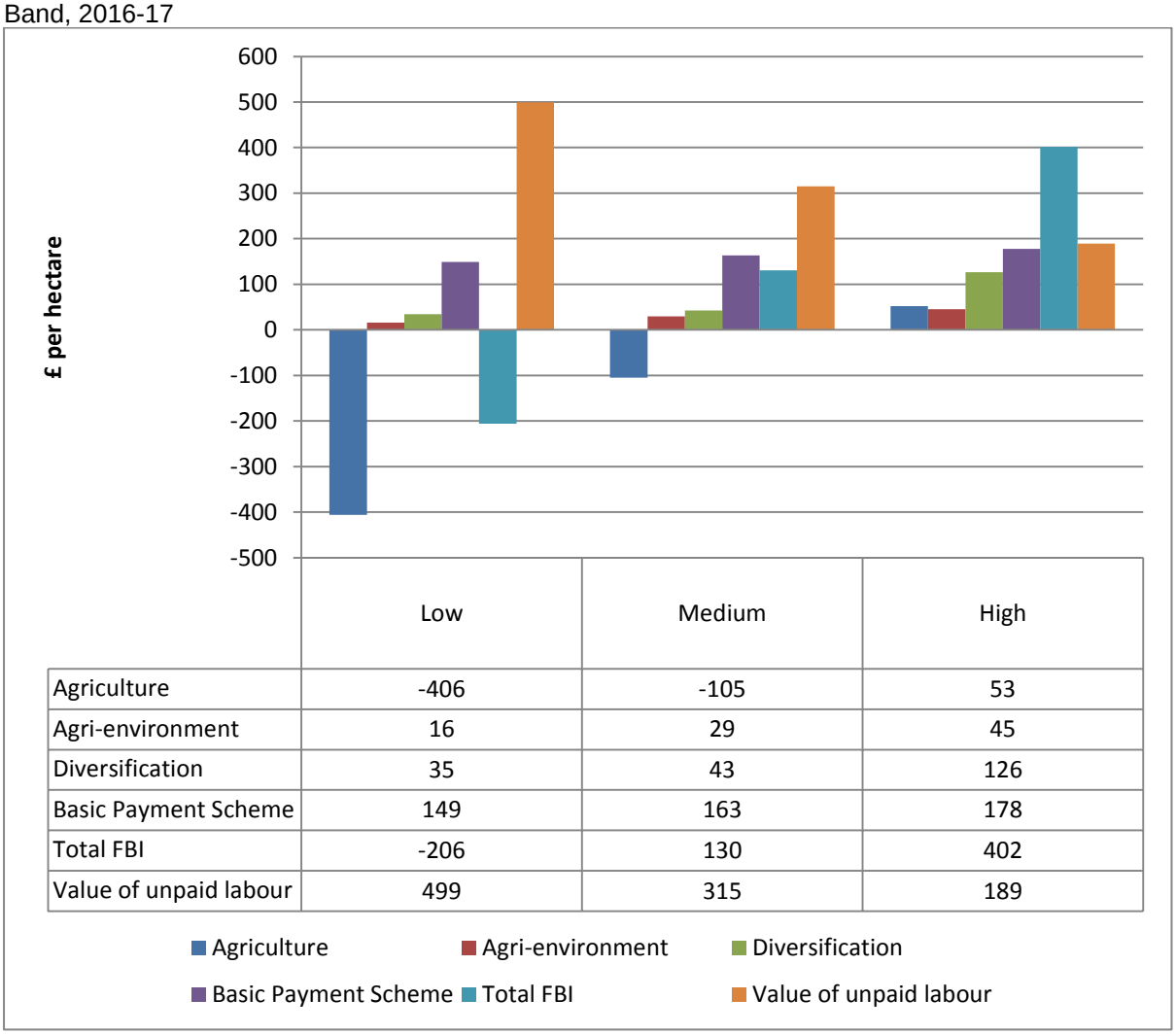
- The majority of the Farm Business Income comes from the Basic Payment Scheme 'cost centre' - 95% of the total Farm Business Income figure for 'All farms'. (Table 9).
- The Farm Business Income from the Agri-environment and Diversification cost centres are close to the average figure received per year since 2009.but are falling for the Agri-environment and increasing for the Diversification cost centres (Table 9).
- The loss from the Agriculture cost centre is the second largest since 2009 and is more than one and a half times the average over the same period. The largest loss was in the previous year. Only in 2011 did the Agriculture Cost centre make a positive contribution to the total Farm Business Income. All other years there were losses and this averages, since 2009, more than £5,500 per year. (Table 9).
- The Agriculture cost centre accounts for most of the difference between the Farm Business Income per hectare of the three performance groups. Farm Business Income per hectare from 'Agriculture' increases with performance band with the Low performers making a loss of £406 per hectare, the Medium making a loss of £105 and the High performers making £53 per hectare. The Low performance band showed an improvement per hectare of £35 with the Medium performers improving £4 per hectare less and High performers increasing by £43 per hectare compared to the previous year. (Figure 7).
- On Low and Medium Performing farms the contribution from the Agri-environmental and Diversification cost centres to total Farm Business Income is lower than that of the High performance band, with the Low performing group close to a third of the High performing group. (Figure 7).
- The Farm Business Income generated by the Basic Payment Scheme cost centre is lowest for Low performing farms (£ per ha) with High performing farms receiving £29 more per hectare, and is £14 higher per hectare for Medium performing farms. (Figure 7).
- When considering the size of business the contribution from the 'Agriculture' cost centre is negative for each group with the largest loss on the Very Large farms. The Large farms have the highest per hectare income, with the lowest income per hectare from the Part-time farms (Figure 8).
- The value of unpaid labour used by the businesses is illustrated alongside the Farm Business Income by Cost centre (Figure 8). Only the Large and Very Large farms have a Farm Business Income greater than the value of unpaid labour. The contribution from the Basic Payment Scheme cost centre ranges from 129% of the total Farm Business Income for Part-time farms, 112% for Small farms, 99% for Very Large farms, 79% for Medium farms and 62% for Large farms.

[4] For these calculations, Casual labour and Contracting are considered variable costs rather than fixed costs as in our other tables, and interest is net rather than being shown as an income and a cost.

