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Rural Business Research

The University of Nottingham

Farm Business Survey

2012/2013

Dairy Farming in England

Helen McHoul, Philip Robertson and Paul Wilson

RBR

independent research, data and analysis

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April 2014

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 new 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)

Foreword to the Eighth Series

Drawing upon data from the financial year 2012 to 2013, this eighth series of reports arguably represents a turning point in the average financial fortunes of agricultural and horticultural businesses in England. Across the sectors, average Farm Business Income (FBI) fell by 30% from the previous year's results, albeit with specialist pig and poultry farms bucking this trend. Looking across the most recent five years' FBI performance, we may yet look back to the harvest of 2011, and the 2011-12 financial year more generally, and conclude this represented a high point for the industry, in aggregate, at the start of the 2000s. Therefore, as we provide the 2012-13 results for particular farm types and enterprises, it is opportune to consider the driving forces of economic performance as we look to the future.

Having written about Common Agricultural Policy (CAP) reform numerous times within the forewords to these series, one would be forgiven for thinking that we must have by now arrived at a point of certainty and clear policy direction. However, at the start of 2014, while the direction of the CAP is certainly clearer, there remains considerable uncertainty over how the broad CAP reform package that has been agreed will be implemented. The modulation rules over the movement of monies from Pillar I to Pillar II of the CAP will almost certainly lead to a more uncommon implementation of the CAP within the EU, and even within the UK. One of the largest unknowns of the new CAP is how the greening rules will be implemented by member states – discussions of crop rotation and permanent pasture will take on a whole new meaning and focus around the kitchen tables of farm households, while understanding what is meant by an Ecological Focus Area is already bringing forward yet more terminology and rules for farmers and producers to get to grips with.

No preface to the 2012-13 agricultural and horticultural financial year data analysis would be complete without reference to the prevailing climatic conditions over the April 2012 to March 2013 period. After the early spring 2012 drought conditions gave way to one of the wettest summers on record, the main grass and crop growing and harvest season of 2012 will not quickly fade from the memories of those at the sharp end of primary food production. The exceptionally cold late winter of 2012/13 and spring 2013 then placed increased pressures on many businesses, placing immediate financial pressures on livestock farmers. The results presented in this eighth series must therefore be set against the prevailing conditions of this, hopefully atypical, 12 month period. However, the impacts of yields and costs are only part of the story; output prices, exchange rate fluctuations, policy support and diversification opportunities all contribute to the changing fortunes of the various sectors that we report on in our series. As businesses look to the future, all of these aspects, and many more, will be at the forefront of their thinking. To help businesses assess their own strengths, weaknesses, opportunities and threats, we hope that the data and independent analyses contained within *Rural Business Research's (RBR)* series of reports provide useful and essential information to facilitate the task.

Once again, I particularly thank all the farmers and producers who take part in the FBS research programme; without the voluntary contribution of these individual businesses it would not be possible to provide such a breadth and depth of data and information to the wider industry.

Dr Paul Wilson
Chief Executive Officer, Rural Business Research
January 2014

www.ruralbusinessresearch.co.uk

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.

The basic information on which this report is based was collected on behalf of, and largely financed by, the Department for Environment, Food and Rural Affairs and is Crown Copyright.

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Summary

The Dairying Sector

- During 2012/13, dairy farming in England witnessed an increase in milk prices with a yearly average price of 28.35 pence per litre (ppl) compared to 28.03 ppl in 2011/12

- For all farms, key inputs costs, namely feeds, energy and veterinary costs all increased on the levels of 2011, whilst fertiliser costs decreased

- Annual milk production fell by 520 million litres (3.9%) in 2012/13. Poor grass growing conditions during the spring and summer of 2012 contributed significantly to this outcome

- Average milk yield decreased by 3.6% to 7,327 litres per cow; (lpc); reversing the upward trend of the previous four years. The national herd reduced in size by approximately 4,000 cows between 2011/12 and 2012/13, a much smaller rate of decline than in the recent past

- In December 2013, there were approximately 200 fewer milk producers than a year earlier, a fall of 1.9%

Farm level results

- Farm Business Survey data from 2012/13 shows that the average Farm Business Income (FBI) from dairying was £361/ha, which at the average farm size equates to an FBI of approximately £51,230, representing a decrease of 41% from 2011/12

- Average FBI on conventional dairy farms in 2012/13 was £360/ha (£51,138 per farm), whilst on organic farms average FBI was £384/ha (£53,284 per farm). These results represent a decrease in FBI of 42% for conventional farms and an increase in FBI of 1% for organic farms

- Average FBI on lowland dairy farms was £359/ha (down from £619/ha in 2011/12). For LFA dairy farms, average FBI was £361/ha compared to £635/ha in 2011/12

- Management and Investment Income (MII) across all dairy farms decreased by £254/ha to £38/ha in 2012/13. This equates to an average MII of £5,393 per farm

- The reliance on family labour typically found on the smaller dairy farms, i.e. less than 60 hectares, resulted, for lowland farms in a lower MII than was achieved for the two larger size groups presented. The smaller size group achieved a MII of -£469/ha, compared to £57/ha and £69/ha for the 60 to 120 hectares and greater than 120 hectares groups, respectively.

