



## Farm Business Survey

2015/16

# Lowland Grazing Livestock Production in England



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**RBR**

*independent research, data and analysis*

Rural Business Research



## **Acknowledgements**

Rural Business Research thanks sincerely all the farmers who have voluntarily provided records and information on which the annual Farm Business Survey, and this report, is based.

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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](http://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 Eleventh Series

With this eleventh series of reports on the economics of agriculture and horticulture in England from *Rural Business Research (RBR)*, our focus of providing independent data and analysis to the individual sectors has arguably never been of such importance. The collective decision of the UK voting public on the 23 June 2016 to leave the EU will have large impacts on agricultural and horticultural sectors. Issues of policy, trade, exchange rates and labour availability are now very much front and centre in the minds of many businesses. Ensuring that the enterprises that constitute the farm business are profitable is of even greater importance given the uncertainty which now exists in the industry. Brexit will also bring opportunities, and those seeking to make the most of the opportunities that will arise will need independent data to support effective decision making. In this eleventh series, RBR seeks to provide these independent data in a revised and succinct format which places the data results at the heart of each report; we have focused our succinct comments on key results within the tables to draw to the attention of readers the central highlights. Our increasing focus on the presentation of data and results flows from internal and external feedback.

Setting the context to this series, data from the Farm Business Survey (FBS) for the 2015/16 financial year, shows that average Farm Business Income (FBI) decreased by 21% to £31,400 per farm. Examining results by farm type, on average, only General Cropping, Less Favoured Areas (LFA) Grazing Livestock and Horticulture recorded increases in FBI; by contrast Dairy and Specialist Pig farms recorded FBI decreases of around 50% on 2014/15 levels. Average FBI was at its lowest point for a number of years in 2015/16. The immediate impact of Brexit on exchange rates has however led to recent increases in commodity prices, and the overall outlook for 2016/17 is consequently more positive, though farm type variation remains and not all sectors are likely to witness improvements for 2016/17. Moving forward however, businesses will need to understand the impact of the exchange rate movement on the costs incurred, and a greater focus on budgeting and cost management will be the order of the day in order to capitalise on the exchange rate benefit. Cost comparison from the independent data produced within these reports provides valuable information in relation to costs and returns across each sector to aid managers in this respect.

With respect to the policy environment for agriculture and horticulture moving forward, the rigorous and independent FBS data presented in these reports will be of crucial importance for evidenced-based policy making. Our research work within the FBS programme could 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 are given to them all.

### **Professor Paul Wilson**

Chief Executive Officer, Rural Business Research  
March 2017

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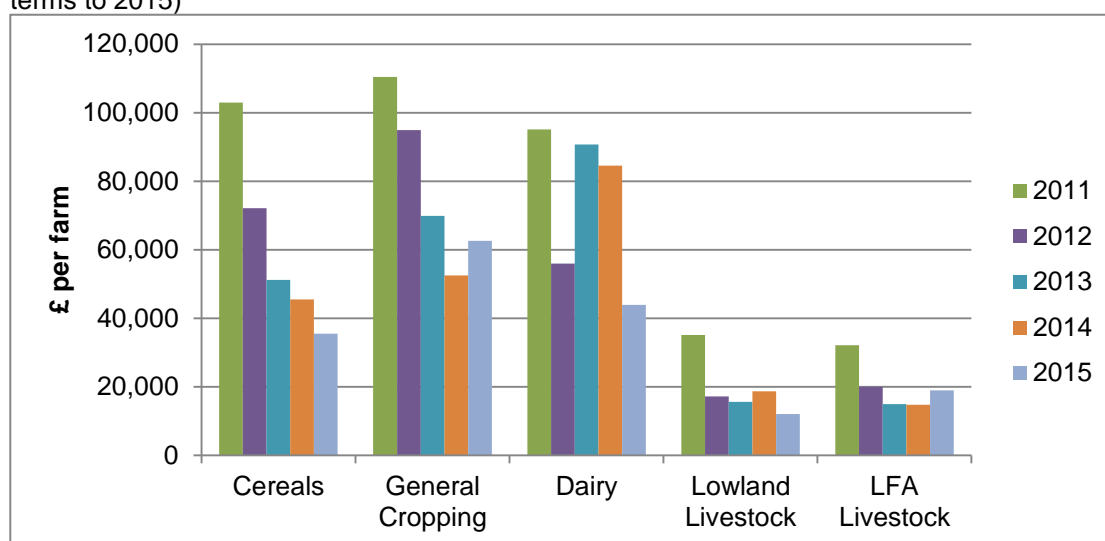
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## Key Findings of Lowland Grazing Livestock Production in England 2015/16

- 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 quarter of the Dairy farms in 2015/16 but as compared to the LFA Grazing Livestock farms incomes were broadly similar.

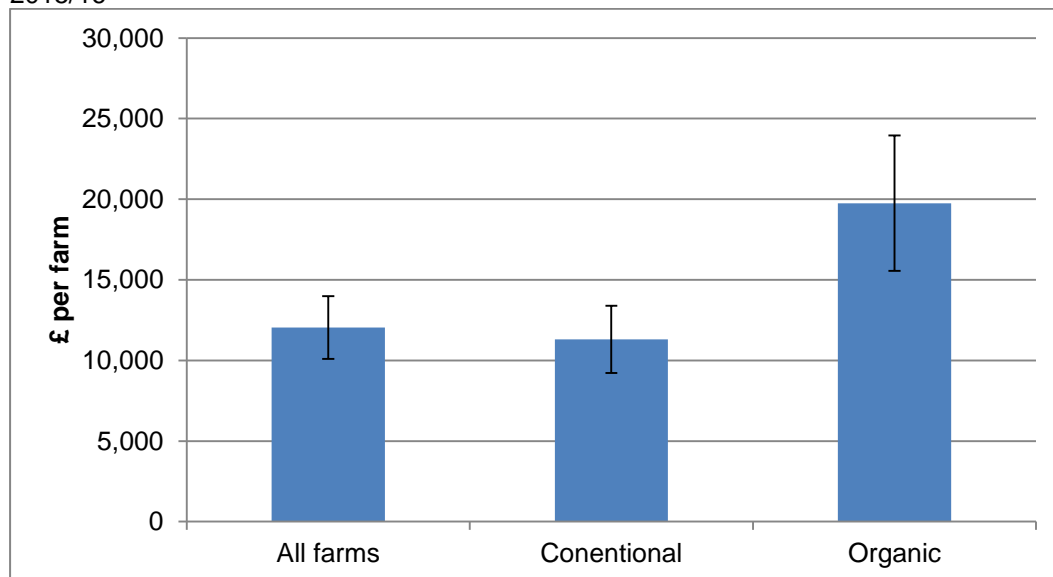
Trends in Farm Business Income £ per farm, in England, for selected farm types (in real terms to 2015)



- The average Farm Business Income (which closely resembles farm profit) for 2015/16 for the Lowland Grazing Livestock farms in England was £12,049 per farm, a decrease of £6,422 compared to the previous year, only 58% of the average of the previous five years and the lowest within the last 12 years in real terms.
- There is a wide range in the level of Farm Business Income per farm within the Lowland Grazing Livestock producers. In 2015/16, nearly a quarter had a negative income and 84% had an income of less than £30,000.
- 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, £292 per hectare compared to a loss of £201 per hectare.
- For the average Lowland Grazing Livestock farm in 2015/16 the value of unpaid labour used by the business (£27,062) and the level of private drawings (£21,369). Thus, these businesses are 'paying' themselves at 79% the appropriate market rate for their labour. For this year the Farm Business Income is £15,000 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 is higher on a per farm 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. 2015/16



- 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 2015/16 would be making a Farm Business Income loss of £2,502.
- From the gross margin analysis the premium (top third) producers, as ranked by gross margin per head, have gross margins more than two thirds higher for both the lowland beef cows and rearing cattle. For lowland breeding ewes the top third producers are more than a third 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 lower than the previous year.