Table 9 Farm Business Income by Cost Centre by Performance Band, 2016-17

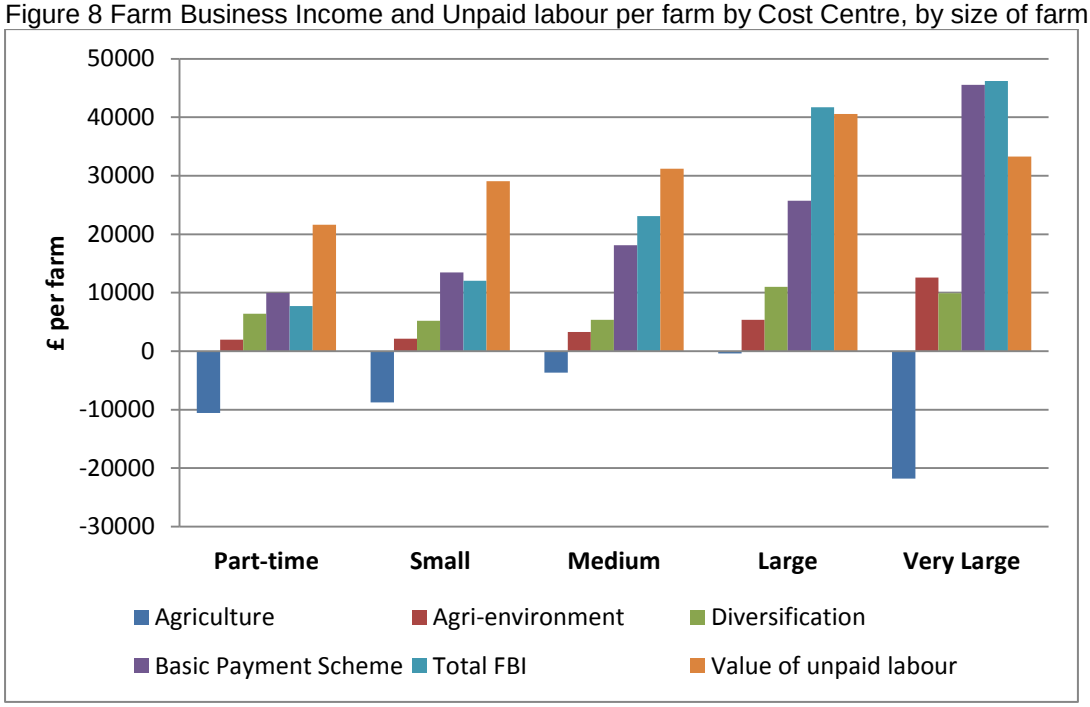
£ per farm	All farms	Low	Medium	High
Total Farm Business Income	16,082	-11,246	12,068	51,174
Of which, by cost apportionment				
Agriculture	-8,694	-22,153	-9,722	6,690
Agri-environment and other payments	3,022	876	2,728	5,736
Diversification out of agriculture	6,489	1,896	3,954	16,111
Basic Payment Scheme	15,264	8,135	15,108	22,637

Figure 7 Farm Business Income and Unpaid labour per hectare by Cost Centre, by Performance Band, 2016-17



	Low	Medium	High
Agriculture	-406	-105	53
Agri-environment	16	29	45
Diversification	35	43	126
Basic Payment Scheme	149	163	178
Total FBI	-206	130	402
Value of unpaid labour	499	315	189

Figure 8 Farm Business Income and Unpaid labour per farm by Cost Centre, by size of farm, 2016-17



Gross Margin data from the Lowland Grazing Livestock farms[5]

- Gross margin per beef cow is nearly a quarter higher for the organic producers as compared to conventional producers, but with lower stocking rates the gross margin per hectare for the organic producers is similar to the conventional producers. The Top Third producers' gross margins per cow are more than 50% higher than that of the average, with the majority of the difference due to higher output, but also lower variable costs. (Table 10)
- The gross margin per beef cow has remained relatively stable over the last six years for Conventional producers but is more variable for Organic producers. (Figure 9)
- The gross margin per cow and per hectare is broadly similar across the size groups. Care is needed to interpret the data due to small sample sizes (Figure 10).
- The beef rearing gross margin data for 'beef bred' store cattle and finished cattle are summarized in Table 11 and Figure 10. Both systems produce a broadly similar gross margin per head, both on average and at the premium level. On a per hectare basis the finishers have higher stocking rates so achieved higher gross margins. Gross margins for beef rearing have fluctuated over the last six years but the average for 2016-17 is close to the level of the average for the previous five years.
- For the lowland beef bred finishing systems, the lower variable costs per head for the organic producers (£104) and higher output (£66) than average, leaving the average conventional beef bred finisher with the lower gross margin per head (See Table 11).
- The gross margins from the cattle rearing systems show the Top third group of producers having margins per head at least 50% higher than the average. On a per hectare basis a similar increase can also be seen for both the premium beef finishers and store cattle producers. As with most of the gross margins from these farms the Top third producers have higher output and lower variable costs.
- Apart from the smallest size group the output per head from the Beef Bred Finished Cattle producers tends to increase with the scale of enterprise, as does the level of variable costs, particularly concentrate feeds, but the resulting gross margins are not consistent (Figure 12)[6]. The herds with less than 50 head have the highest gross margin per head and the herds with 85-170 have the lowest. The stocking rate is greatest for the largest herds and increased with scale of system.
- The gross margin per ewe for the lowland ewes for the conventional producers is similar to the organic producers. The stocking rates for both types of production are low, at close to 5 ewes per hectare which is about half the stocking rate of Dairy farms. As compared to the previous year the gross margin per ewe from both conventional and organic lowland sheep flocks was similar to previous three years (Table 12 and Figure 13).
- The largest lowland flocks have the lowest gross margin per head but there is a lot of variability in this group particularly on a per hectare basis (Figure 14).

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[5] A number of the farms within the sample are able to calculate gross margins for their enterprises. Where the sample sizes allow, top third group figures (weighted total population) are also produced. Sample sizes are small for some of these analyses and standard error bars have been included in the figures to indicate the accuracy of the estimate of the mean. Error bars are shown on 95% confidence intervals as a measure of the uncertainty that may apply to the estimated means. These signify that we are 95% confident that this range contains the true value. They are calculated as the standard error (se) multiplied by 1.96 to give the 95% confidence interval (95% CI)

[6] The number of data points for each herd size group is low (less than 30 in each case) so differences between groups should be treated with some caution.

- Gross margins per hectare from all the main livestock enterprises increased compared to the previous year but the change is not statistically significant. Comparing the average gross margin per hectare across the differing livestock enterprises (Figure 15), the beef finishers have the highest margin followed by store cattle producers and the ewes, with the beef cows having the lowest gross margin per hectare

Table 10 Lowland Beef Cow Gross Margin data

Gross margins per cow, per LU and per hectare				2016-17
(Weighted average performance)				
		Average		Top Third*
		Conventional	Organic	Conventional
Number of farms		136	18	
Cows per herd		40	39	43
Stocking rate:	LU/ha	1.15	0.90	1.17
	ha/LU	0.87	1.11	0.85
		£ per cow		
Output -	calf output	504.4	532.2	594.6
	depreciation	-64.2	-80.1	-46.6
ENTERPRISE OUTPUT (excl. BLSA)		440.3	452.1	547.9
Concentrates		35.9	10.0	24.1
Coarse fodder		12.7	21.7	13.2
Veterinary and medicines		28.5	33.9	27.4
Other livestock costs		50.0	53.1	44.2
Forage †		57.0	16.3	47.2
TOTAL VARIABLE COSTS ‡		184.0	135.1	156.0
GROSS MARGIN per cow (excl. BLSA)		256.2	317.0	391.9
GROSS MARGIN per LU (excl.BLSA)		256	317	382
GROSS MARGIN per hectare (excl. BLSA)		295	286	460
Concentrates per £100 output		8	2	4
Averages - previous year				
Stocking rate:	LU/ha	1.04	0.88	1.11
Gross Margin: £/cow		240.9	317.4	398.7
Gross Margin: £/ha		250	279	443
* Top Third of Weighted Population				
† Forage includes seeds, fertilisers, sprays and other crop costs				
‡ Restricted to concentrates, coarse fodder, veterinary and medicines, other livestock costs and forage.				

* Top third selected by level of gross margin per cow

Figure 9 Gross Margin per head for Beef Cows

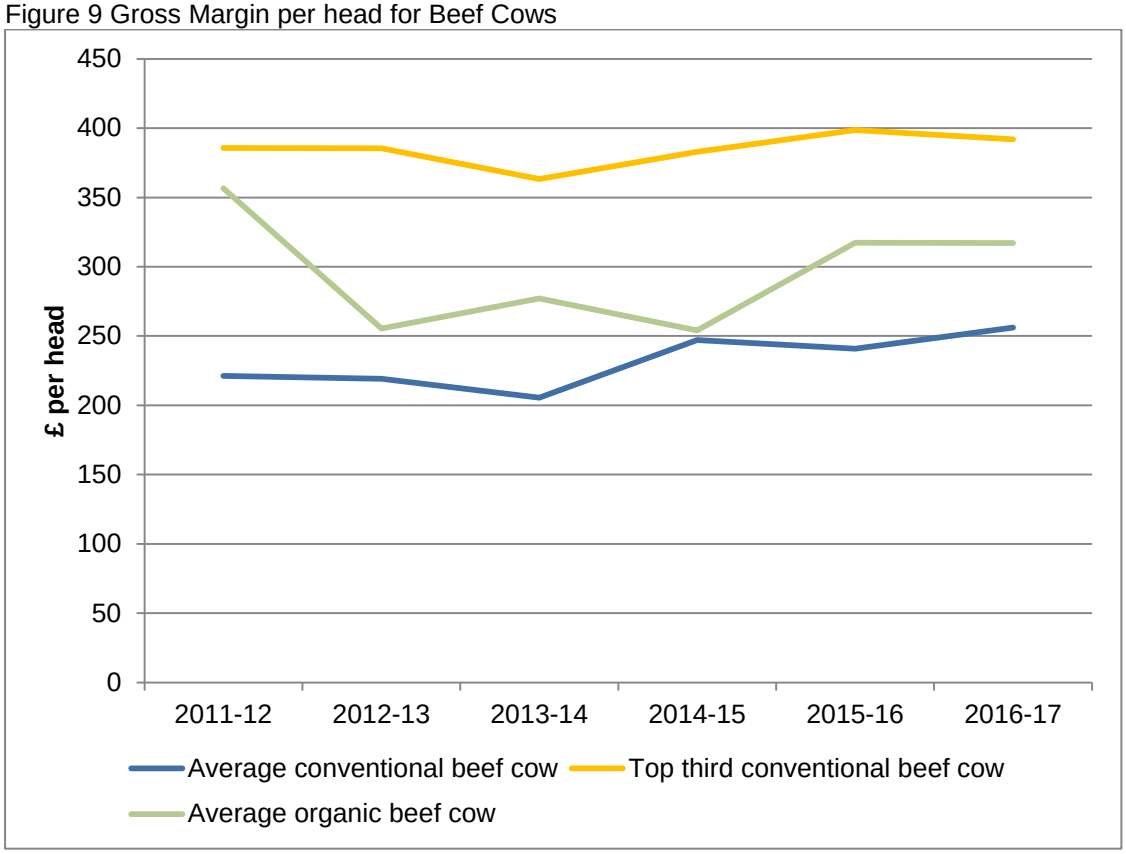
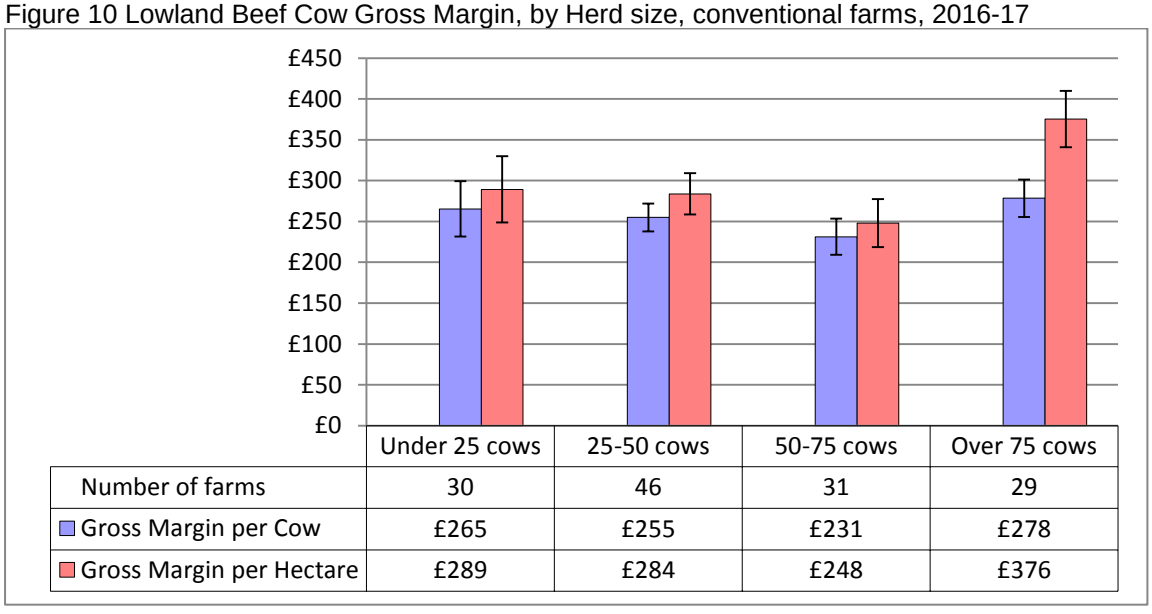


Figure 10 Lowland Beef Cow Gross Margin, by Herd size, conventional farms, 2016-17



	Under 25 cows	25-50 cows	50-75 cows	Over 75 cows
Number of farms	30	46	31	29
Gross Margin per Cow	£265	£255	£231	£278
Gross Margin per Hectare	£289	£284	£248	£376