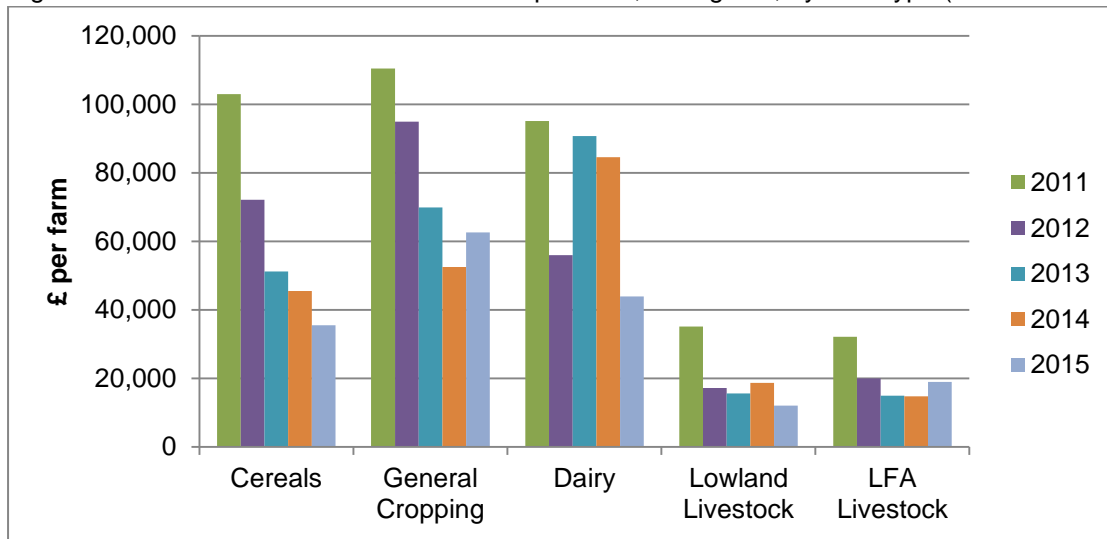
## Lowland Grazing Livestock Production in England 2015/16

- Approaching a quarter of those farm businesses in England that are eligible for the Farm Business Survey are classified as Lowland Grazing Livestock<sup>1</sup>. Almost 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 (14%) 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 seven years the Farm Business Income for Lowland Grazing Livestock businesses has been variable. The Farm Business Income for 2015 was just over half of the average for the last five years and the lowest for seven 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 4% in 2016 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 there has been more stability in the last three years.

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<sup>1</sup> 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 (in real terms to 2015)



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

Figure 2 Farm Business Income per hectare and per Annual Labour Unit, in England 2015/16, by Farm Type

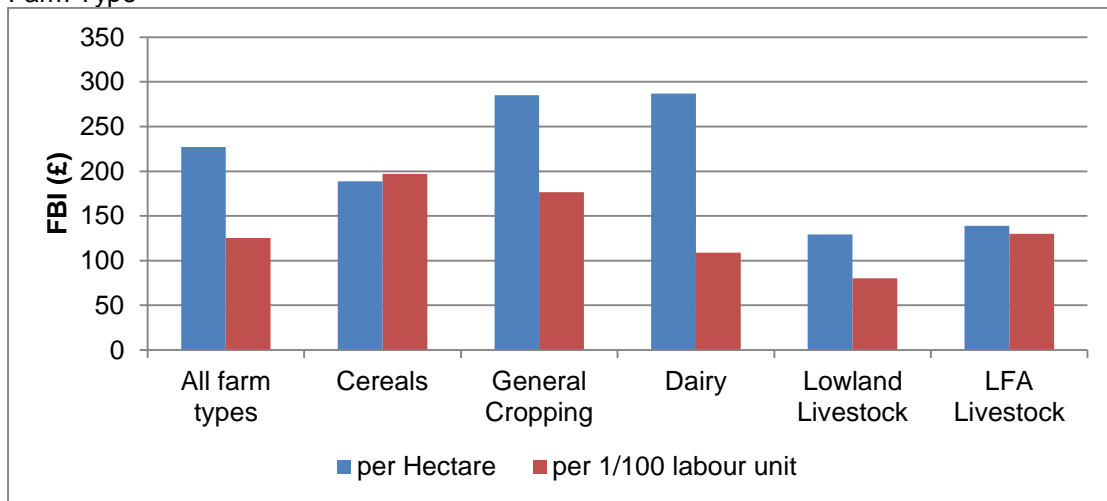


Figure 3 Lowland Grazing Livestock farms in England - Average Farm Business Income by Cost Centre 2009-2015

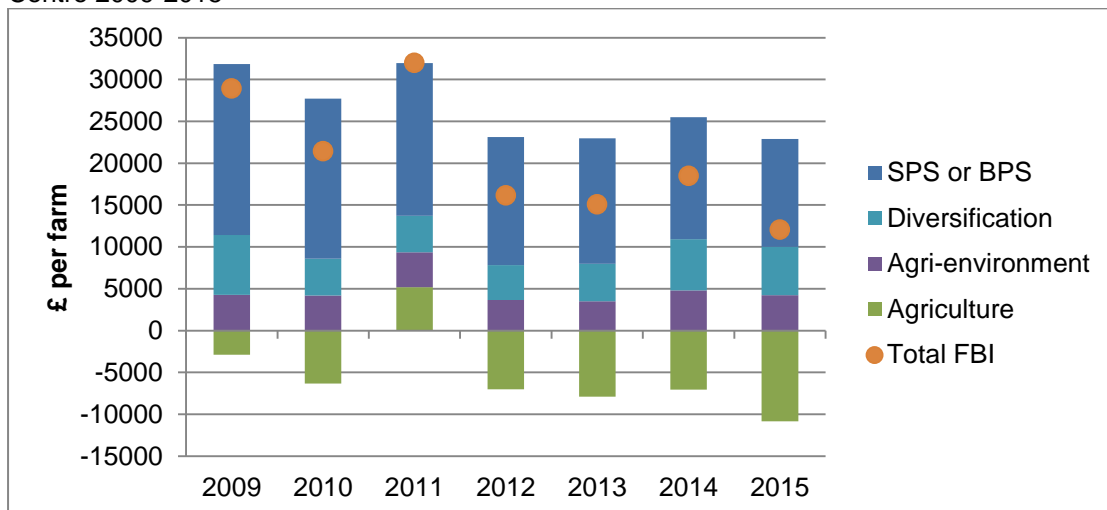
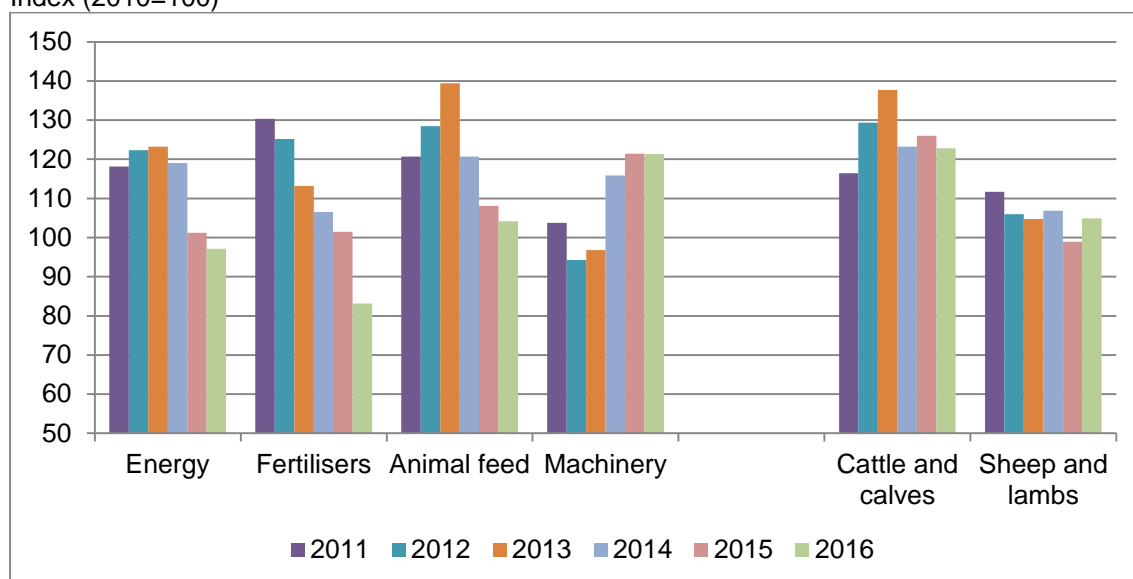


Figure 4 Indices of Producer and input Prices of Agricultural Products (United Kingdom) Index (2010=100)



Source: Defra

### Lowland Grazing Livestock Production in 2015/16- detailed results

- This report uses data extracted from the Farm Business Survey (FBS) for this important group of farms and includes data from 285 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 2015/16 show a decrease in Farm Business Income per average farm from 2014/15 to £12,049, a fall of £6,422. The Net Farm Income was £838 per farm, again a similar reduction on the previous year's figure. (Table 1).
- The average Lowland Grazing Livestock farm was 64% owner occupied and the average area farmed was 93.2 hectares. Permanent grassland and rough grazing covers three quarters of the area with temporary grassland and fodder crops another 14%. The stocking rate is low, emphasising the 'extensive' type of production adopted by this farm type, with only 1.0 Grazing Livestock Units per hectare. Cattle account for 70% of these livestock units (Table 2).
- The balance sheet for the average farm shows over £92,000 of liabilities with the majority of borrowing held by the banks, as loans or overdraft. Total assets for the business of £1,336,000 are dominated by the land and buildings which account for 84% 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 £29,000 after depreciation on buildings and machinery is added back to Farm Business Income and the increase in live and deadstock valuations is deducted. Nearly £16,000 was spent on capital purchases. Purchase of land and property averaged nearly £3,500, with machinery investment accounting for over £9,000. The machinery pool on these farms was thus maintained with re-investment being close to the level of machinery depreciation charged to these businesses. This left a farm fund flow surplus of nearly £13,000. The private drawings

from the farm were £21,400 and this year there was over £11,000 of net transfer in of funds, and so there was a £2,751 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, 24% of farms had a negative Farm Business Income in 2015/16, with close to three quarters of farms making less than £20,000. Eight 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.<sup>2</sup> 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 85% 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 just over half the area they farm whereas the low and medium performing group own nearer three quarters of the farmed area.
- The organic farms are broadly similar in size to their conventional counterparts as is the percentage of the land they own. 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 more than 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 higher 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 higher than that of their conventional counterparts (Table 6).
- Farm size can be described in terms of Standard Labour Requirement<sup>3</sup>. The average size of the Part-time farms is close to 55 hectares (136 acres), compared to the Very Large farms, which are close to seven 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 and then increases on Medium and Large farms, with the Very Large farms renting three quarters 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 less than three quarters of the level achieved by the other businesses; Farm Business Income per hectare shows no trend as size increasing with Small farms and the Very Large farms having the lowest Farm Business Income per hectare and Part-time farms and Large Farms the highest, as illustrated in Figure 6.