Table 11- Lowland Beef Rearing Enterprise Gross Margin data, 2016-17

Gross margins per head, per LU and per hectare						
(Weighted average performance)		Beef bred store cattle		Beef bred finished cattle		
		Average	Top Third*	Average		Top Third*
		Conventional	Conventional	Conventional	Organic	Conventional
Number of farms		50		87	13	
Cattle per herd		49	36	102	51	83
Average finished sale price - £/head				1147	1129	1198
Stocking rate:	LU/ha	1.19	1.14	1.72	1.57	1.58
	ha/LU	0.84	0.88	0.58	0.64	0.63
		£ per head				
OUTPUT		403.0	548.3	463.4	529.5	604.4
Concentrates		76.0	84.2	122.0	25.7	92.7
Coarse fodder		5.4	3.4	9.5	7.2	11.6
Veterinary and medicines		14.0	14.6	13.8	15.3	12.7
Other livestock costs		55.1	69.8	57.7	73.3	53.4
Forage †		27.4	30.3	32.5	10.0	23.9
TOTAL VARIABLE COSTS ‡		178.0	202.4	235.6	131.5	194.3
GROSS MARGIN per head		225.0	345.9	227.8	398.0	410.1
GROSS MARGIN per LU		406	656	392	624	648
GROSS MARGIN per hectare		484	750	676	978	1024
Concentrates per £100 output		19	15	26	5	15
Averages - previous year						
Stocking rate:	LU/ha	1.11	1.06	1.65	1.52	1.66
Gross Margin: £/head		215.0	390.1	175.1	317.0	299.9
Gross Margin: £/ha		424	723	474	729	830
Average finished sale price- £ /head				1136	1215	1155
* Top Third of Weighted Population						
† Forage includes seeds, fertilisers, sprays and other crop costs						
‡ Restricted to concentrates, coarse fodder, veterinary and medicines, other livestock costs and forage.						

* Top third selected by level of gross margin per head

Figure 11 Gross margins per head of Cattle Rearing Systems

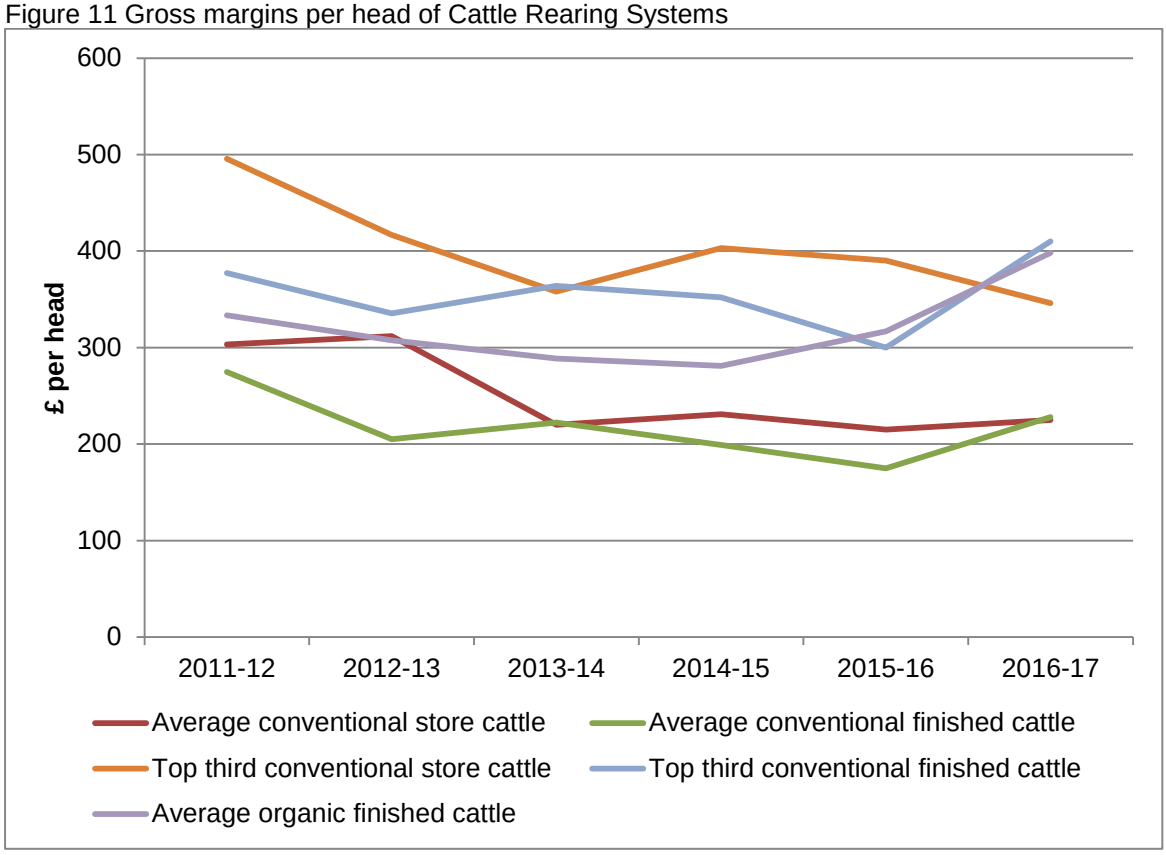
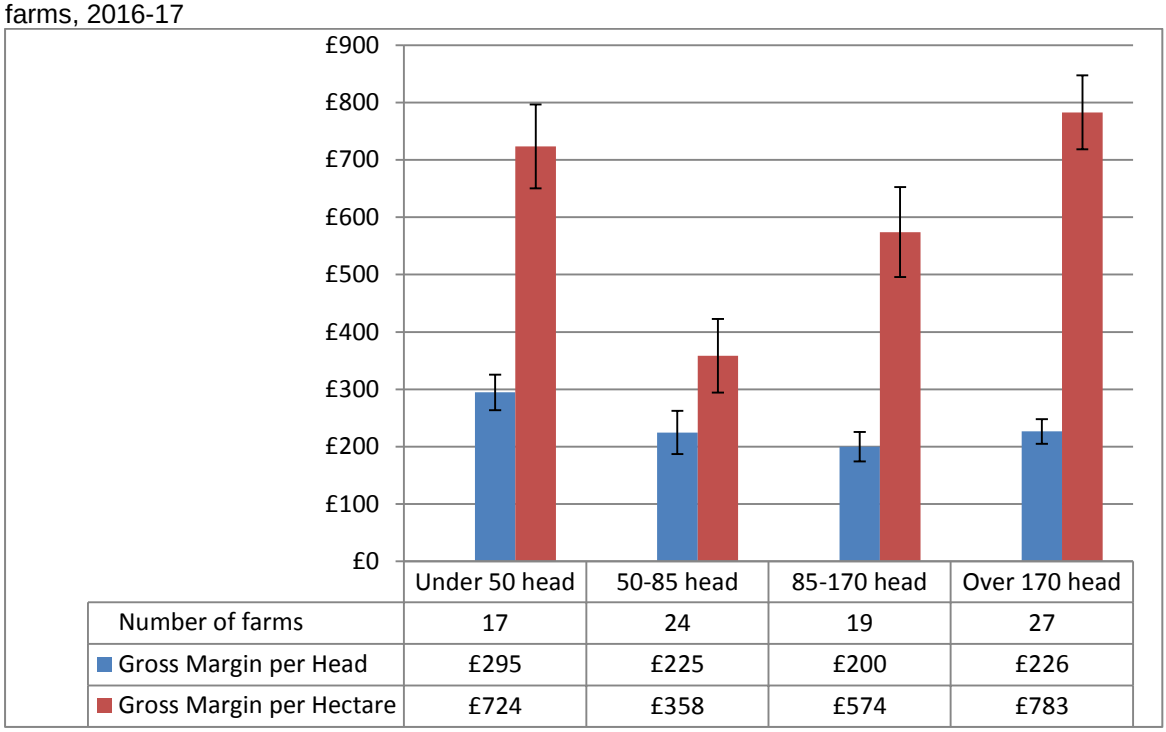


Figure 12 Beef Bred Finished Cattle Gross Margin per Head & per Hectare, by herd size conventional farms, 2016-17



	Under 50 head	50-85 head	85-170 head	Over 170 head
Number of farms	17	24	19	27
Gross Margin per Head	£295	£225	£200	£226
Gross Margin per Hectare	£724	£358	£574	£783

Table 12 –Lowland Ewe Gross Margin data, 2016-17

Gross margins per ewe and per hectare		2016-17		
(Weighted average performance)				
		Average		Top Third*
		Conventional	Organic	Conventional
Number of flocks		114	13	
Ewes per flock		388	183	265
Average lamb sale price - £/lamb		77.6	76.6	79.6
Stocking rate - ewes per hectare		5.86	4.33	6.48
		£ per head		
Output -	lambs	116.9	102.5	153.6
	wool	2.8	3.1	3.0
	depreciation	-14.3	-13.8	-13.0
ENTERPRISE OUTPUT (excl. BLSA)		105.4	91.8	143.6
Concentrates		18.9	8.3	22.6
Coarse fodder		1.8	2.6	1.3
Veterinary and medicines		8.0	7.2	8.5
Other livestock costs		12.0	10.8	13.6
Forage †		7.3	7.1	7.4
TOTAL VARIABLE COSTS ‡		47.9	36.1	53.2
GROSS MARGIN per ewe (excl. BLSA)		57.4	55.8	90.4
GROSS MARGIN per LU (excl.BLSA)		361	342	548
GROSS MARGIN per hectare (excl. BLSA)		336	242	584
Concentrates per £100 of output		18	9	16
Averages - previous year				
Stocking rate:	ewes/ hectare	5.4	5.3	7.0
Gross Margin: £/ewe		54.7	55.9	75.1
Gross Margin: £/ha		295	299	523
Average finished sale price- £ /head		70.9	71.5	72.4
* Top Third of Weighted Population				
† Forage includes seeds, fertilisers, sprays and other crop costs				
‡ Restricted to concentrates, coarse fodder, veterinary and medicines, other livestock costs and forage.				

*Top third selected by gross margin per ewe

Figure 13: Lowland Ewe Gross Margin per Head. 2016-17

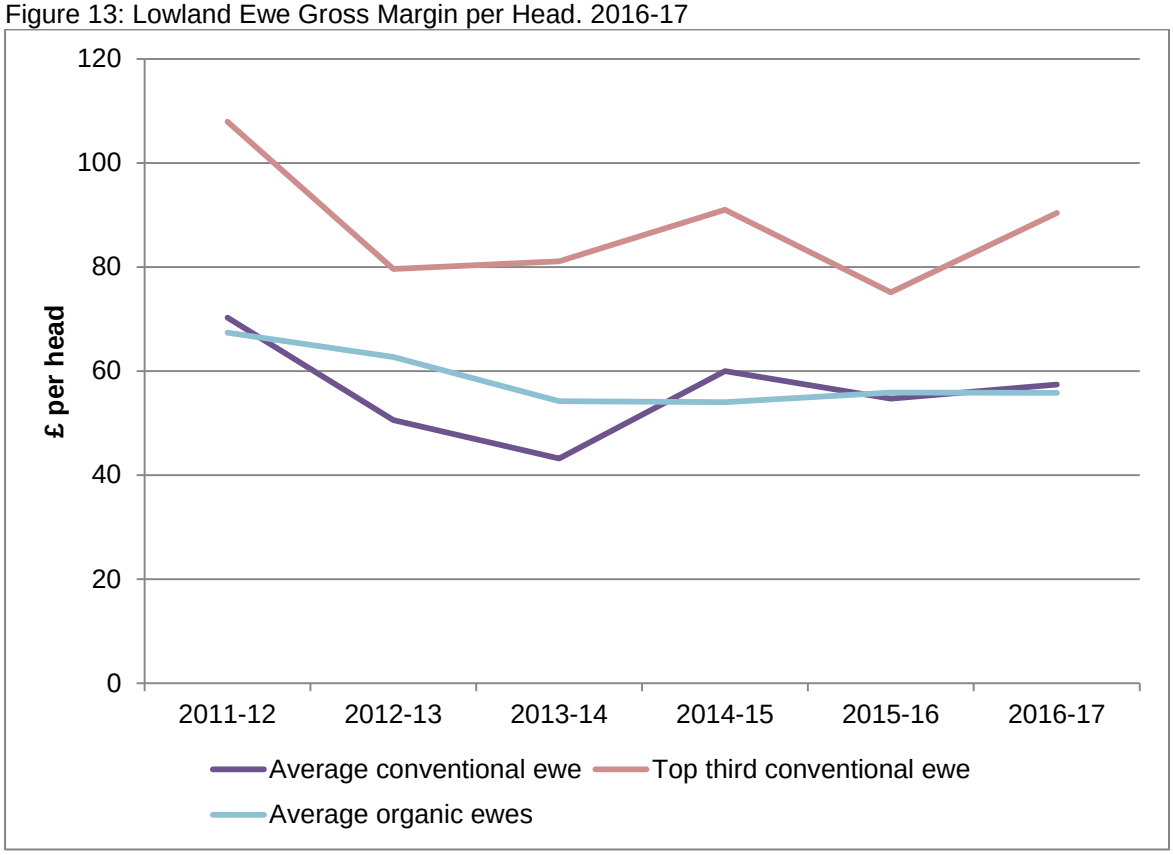
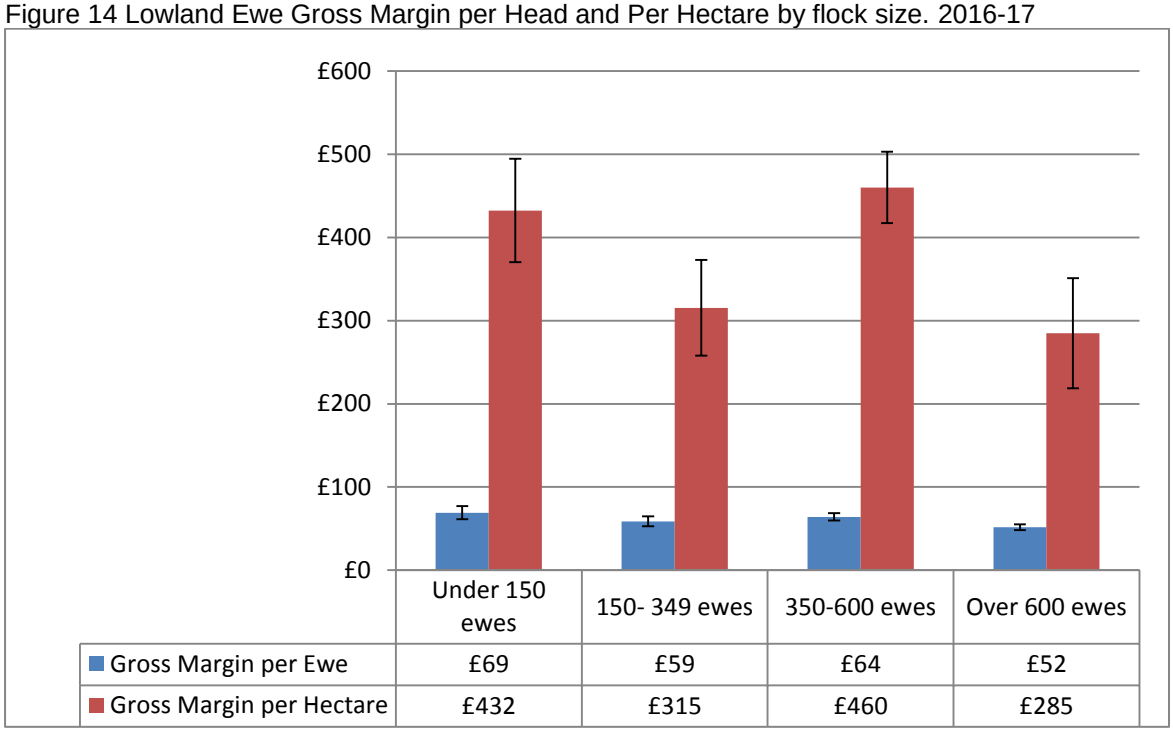