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<sup>2</sup> 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.

<sup>3</sup> Full details of the definitions relating to farm size are given in Appendix 1.

Table 1: Income details, 2015/16 for All Farms, and by Performance Band

<b>Financial details, 2015/16</b>				
	Average all farms	Performance Band		
		Low	Medium	High
Number of farms	285	49	133	103
Average farmed area (hectares)	93.2	64.0	82.1	143.5
Average % of owned total farmed area	64%	75%	70%	53%
	£ per farm			
<b>Output</b>				
Cattle	35,885	24,164	31,664	55,611
Sheep	16,821	4,807	16,256	29,628
Other livestock	536	172	756	455
Crops	4,315	2,085	3,861	7,382
Forage	4,061	3,015	4,711	3,798
Environmental schemes	4,980	1,938	4,663	8,568
Basic Payment Scheme	14,551	10,196	13,054	21,738
Rental income	4,175	2,198	2,504	9,392
Contract work	388	13	209	1,107
Miscellaneous output	10,544	5,893	8,866	18,379
<b>Total Farm Output</b>	<b>96,256</b>	<b>54,479</b>	<b>86,543</b>	<b>156,058</b>
<b>Variable costs</b>				
Concentrates	10,211	7,252	9,758	13,984
Purchased fodder	1,254	409	890	2,794
Veterinary and medicines	2,754	1,936	2,739	3,581
Other livestock costs	7,112	5,526	6,740	9,389
Seeds	1,005	669	971	1,397
Fertilisers	4,188	3,343	4,017	5,347
Crop protection	939	570	912	1,350
Other crop costs	980	1,032	885	1,116
<b>Total Variable Costs</b>	<b>28,442</b>	<b>20,737</b>	<b>26,911</b>	<b>38,958</b>
<b>Gross Margin</b>	<b>67,814</b>	<b>33,743</b>	<b>59,632</b>	<b>117,099</b>
<b>Fixed costs</b>				
Paid labour	5,557	3,116	5,005	9,020
Contract	5,600	5,212	4,726	7,702
Machinery repairs	4,327	4,229	3,780	5,503
Machinery fuel	3,567	2,608	3,477	4,678
Machinery depreciation	10,026	8,971	8,828	13,415
General costs	11,563	10,286	11,107	13,706
Property maintenance	4,133	3,287	4,009	5,201
Rent, hired in keep and bare land	4,893	3,160	4,155	8,032
Buildings depreciation	3,081	2,414	2,741	4,402
Interest	3,018	3,296	2,644	3,484
<b>Total Fixed Costs</b>	<b>55,765</b>	<b>46,578</b>	<b>50,470</b>	<b>75,145</b>
<b>FARM BUSINESS INCOME</b>	<b>12,049</b>	<b>-12,835</b>	<b>9,162</b>	<b>41,955</b>
All unpaid labour	27,062	29,223	27,359	24,376

<b>Alternative Income Measures, 2015/2016</b>					
		<b>Performance Band</b>			
		Average all farms	<b>Low</b>	<b>Medium</b>	<b>High</b>
Reconciliation between Net Farm Income and Farm Business Profit					
	<b>FARM BUSINESS INCOME</b>	12,049	-12,835	9,162	41,955
Plus-	Directors remuneration	255	156	430	7
Less-	Net income from assets associated with the farm business	0	0	0	0
Plus-	Buildings and works depreciation	3,081	2,414	2,741	4,402
Plus-	Landlord type expenses	396	271	422	464
Plus-	Imputed rental income	290	208	321	309
Less-	Imputed rent and rental value	13,436	10,703	12,617	17,709
Plus-	Net Interest	2,998	3,294	2,628	3,439
Less-	Unpaid labour of partners	4,795	5,946	4,733	3,799
Equals	<b>NET FARM INCOME**</b>	838	-23,140	-1,646	29,069
** Excluding Breeding Livestock Stock Appreciation					

Table 2 Land Use, 2015/16 for All Farms, and by Performance Band

<b>Land Use and Indicators of Technical Efficiency, 2015/2016</b>				
	Average all farms	Performance Band		
		Low	Medium	High
Number of farms in group	285	49	133	103
Average farmed area (hectares)	93.2	64.0	82.1	143.5
Average proportion of owned total farmed area (%)	64%	75%	70%	53%
<b>Land use</b>				
Area of crops	5.1	2.6	4.6	8.7
Temporary grass	11.8	9.7	11.9	13.7
Permanent grass	65.2	47.7	57.7	97.1
Fodder crops	1.4	1.0	1.5	1.7
Rough grazing	4.8	0.3	1.9	15.0
Uncropped, fallow and turf	1.0	0.4	1.2	1.2
Forage hired in	3.7	2.3	3.3	5.9
<b>Stocking</b>				
Average number of dairy cows	1	0	1	0
Average number of beef cows	22	17	23	26
Average number of other cattle	82	71	69	118
Average number of ewes	161	62	154	271
Average number of other sheep	176	63	174	289
<b>Grazing livestock units</b>				
	GLUs per farm			
Dairy cows	0.6	0.4	0.8	0.1
Beef cows	11.0	8.6	11.3	12.9
Other cattle	50.0	43.3	41.8	72.9
Sheep	25.7	9.8	24.7	43.1
Other livestock	1.3	0.8	1.8	0.8
Total	88.6	62.9	80.5	129.8
GLUs per ha	1.02	1.03	1.06	0.97
GLUs per adjusted ha	1.03	1.03	1.07	0.98

Table 3 Balance Sheet details, 2015-26 for All Farms, and by Performance Band

<b>Balance Sheet, 2015/2016</b>				
(end of year)		<b>Performance Band</b>		
	Average all farms	Low	Medium	High
Number of farms in group	285	49	133	103
Average farmed area (hectares)	93.2	64.0	82.1	143.5
Average proportion of owned total farmed area	64%	75%	70%	53%
	£ per farm			
End of year assets & liabilities				
Land & buildings	1,126,193	927,725	1,107,466	1,356,239
Basic Payment Scheme	14,817	11,226	13,165	21,567
Machinery	58,926	54,293	51,887	77,309
Tenant's other assets	250	69	267	391
Breeding livestock	41,170	27,566	41,170	54,411
<b>Total fixed assets</b>	<b>1,241,355</b>	<b>1,020,880</b>	<b>1,213,954</b>	<b>1,509,917</b>
Trading livestock	47,101	39,474	41,171	66,214
Crops	1,334	642	876	2,911
Forage and cultivations	5,821	4,705	5,495	7,550
Stores	4,714	4,156	4,353	5,967
Debtors and loans	11,559	11,718	7,628	19,154
Bank credit and cash	24,261	13,851	18,293	46,159
Other current assets	0	0	0	0
<b>Total current assets</b>	<b>94,791</b>	<b>74,546</b>	<b>77,817</b>	<b>147,955</b>
<b>Total assets</b>	<b>1,336,146</b>	<b>1,095,426</b>	<b>1,291,771</b>	<b>1,657,873</b>
Financed by				
AMC	16,875	3,690	21,365	20,852
Bank loans	35,433	46,355	24,388	46,581
Other long term	7,028	1,440	4,931	16,600
<b>Total long term</b>	<b>59,336</b>	<b>51,485</b>	<b>50,684</b>	<b>84,033</b>
HP and lease	5,708	5,118	6,103	5,505
Creditors	7,889	7,698	6,343	11,123
Bank overdraft	19,149	21,227	18,354	18,695
Other short term	102	48	120	121
<b>Total current liabilities</b>	<b>32,849</b>	<b>34,091</b>	<b>30,920</b>	<b>35,443</b>
<b>Total Liabilities</b>	<b>92,185</b>	<b>85,576</b>	<b>81,604</b>	<b>119,477</b>
<b>Net worth</b>	<b>1,243,961</b>	<b>1,009,849</b>	<b>1,210,167</b>	<b>1,538,396</b>
Balance sheet ratios				
% Owner equity (net worth v. total assets)	93%	92%	94%	93%
% Fixed assets vs. total assets	93%	93%	94%	91%
Gearing (long-term loans v. total assets)	4%	5%	4%	5%
Total debt (external liabilities v. net worth)	7%	8%	7%	8%



Table 4 Fund flow, 2015/16 for All Farms, and by Performance Band

<b>FUND FLOWS, 2015/2016</b>				
	Average all farms	Performance Band		
		Low	Medium	High
Number of farms in group	285	49	133	103
Average farmed area (hectares)	93.2	64.0	82.1	143.5
Average proportion of owned total farmed area (%)	64%	75%	70%	53%
	£ per farm			
<b>Funds available from trading</b>				
Farm Business Income	12,049	-12,835	9,162	41,955
Buildings and works depreciation	3,081	2,414	2,741	4,402
Machinery depreciation	10,026	8,971	8,828	13,415
Change in valuation *	3,476	2,881	4,968	1,112
Trading net fund flow surplus	28,632	1,430	25,699	60,884
<b>Funds used for farm investments</b>				
Net property	3,471	36	3,222	7,303
Net landlord capital purchases	3,457	2,337	3,161	5,130
Net machinery and equipment purchases	9,055	6,700	8,558	12,326
<b>Capital net fund flow</b>	15,983	9,073	14,942	24,759
<b>Total farm fund flow surplus</b>	12,649	-7,642	10,757	36,124
<b>Funds used for private expenditure</b>				
Private drawings	21,369	14,897	19,492	31,368
Net private funds introduced	11,471	16,286	10,685	8,335
<b>Private fund outflow</b>	9,898	-1,390	8,806	23,034
<b>Total net fund flow surplus</b>	<b>2,751</b>	<b>-6,253</b>	<b>1,951</b>	<b>13,091</b>
Increase in loans and deposits	-1,917	-2,107	496	-6,488
Increase in bank balance	-1,853	-11,016	941	1,555
Increase in cash in hand	17	15	0	54
Increase in debtors	2,775	4,443	1,051	4,550
Increase in creditors	104	1,802	-456	-444
<b>Net change in funding</b>	<b>-2,751</b>	<b>6,253</b>	<b>-1,951</b>	<b>-13,091</b>
* 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

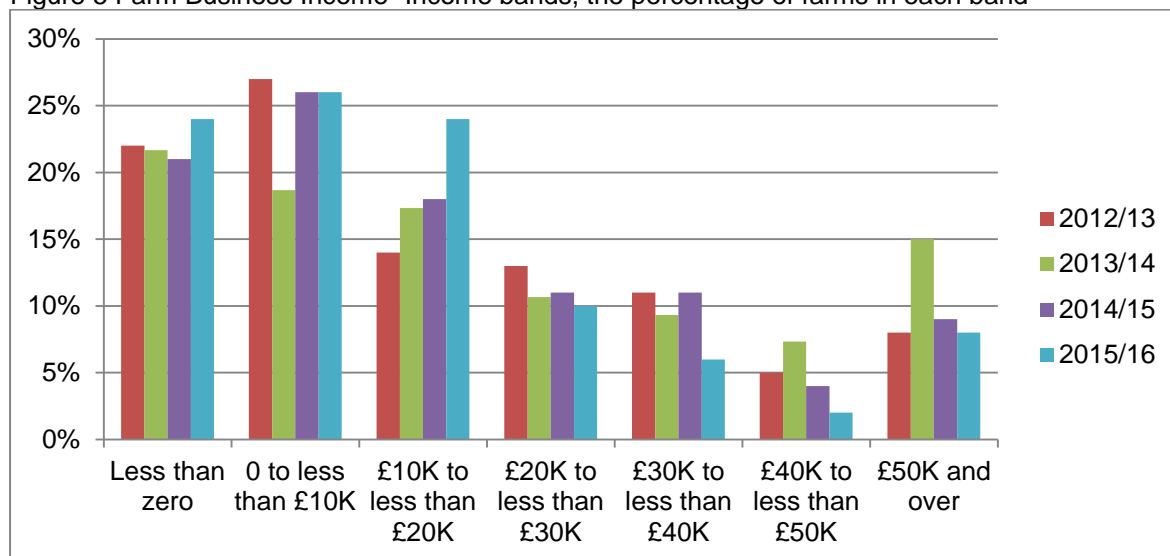


Table 5 Farm Business Income by Performance Band, 2015/16, £ per hectare

Performance Band	Low	Medium	High
Average farmed area (hectares)	64.0	82.1	143.5
Average % of owned total farmed area	75%	70%	53%
	£ per hectare		
Livestock and crops	535	697	675
Agri- environment type schemes	30	57	60
Basic Payment Scheme	159	159	151
Other	127	141	201
<b>TOTAL FARM OUTPUT</b>	<b>851</b>	<b>1054</b>	<b>1087</b>
Variable costs			
Livestock specific costs	236	245	207
Crop specific costs	88	83	64
<b>TOTAL VARIABLE COSTS</b>	<b>324</b>	<b>328</b>	<b>271</b>
<b>TOTAL GROSS MARGIN</b>	<b>527</b>	<b>726</b>	<b>816</b>
Fixed costs			
Labour	49	61	63
Machinery	328	253	218
General farming costs	161	135	96
Land & Property	138	133	123
Interest paid	52	32	24
<b>TOTAL FIXED COSTS</b>	<b>728</b>	<b>614</b>	<b>524</b>
<b>FARM BUSINESS INCOME</b>	<b>-201</b>	<b>112</b>	<b>292</b>

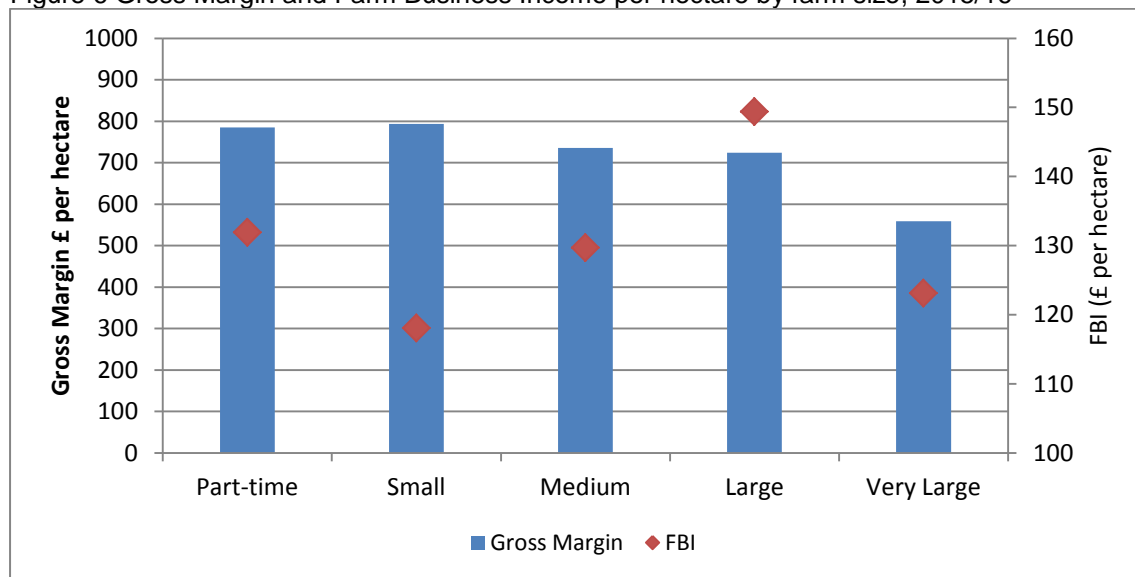
Table 6 Farm Business Income for Conventional and Organic farms, 2015/16