Figure 14 Lowland Ewe Gross Margin per Head and Per Hectare by flock size. 2016-17



	Under 150 ewes	150- 349 ewes	350-600 ewes	Over 600 ewes
Gross Margin per Ewe	£69	£59	£64	£52
Gross Margin per Hectare	£432	£315	£460	£285

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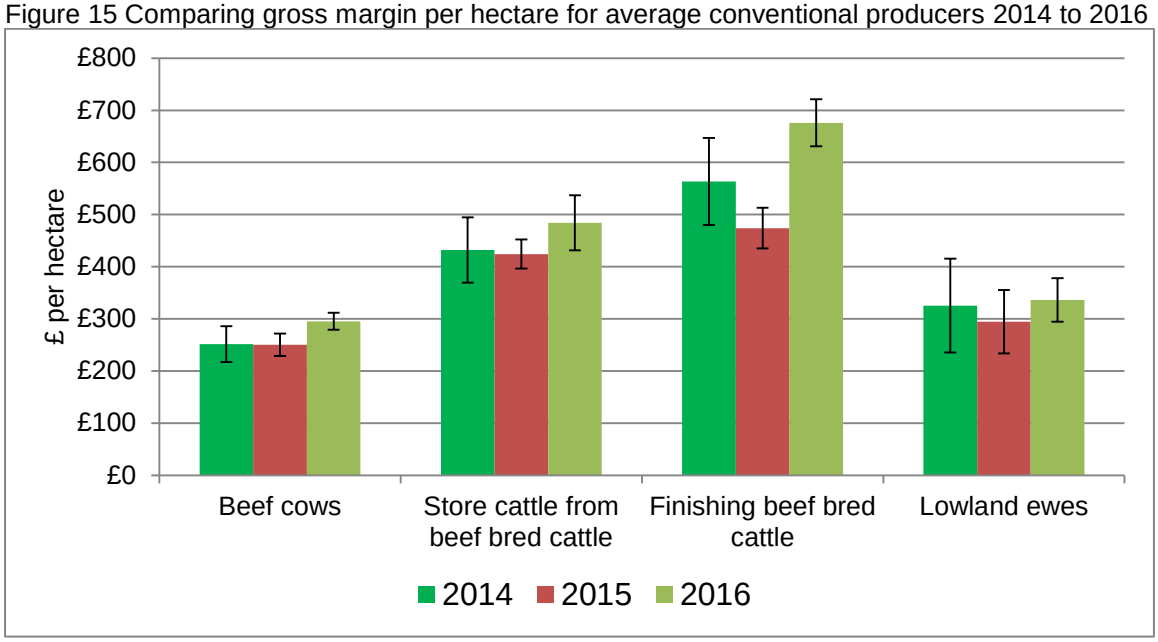
Figure 15 Comparing gross margin per hectare for average conventional producers 2014 to 2016



Appendix 1 The Farm Business Survey (FBS)

General

The FBS sample covers businesses with an economic Standard Output of 25,000 Euros and above. Practically all of the sampled accounts close within the four months from the end of December to the end of the following April with concentrations at the close of the calendar year and towards the end of March and early April. About 75 per cent of the accounts close during these two peak periods. Thus the results relate, on average, to March - February years.

Classification of survey farms by type of farming and size of business

A revised classification of farm types was introduced in 2010/11 based on Standard Outputs, which caused changes to the distribution of farms by farm type. Further details of the revised classification and its effect on the FBS sample may be found at:
https://www.gov.uk/farm-business-survey-technical-notes-and-guidance

The lower size threshold for the Farm Business Survey was also changed from 0.5 Standard Labour Requirements (in annual full-time equivalents) to a standard output of 25,000 Euros. Therefore, the results published here relate to farms for which the total standard output from cropping and stocking activities is at least 25,000 Euros.

The Standard Labour Requirement (SLR) of a farm represents the normal labour requirement, in Full Time Equivalents, for all the enterprises on a farm under typical conditions. The SLR for a farm is calculated from standard coefficients applied to each enterprise on the farm. The standard coefficients represent the input of labour required per head of livestock or per hectare of crops for enterprises of average size and performance.

Farms in the sample are grouped by type of farm based on the EC system of classification defined by Commission Decision 85/377/EEC (with minor modifications to adapt it to United Kingdom conditions) and Standard Outputs per hectare of crop area and per head of livestock estimated over the period 2008-2012.

The Standard Output (SO) is a financial measure used to classify farm type. Standard outputs measure the total value of output of any one enterprise - per head for livestock and per hectare for crops. For crops, this will be the main product (e.g. wheat, barley, peas) plus any by-product that is sold, for example straw. For livestock it will be the value of the main product (milk, eggs, lamb, pork) plus the value of any secondary product (calf, wool) minus the cost of replacement. Up until 2010, standard gross margins were used for the classification of farms. The difference between standard outputs and standard gross margins is that no variable costs are deducted in the derivation of standard outputs. Each farm is assigned a total SO by aggregating the SOs for its agricultural enterprises. The farm is classified into a 'particular' type of farming by evaluating the proportion of its total SO deriving from different enterprises.