Type of Production	Conventional	Organic
Number of farms	241	44
Average farmed area (hectares)	93.6	89.2
Average % of owned total farmed area	63%	72%
	£ per farm	
<b>Output</b>		
Cattle	36,459	29,938
Sheep	17,710	7,630
Other livestock	534	549
Crops	4,297	4,501
Forage	4,097	3,685
Environmental schemes	4,531	9,630
Basic Payment Scheme	14,505	15,020
Rental income	4,245	3,445
Contract work	425	5
Miscellaneous output	10,229	13,803
<b>Total Farm Output</b>	<b>97,034</b>	<b>88,207</b>
<b>Variable costs</b>		
Concentrates	10,855	3,544
Purchased fodder	1,292	859
Veterinary and medicines	2,850	1,767
Other livestock costs	7,304	5,120
Seeds	970	1,367
Fertilisers	4,524	705
Crop protection	998	323
Other crop costs	1,001	763
<b>Total Variable Costs</b>	<b>29,795</b>	<b>14,448</b>
<b>Gross Margin</b>	<b>67,239</b>	<b>73,759</b>
<b>Fixed costs</b>		
Paid labour	5,596	5,152
Contract	5,700	4,569
Machinery repairs	4,320	4,406
Machinery fuel	3,629	2,926
Machinery depreciation	9,935	10,974
General costs	11,573	11,463
Property maintenance	4,127	4,199
Rent, hired in keep and bare land	4,986	3,930
Buildings depreciation	3,051	3,401
Interest	3,021	2,986
<b>Total Fixed Costs</b>	<b>55,935</b>	<b>54,006</b>
<b>FARM BUSINESS INCOME</b>	<b>11,304</b>	<b>19,753</b>
All unpaid labour	27,197	25,669

Table 7: Income details, 2015/16 for All Farms, and by size of business

<b>Farm Size by Standard Labour Requirement</b>	<b>Part-time</b>	<b>Small</b>	<b>Medium</b>	<b>Large</b>	<b>Very Large</b>
Number of farms	42	84	69	52	38
Average farmed area (hectares)	55.1	78.0	103.1	161.1	382.5
Average % of owned total farmed area	84%	82%	58%	57%	25%
	£ per farm				
<b>Output</b>					
Cattle	22,977	34,071	39,649	60,336	107,844
Sheep	3,293	9,338	25,619	49,109	100,302
Other livestock	691	66	493	72	3,208
Crops	1,193	2,382	5,674	10,995	28,548
Forage	3,387	5,443	3,116	3,784	4,841
Environmental schemes	3,018	5,109	3,516	9,078	18,771
Basic Payment Scheme	9,920	13,076	14,625	24,659	46,961
Rental income	3,293	3,402	3,761	7,988	11,046
Contract work	133	360	1,380	348	0
Miscellaneous output	8,309	14,535	11,185	8,015	8,621
<b>Total Farm Output</b>	<b>56,214</b>	<b>87,782</b>	<b>109,018</b>	<b>174,385</b>	<b>330,141</b>
<b>Variable costs</b>					
Concentrates	4,340	9,169	10,802	23,708	42,999
Purchased fodder	126	1,174	1,856	2,685	7,617
Veterinary and medicines	1,296	2,173	3,752	5,149	12,318
Other livestock costs	3,749	6,907	8,248	12,312	26,003
Seeds	392	1,056	1,101	1,835	4,447
Fertilisers	1,876	3,952	5,211	8,421	15,719
Crop protection	377	624	1,095	2,318	5,000
Other crop costs	799	875	1,108	1,347	2,225
<b>Total Variable Costs</b>	<b>12,954</b>	<b>25,930</b>	<b>33,174</b>	<b>57,775</b>	<b>116,328</b>
<b>Gross Margin</b>	<b>43,260</b>	<b>61,853</b>	<b>75,844</b>	<b>116,609</b>	<b>213,812</b>
<b>Fixed costs</b>					
Paid labour	2,074	5,529	5,543	11,609	26,223
Contract	4,162	5,499	5,009	8,233	16,244
Machinery repairs	3,225	3,731	5,113	6,752	11,243
Machinery fuel	2,386	3,081	4,548	6,201	9,478
Machinery depreciation	7,119	8,682	11,928	17,185	25,766
General costs	8,801	11,871	12,487	16,219	23,225
Property maintenance	2,945	4,096	4,067	6,715	10,505
Rent, hired in keep and bare land	1,960	3,460	6,045	10,842	26,192
Buildings depreciation	2,060	2,845	3,729	4,921	8,499
Interest	1,261	3,851	4,003	3,858	9,342
<b>Total Fixed Costs</b>	<b>35,993</b>	<b>52,646</b>	<b>62,472</b>	<b>92,535</b>	<b>166,717</b>
<b>FARM BUSINESS INCOME</b>	<b>7,267</b>	<b>9,207</b>	<b>13,372</b>	<b>24,075</b>	<b>47,095</b>
All unpaid labour	23,711	26,516	30,975	36,344	31,295

Figure 6 Gross Margin and Farm Business Income per hectare by farm size, 2015/16



### 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 BPS per farm for all farms and represents 15% of the Total Output for Lowland Livestock Grazing farms. Without the Basic Payment Scheme, the average Lowland Livestock Grazing farm would be making a Farm Business Income of £-2,502. The Very Large farms would be breaking even and all other sizes would be making losses up to nearly £4,000.
- 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 very bleak

Table 8 Farm Business Income and Basic Payment Scheme, 2015/16

	All Farms	Part-time	Small	Medium	Large	Very Large
	£ per farm					
Farm Business Income	12,049	7,267	9,207	13,372	24,075	47,095
Basic Payment Scheme Income	14,551	9,920	13,076	14,625	24,659	46,961
Farm Business Income less BPS	-2,502	-2,653	-3,869	-1,253	-584	134
Private drawings	21,369	16,184	20,774	21,743	37,291	40,566

### Farm Business Income by 'Cost Centre'<sup>4</sup>

- The majority of the Farm Business Income comes from the Basic Payment Scheme 'cost centre' - 107% 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. (Table 9).
- The loss from the Agriculture cost centre is the largest since 2009 and is more than double the average over the same period. 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 £5,000 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 £441 per hectare, the Medium making a loss of £109 and the High performers making £10 per hectare. The Low performance band showed a decline per hectare of £155 with the Medium performers losing £21 per hectare less and High performers reducing by £72 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 less than half that of the High performing group. (Figure 7).
- The Farm Business Income generated by the Basic Payment Scheme cost centre is highest for Low performing farms (£ per ha) with High performing farms receiving £12 less per hectare, and is £23 lower per hectare for Medium performing farms. (Figure 7).
- 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 Small 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 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 127% of the total Farm Business Income for Small farms, 88% for Very Large farms, 120% for Part-time farms, 96% for Medium farms and 92% for Large farms.

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<sup>4</sup> 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, 2015/16

£ per farm	All farms	Low	Medium	High
Total Farm Business Income	12,049	-12,835	9,162	41,955
<i>Of which, by cost apportionment</i>				
Agriculture	-10,837	-24,748	-10,239	1,526
Agri-environment and other payments	4,220	1,472	3,835	7,653
Diversification out of agriculture	5,784	2,214	3,906	12,957
Basic Payment Scheme	12,882	8,227	11,660	19,819

Figure 7 Farm Business Income and Unpaid labour per hectare by Cost Centre, by Performance Band, 2015/16