The characteristics of each farm type are summarised as follows:
Dairy-Farms where the dairy enterprise, including followers, accounts for over two-thirds of their total SO.
LFA grazing livestock-Farms with more than two-thirds of their total SO in cattle and sheep except holdings classified as dairy. A farm is classified as in the LFA if 50% or more of its total area is in the EC Less Favoured Area (both Disadvantaged and Severely Disadvantaged).
Lowland grazing livestock-farms with more than two-thirds of their total SO in cattle and sheep except holdings classified as dairy. A farm is classified as "lowland" if less than 50% of its total area is in the EC Less Favoured Area.
Cereals- Farms on which cereals, oilseeds, peas and beans harvested dry and land set aside account for over two-thirds of their total SO (holdings with more than two-thirds of their total SO in set-aside are excluded from the survey results).
General cropping- Farms with over two-thirds of their total SO in arable crops (including field scale vegetables) or a mixture of arable and horticultural crops; and holdings where arable crops account for more than one-third of total SO and no other grouping accounts for more than one-third.

Horticulture- Holdings on which fruit (including vineyards), hardy nursery stock, glasshouse flowers and vegetables, market garden scale vegetables, outdoor bulbs and flowers, and mushrooms account for more than two thirds of their total SO
Specialist pigs- Farms on which pigs account for over two-thirds of their total SO.
Specialist poultry -Farms on which poultry account for over two-thirds of their total SO.
Mixed farms- Farms where crops account for one-third, but less than two-thirds of total SO and livestock accounts for one-third, but less than two-thirds of total SO. It also includes holdings with mixtures of cattle and sheep and pigs and poultry and holdings where one or other of these groups is dominant, but does not account for more than two-thirds of the total SO.

Farm business size in the United Kingdom is measured in Standard Labour Requirements (SLR) expressed in terms of full-time equivalents. Five size groups are defined for this report:

Part-time (greater than 0.5 and less than 1.0)
Small (greater than or equal to 1 less than 2)
Medium (greater than or equal to 2 less than 3)
Large (greater than or equal to 3 less than 5)
Very Large (greater than or equal to 5)

Farms are allocated to performance bands according to total farm output divided by total farm costs. The farms are then ranked and allocated to groups representing 25, 50 and 25 percentiles; equivalent to low, medium and high performance bands.

Weighting Procedure
All results in this report are weighted so as to provide estimates for the population. The weights are based on the ratio of numbers of businesses in the population (as given by the June Survey) and in the sample within each farm type and size group. These weights are then further refined by a calibration process using information from sources other than the Census (mostly administrative data). For more information on the FBS weighting procedure and other statistical issues, please see:
https://www.gov.uk/farm-business-survey-technical-notes-and-guidance

Definition of Terms

Utilised agricultural area is the crop area, including fodder, set-aside land, temporary and permanent grass and rough grazing in sole occupation (but not shared rough grazing) i.e. the agricultural area of the farm. It includes bare land and forage let out for less than one year.
Total area of farm is the utilised agricultural area plus woodland and other areas of the farm not used for agriculture (e.g. buildings, roads, water, and household gardens).
Total tillage comprises the utilised agricultural area, plus bare land and forage hired in from others in the accounting period, minus temporary and permanent grass and rough grazing in sole occupation (but not shared rough grazing).
Total area farmed comprises the total area of the farm minus woodlands and buildings, etc. plus net land hired in.
Adjusted utilised agricultural area comprises the utilised agricultural area with rough grazing in sole occupation converted to a permanent pasture equivalent.
Stocking figures are the average annual level of stocking based on estimated average livestock numbers on the farm for the year, including fractions for livestock on the farm for less than a year.
Total livestock units are used as an approximate measure of stocking intensity and are based on the estimated energy requirements of different species and ages of livestock. . A summary of the main livestock units is shown below

Dairy cows	1.00 LU	Beef Cows	0.75 LU	Heifers in calf	0.80 LU
Cattle over 2 years	0.80 LU	Cattle 1-2 years	0.65 LU	Cattle 0-12 months	0.34 LU
Bulls	0.75 LU	Lowland Ewes	0.10 LU	Upland Ewes	0.08 LU
Hill Ewes	0.06 LU	Store lambs	0.04 LU	Rams	0.08 LU

Annual labour units (ALU) are the estimated number of full time worker equivalents of persons working on the holding during the year. Part-time workers are converted to full-time equivalents in

proportion to their actual working time related to that of a full-time worker. One ALU represents one person employed for 2,200 hours.
Enterprise output is the main measure of individual crop and livestock output. It comprises:
(a) ***Cash crop enterprise output***, which is the total value of cash crops produced by the farm (other than losses in the field and in store) including *direct crop subsidies* due. It includes crops used for feed and seed by the farm business and those consumed in the farmhouse and by farm labour. Crop enterprise output is calculated on a "harvest year" as distinct from an "accounting year" basis; that is, it refers only to those crops (with the exception of certain horticultural crops) wholly or partly harvested during the accounting year and excludes any crop carried over from the previous year. Thus valuation changes (between the previous and current crops) are not relevant and the total harvested yield of the crop is valued at market prices (plus any subsidies). However, any difference between the opening valuation of any stocks of previous crops and their ultimate disposal value (sales, used on farm and any end-year stocks) is included in total farm output and net farm income.
(b) ***By-products, forage and cultivations***, which cover the value of output of the by-products of agricultural activity, sales of fodder, valuation changes for fodder and cultivations. It also covers revenue from the letting of bare land or forage on a short-term lease.
(c) ***Livestock enterprise output*** comprises the total sales of livestock and livestock products, part of the valuation change (see below), produce consumed in the farmhouse and by labour and the value of milk and milk products fed on the farm (excluding direct suckling) adjusted for debtors at the beginning and end of the year and transfers between enterprises; less purchases of livestock and livestock products from outside the farm business. Stock appreciation for breeding livestock (cattle, sheep and pigs) has been excluded from individual livestock enterprise outputs. However, changes in the numbers of breeding livestock between the opening and closing valuation and the total valuation change of trading livestock are included. Unlike crop enterprise output, livestock enterprise output is calculated on an accounting year basis.
(d).***Rental Income*** comprises the renting-out of farm cottages and other buildings, where these are inseparable from the main farm account
(e) ***Contract work*** includes returns from the use of farm resources for hire work
(f) ***Miscellaneous output includes*** returns from recreational activities, added value activities, the private share of the rental of the farmhouse and the value of any farm labour or other inputs used for producing capital assets for the farm.
Total farm output is the sum of crop and livestock enterprise output, income from the agri-environment schemes, Basic payment scheme and miscellaneous output, and the adjustment for previous years' crops. It excludes breeding livestock stock appreciation.

Inputs comprise payments and the estimated value of non-cash inputs, including home-grown feed and seed, adjusted for changes in stocks and creditors between the beginning and end of the year. The appropriate share of any input not used entirely by the farm business is deducted.
Total variable costs
These are taken to be costs of feed, veterinary fees and medicines, other livestock costs, seeds, fertilisers, crop protection and other crop costs.
Concentrate feed includes (a) bought compounds and grains, sugar beet pulp, proteins, milk powder, animal and plant proteins, additives, minerals and vitamins; and (b) home produced cereals, beans, peas, milk and milk products, valued at the average ex-farm price.
Purchased Fodder includes purchased bulk feeds such as potatoes, vegetable residues, wet brewers' grains, hay and feed straw, and agistment. It does not include forage produced on the holding. Payments for grass keep and bare land are shown with land charges.
Veterinary fees and medicines consist of veterinary fees and the cost of all medicines.
Other livestock costs includes all expenditure relating directly to livestock production such as freeze branding, AI fees, milk tests, breed society fees, dairy and other detergents, packing materials, bedding straw, show expenses, processing and marketing charges, disposal of casualties, etc.and other livestock costs not separately identified.
Seeds This 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 homegrown seed used in the production of the current crop to be identified.
Fertilizers This includes lime, fertilisers and other manures, and is adjusted for changes in stock. Fertilisers sown for next year's crops are treated as if they were still in store and are included in the closing valuation.

Crop protection This includes costs of pre-emergent sprays, fungicides, herbicides, dusts and insecticides and other crop sprays.
Other crop costs includes all expenditure relating directly to crop production such as packing materials, baler cord, soil analyses, crop competition costs, polythene (for tunnels), all storage and market preparation costs, purchase of standing crops, marketing charges, soil sterilisation, etc. It also includes the cost of renting bare land (for growing cash crops) for less than one year.

Total fixed costs
These are the costs of labour, machinery, contract work, land and buildings, other general farming costs and depreciation.
Labour (excluding farmer and spouse) costs include all work in connection with the normal running of the holding including field work, livestock husbandry, market preparation, maintenance, transport and other related operations. They exclude work to produce fixed assets (construction or repairs of buildings and machinery, etc.), domestic work and business travel/professional meetings, etc.
'Unpaid' labour is valued at the appropriate rate for the work actually done. The value of the manual labour of the farmer and spouse is not charged as an input in calculating net farm income
Contract costs These costs include expenditure on work carried out by agricultural contractors, including the costs of materials employed, such as fertilisers, unless these can be allocated to the specific heading. Costs of hiring machines to be used by the farm's own labour are also included. Expenditure on contract labour is only included here if it is associated with the hiring of a machine. Otherwise it is entered under (casual) labour.
Machinery costs relate to all machinery and equipment items, which originally cost more than £500, including the farm *share* of road vehicles. Depreciation is calculated on a replacement cost basis (broadly equivalent to 15% of current replacement costs). Repairs are recorded net of insurance receipts.
Land expenses include tenant-type repairs and land upkeep costs as Property repairs, the actual rents paid by tenant farmers and drainage rates where incurred. Payments for grass keep and bare land are also included. For land and buildings owned a 'rental value' is included based on similar payments made by tenants in similar circumstances.
General overheads include the farm share of electricity, heating fuel, water, insurance (including labour and buildings insurance) and professional fees. Bank charges secretarial costs, consultancy fees and other sundry costs (such as subscriptions, telephone, postage, stationery, etc.) are included in Other general costs.

Net Farm Income (NFI) is intended as a consistent measure of the profitability of tenant-type farming which allows farms of different business organisation, tenure and indebtedness to be compared. It represents the return to the farmer and spouse alone for their manual and managerial labour and on the tenant-type capital invested in the farm business.
To represent the return to farmer and spouse alone, a notional deduction is made for any unpaid labour provided by non-principal partners and directors, their spouses and by others; this unpaid labour is valued at average local market rates for manual agricultural work.
To confine the measure to the tenant-type activities and assets of the business, an imputed rent is deducted for owner-occupied land and buildings and for landlord-type improvements made by the tenant. No deduction is made for interest payments on any farming loans, overdrafts or mortgages; interest earned on financial assets is also excluded.
Because of these two restrictions, NFI is not a proxy for farm business income; other measures, such as Net Profit and Family Farm Income should be used instead. Nor is it a proxy for farm household income both because NFI does not accurately represent the farmer and spouse share of the business and because it takes no account of any income from off-farm sources.

Breeding livestock stock appreciation represents the change in market prices of breeding cattle, sheep and pigs between the opening and closing valuations.

Farm business income (FBI) for sole traders and partnerships represents the financial return to all unpaid labour (farmers and spouses, non-principal partners and directors and their spouses and family workers) and on all their capital invested in the farm business, including land and buildings. It is defined as Total Farm Output (TFO) plus profit / loss on sale of assets minus cost (C): where TFO is defined as the sum of output from: crop enterprises, adjustment for disposal of previous crops, livestock enterprises, separable non-agricultural diversification, Basic farm payment, agri-environmental payments, other grants and subsidies, miscellaneous receipts; C is defined as variable

costs plus fixed costs. Note that prior to 2008/09 directors remuneration was not deducted in the calculation of farm business income. For corporate businesses it represents the financial return on the shareholders capital invested in the farm business. It is used when assessing the impact of new policies or regulations on the individual farm business. Although Farm Business Income is equivalent to financial Net Profit, in practice they are likely to differ because Net Profit is derived from financial accounting principles whereas Farm Business Income is derived from management accounting principles. For example in financial accounting output stocks are usually valued at cost of production, whereas in management accounting they are usually valued at market price. In financial accounting depreciation is usually calculated at historic cost whereas in management accounting it is often calculated at replacement cost.

Farm corporate income represents the return on own capital invested in the farm business, to risk and to entrepreneurship. It is derived by deducting unpaid labour, both manual and managerial, from Farm Business Profit. This allows the profitability of sole traders and partnerships to be compared directly with that of companies. Currently we are able to deduct an estimate of unpaid manual labour but not of unpaid managerial labour and so the data are only approximate. However, we plan to undertake a research project to produce a method for deriving an estimate of unpaid managerial labour, so that we can produce better data for this measure in future.

Farm investment income represents the return on ***all*** capital invested in the farm business ***whether borrowed or not***, to risk and to entrepreneurship. It is a general measure of the profitability of farming as an activity rather than of a particular business.
It is derived by adding net interest payments to Farm Corporate Income. Since currently the data for Farm Corporate income are only approximate, so too are the data for Farm Investment Income.

Balance Sheet Tables
Total fixed assets include milk and livestock quotas, as well as land, buildings, breeding livestock, and machinery and equipment. For tenanted farmers, assets can include farm buildings, cottages, quotas, etc., where these are owned by the occupier.
Bank term loans and ***other long and medium term loans*** are loans which exceed 12 months.
Net Worth 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.

Appendix 2 Reports in this series:

Reports in this series:

Crop Production in England

Dairy Farming in England

Hill Farming in England

Horticulture Production in England

Lowland Grazing Livestock Production in England

Organic Farming in England

Pig Production in England

Poultry Production in England

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