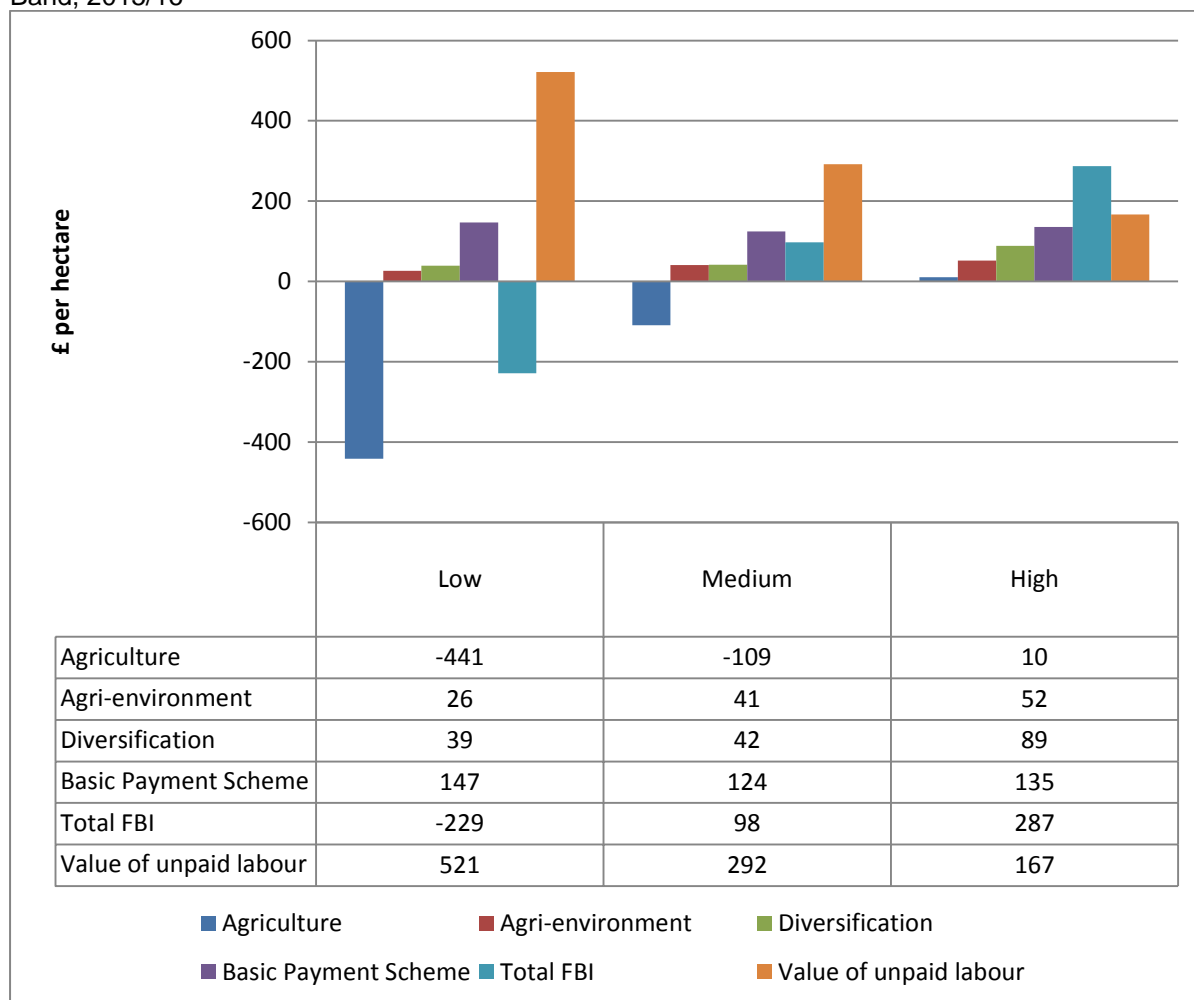
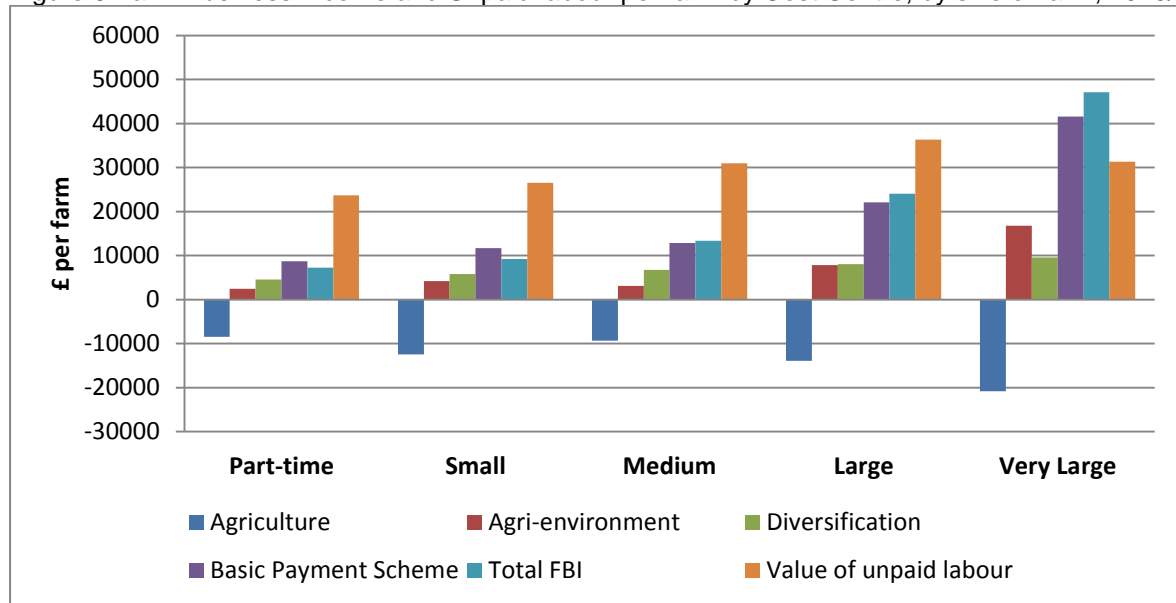


Figure 8 Farm Business Income and Unpaid labour per farm by Cost Centre, by size of farm, 2015/16





## Gross Margin data from the Lowland Grazing Livestock farms<sup>5</sup>

- Gross margin per beef cow is nearly a third 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 close to two thirds 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 five years for Conventional producers but is more variable for Organic producers. (Figure 9)
- The gross margin per cow and per hectare is 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 but in favour of the Store cattle producers. On a per hectare basis the finishers have higher stocking rates so achieved similar gross margins. Gross margins for beef rearing have declined over the last five years.
- For the lowland beef bred finishing systems, the lower variable costs per head for the organic producers and higher output than average, leaving the average conventional beef bred finisher with the lower gross margin per head (See Table 11).
- The Top third group of producers have a gross margin per head close to three quarters 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.
- 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)<sup>6</sup>. The herds with less than 50 head have the lowest gross margin per head and the herds with 50-85 have the highest. The stocking rate is greatest for the largest herds.
- 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 conventional producers decreased by about £5 per head due mainly to lower output, with the average finished lamb price £6 per head lower produced.. For organic lowland sheep flocks the gross margin was similar to previous two years (Table 12 and Figure 13).
- The largest lowland flocks have the lowest gross margin per head. There is a lot of variability in this group particularly on a per hectare basis. The performance per ewe increases with scale of flock until over 500 ewes but the gross margin per hectare is highest for flock with 300-500 ewes (Figure 14).

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<sup>5</sup> 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)

<sup>6</sup> 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 decreased 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 (Weighted average performance)		2015/16		
		Average		Top Third*
		Conventional	Organic	Conventional
Number of farms		137	28	
Cows per herd		36	37	36
Stocking rate:	LU/ha	1.04	0.88	1.11
	ha/LU	0.96	1.14	0.90
		£ per cow		
Output -	calf output	493.9	512.5	608.4
	depreciation	-63.4	-73.4	-53.6
ENTERPRISE OUTPUT (excl. BLSA)		430.5	439.1	554.8
Concentrates		37.2	13.6	27.7
Coarse fodder		8.8	12.3	7.2
Veterinary and medicines		27.4	23.5	25.1
Other livestock costs		56.2	47.2	52.0
Forage †		59.9	25.1	44.1
TOTAL VARIABLE COSTS ‡		189.5	121.7	156.1
GROSS MARGIN per cow (excl. BLSA)		240.9	317.4	398.7
GROSS MARGIN per LU (excl. BLSA)		242	311	395
GROSS MARGIN per hectare (excl. BLSA)		250	279	443
Concentrates per £100 output		9	3	5
<i>Averages - previous year</i>				
Stocking rate:	LU/ha	1.02	0.90	1.05
Gross Margin: £/cow		247.0	254.1	382.6
Gross Margin: £/ha		252	229	403
* 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

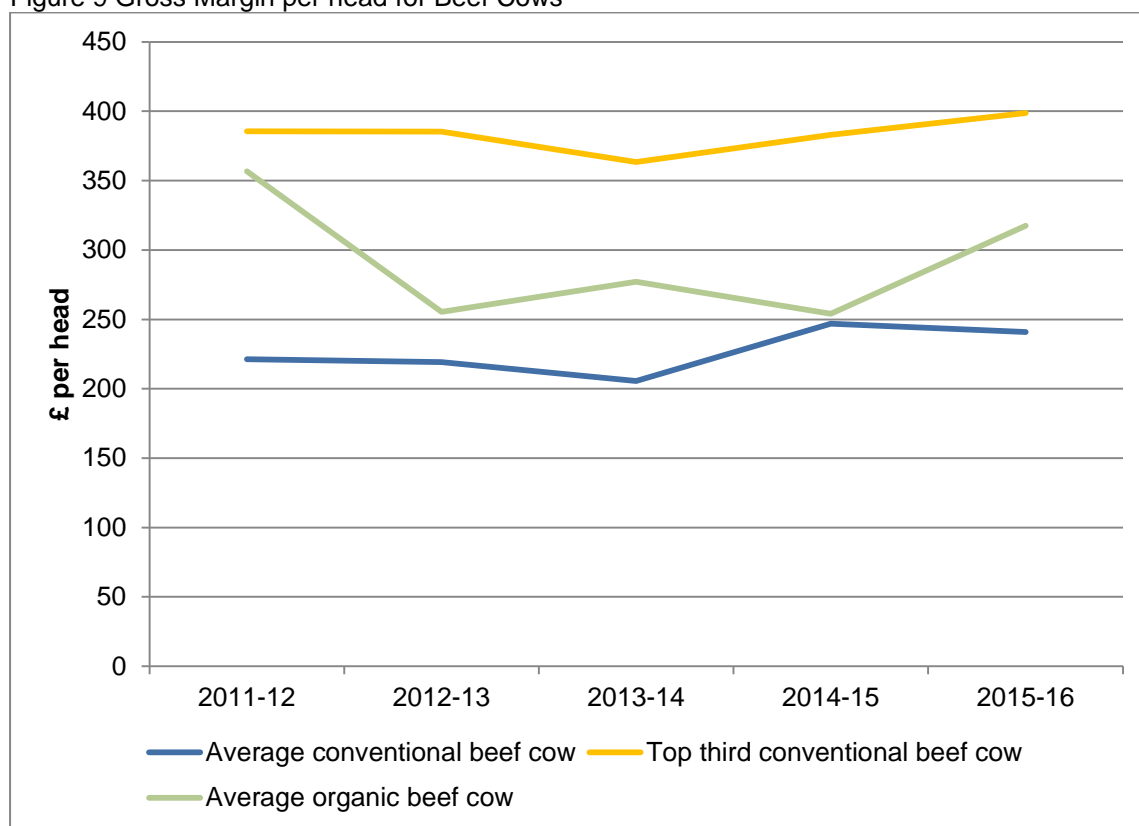


Figure 10 Lowland Beef Cow Gross Margin, by Herd size, conventional farms, 2015/16

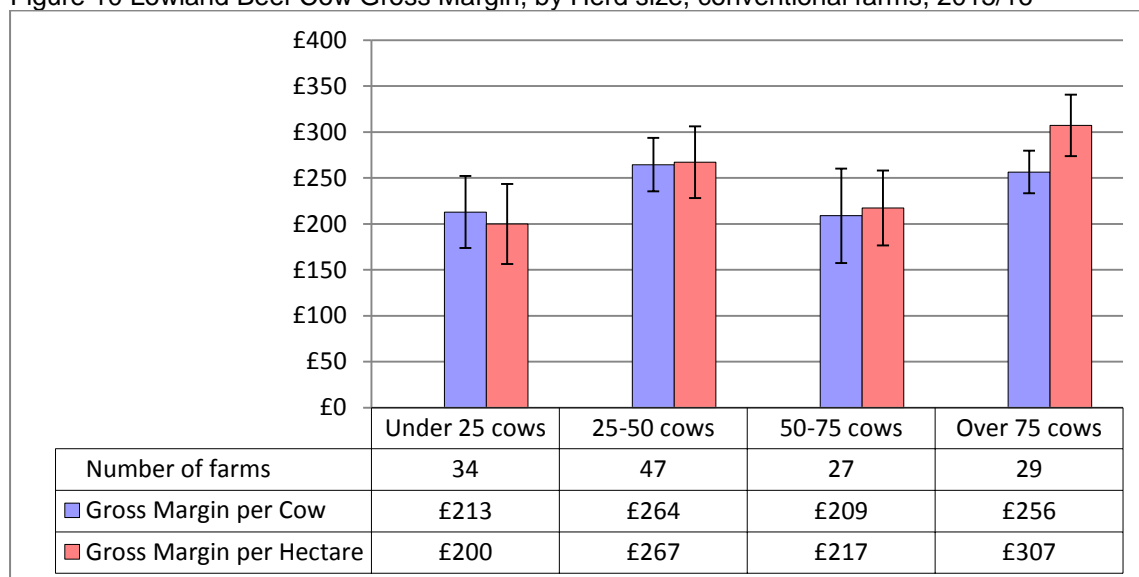


Table 11- Lowland Beef Rearing Enterprise Gross Margin data, 2015/16

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		65		86	20	
Cattle per herd		39	37	99	55	92
Average finished sale price - £/head				1136	1215	1155
Stocking rate:	LU/ha	1.11	1.06	1.65	1.52	1.66
	ha/LU	0.90	0.94	0.61	0.66	0.60
£ per head						
OUTPUT		404.9	616.9	396.6	455.5	515.6
Concentrates		79.7	80.4	111.7	45.1	112.7
Coarse fodder		3.1	3.5	11.4	6.9	9.4
Veterinary and medicines		19.7	22.1	11.4	9.5	11.4
Other livestock costs		60.1	81.2	53.6	58.8	50.5
Forage †		27.3	39.5	33.4	18.3	31.9
TOTAL VARIABLE COSTS ‡		189.9	226.8	221.5	138.5	215.8
GROSS MARGIN per head		215.0	390.1	175.1	317.0	299.9
GROSS MARGIN per LU		383	683	288	481	499
GROSS MARGIN per hectare		424	723	474	729	830
Concentrates per £100 output		20	13	28	10	22
<i>Averages - previous year</i>						
Stocking rate:	LU/ha	1.09	1.04	1.68	1.54	1.66
	ha/LU	0.91	0.96	0.60	0.65	0.60
Gross Margin: £/head		231.4	402.7	198.6	281.4	351.8
Gross Margin: £/ha		432	719	564	664	965
Average finished sale price- £ /head				1125	1064	1149
* 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

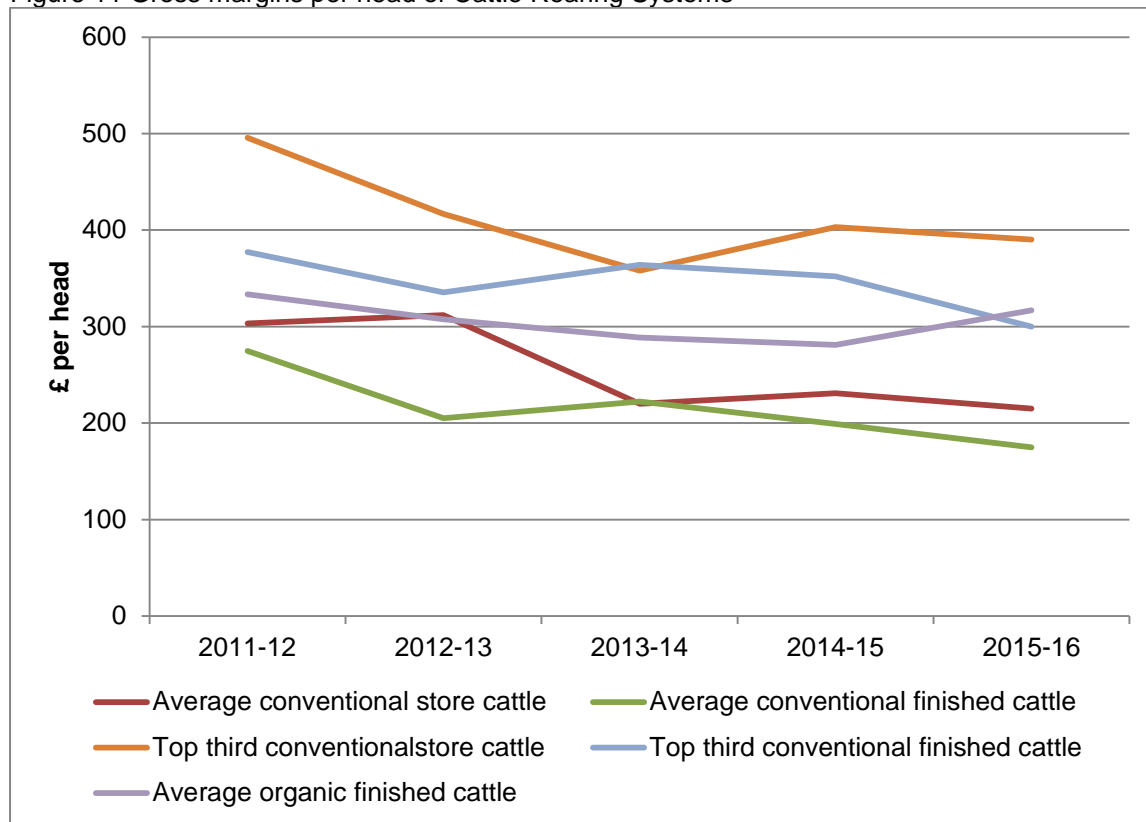


Figure 12 Beef Bred Finished Cattle Gross Margin per Head & per Hectare, by herd size conventional farms, 2015/16

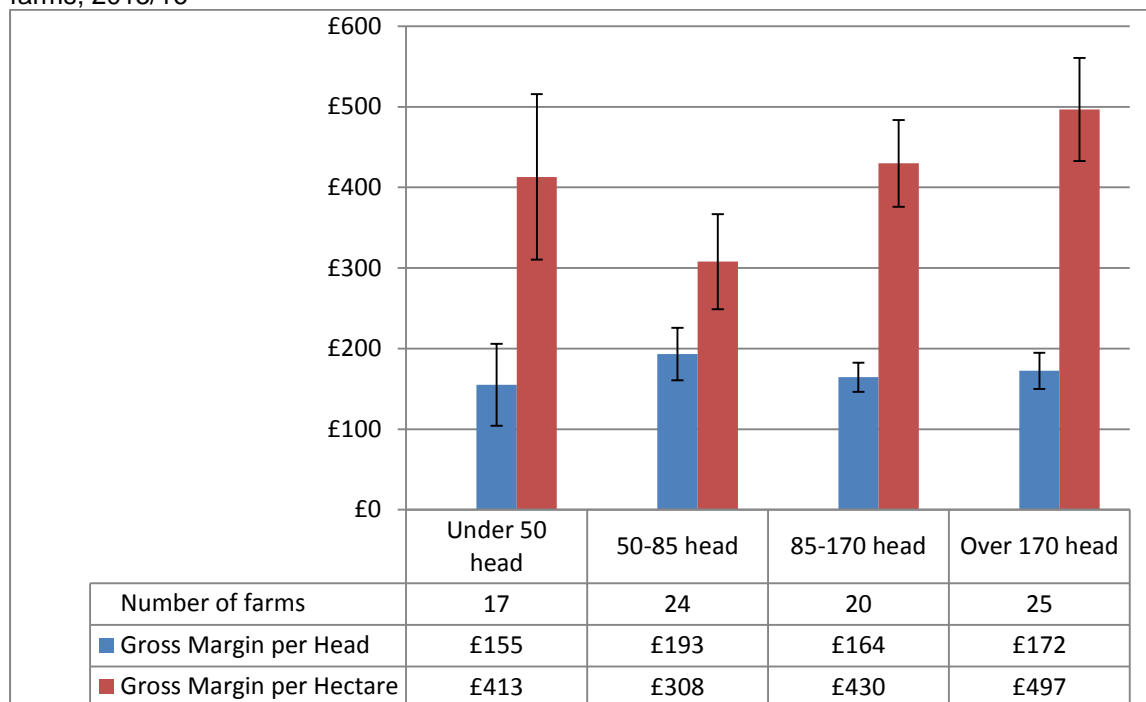


Table 12 –Lowland Ewe Gross Margin data, 2015/16

Gross margins per ewe and per hectare		2015/16		
(Weighted average performance)				
		Average		Top Third*
		Conventional	Organic	Conventional
Number of flocks		87	20	
Ewes per flock		326	300	432
Average lamb sale price - £/lamb		70.9	71.5	72.4
Stocking rate - ewes per hectare		5.39	5.35	6.95
		£ per head		
Output -	lambs	107.3	99.3	127.4
	wool	3.3	4.1	3.2
	depreciation	-10.8	-14.7	-8.1
ENTERPRISE OUTPUT (excl. BLSA)		99.8	88.7	122.5
Concentrates		17.1	7.0	17.6
Coarse fodder		1.8	4.5	1.8
Veterinary and medicines		7.0	5.7	7.8
Other livestock costs		12.2	11.1	12.6
Forage †		7.0	4.5	7.5
TOTAL VARIABLE COSTS ‡		45.1	32.8	47.4
GROSS MARGIN per ewe (excl. BLSA)		54.7	55.9	75.1
GROSS MARGIN per LU (excl. BLSA)		345	365	466
GROSS MARGIN per hectare (excl. BLSA)		295	299	523
Concentrates per £100 of output		17	8	14
<i>Averages - previous year</i>				
Stocking rate:	ewes/ hectare	5.4	4.8	7.0
Gross Margin: £/ewe		60.3	54.4	90.7
Gross Margin: £/ha		325	263	631
Average finished sale price- £ /head		77.2	76.3	80.3
* 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. 2015/16

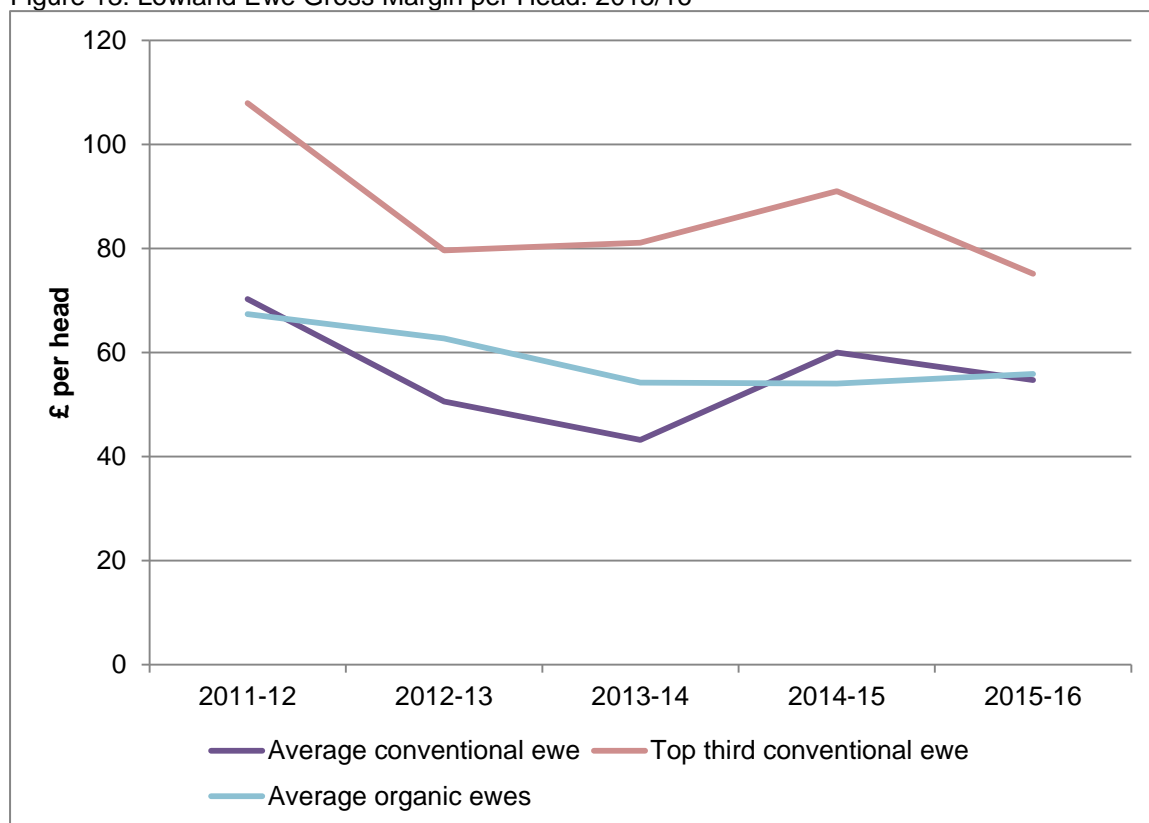
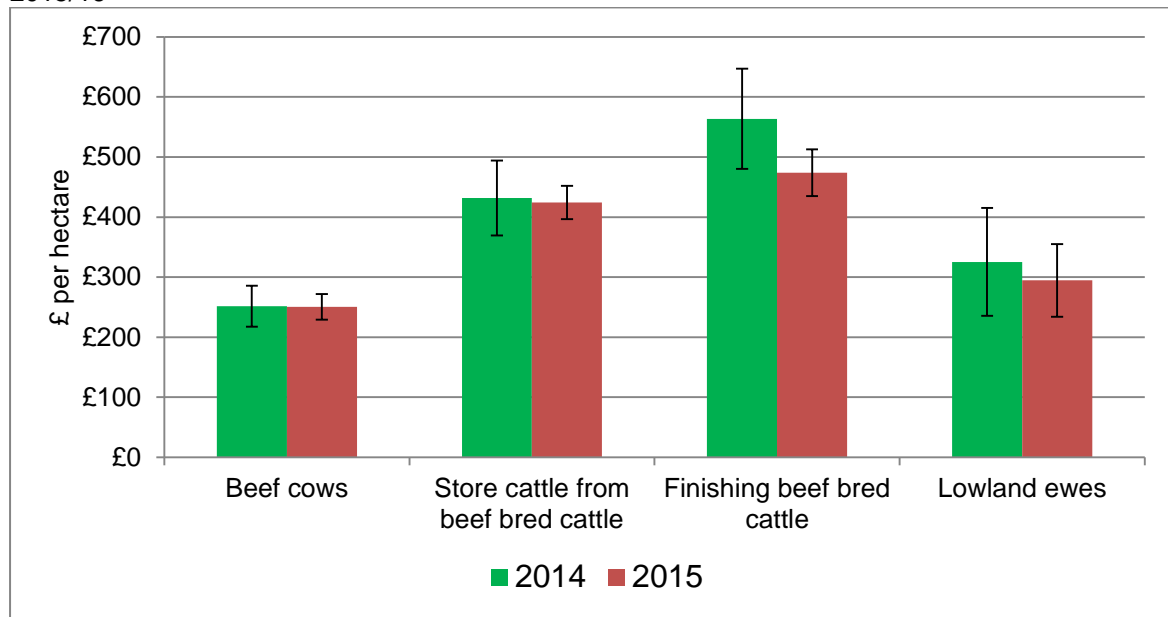


Figure 14 Lowland Ewe Gross Margin per Head and Per Hectare by flock size. 2015/16



Figure 15 Comparing gross margin per hectare for average conventional producers 2014/15 and 2015/16





## 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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