- Profitability analysis reveals that FBI for the upper quartile of lowland dairy farms was £974/ha compared to -£90/ha for the lower quartile. Milk output for the upper quartile group decreased by 5% in 2012/13, whilst for the lower quartile group, milk output increased by more than 10%. The upper quartile group has the smallest farm size at 116.45ha, compared to 161.45ha for the lower quartile

- Continuing the recent trend, LFA dairy farms within the largest size group operated less intensive systems; achieving the lowest total farm output whilst incurring the lowest variable and fixed costs . The heavy reliance on family labour resulted in the smallest size group (less than 60 hectares) recording the lowest MII at -£457/ha. The respective FBIs for the less than 60 hectares, the 60 to 120 hectares and the greater than 120 hectares size groups are £13,821, £35,163 and £67,759

- Analysis by LFA quartile groupings (by FBI) reveals that the upper quartile achieved a milk output that was 31% greater than that achieved by the lower quartile. At the average farm sizes for these groups, the lower and upper quartiles achieved FBI returns of approximately -£22,254 and £106,389, respectively

Dairy Enterprise Results

- Enterprise-level analysis shows that for conventional and organic dairy farms, respective gross margins in 2012/13 were £972/ha and £1,050/ha.

- For lowland dairy herds, despite an average fall in milk yield, an increase in milk price of 0.70 ppl resulted in an increased output from milk of £23/cow. For LFA herds, average milk price increased by 1.00 ppl, but when coupled with a 2% decrease in yield resulted in an increased output from milk of a modest £21/cow. Respective gross margins for lowland and LFA herds were £989/cow (£1071/cow, 2011/12) and £863/cow (£971/cow, 2011/12)

- For lowland herds, a continuation of a trend from previous years can be seen, i.e. as herd size increases, so do the average yield/cow, milk output/cow, total variable costs/cow and total gross margin/cow. Gross margins per cow for the less than 80 cows, the 80 to 130 cows and the greater than 130 cows groups were £827, £981 and £1,006 respectively. These margins per cow equate to gross margins per litre for the less than 80 cows, the 80 to 130 cows and the greater than 130 cows groups of 12.76ppl, 13.00ppl and 12.98ppl respectively

- Lowland dairy farms in the upper quartile (by gross margin performance) produced on average 2,278 lpc more than those in the lower quartile. Average milk prices for the upper quartile exceeded those of the lower quartile by 1.1ppl which represents a narrowing of the differences from the 2010/11 level of 1.8ppl and 1.5ppl from 2011/12

- Concentrate to milk conversion rates of 8.2ppl and 10.4ppl were recorded for the gross margin upper and lower quartile lowland farms respectively (7.0ppl and 9.0ppl in 2011/12), whilst gross margin per litre results were 15.1ppl (upper quartile) and 8.9ppl (lower quartile) compared to 16.4ppl and 10.2ppl in 2011/12

- Gross margin performance quartile analysis of LFA dairy farms reveals that the better performers have larger herds and achieve substantially higher yields (+1900 litres per cow) and receive higher milk prices (+1.8ppl); leading to a wide disparity between the two groups in gross margin per cow achieved of more than £730/cow

- The higher milk price achieved by organic herds, coupled with their lower concentrate feed costs, resulted in organic herds achieving a margin over concentrate performance that exceeded that of conventional herds by 4.19ppl

Conclusion

- The findings in this report reaffirm the conclusions drawn in previous reports in this series, that in general, the larger herds are more profitable and operate relatively high input-output systems. The report also highlights the marked differences in economic returns and technical efficiency between the top and bottom performers that have been observed in previous year's analyses; however, a narrowing of the gap between the top and bottom performers in terms of FBI may suggest that the worst performers are largely amongst those farmers leaving the industry and so elevating the performance of the lower quartile group.

Chapter 1: The Dairying Sector

1.1: Introduction

The 2012/13 milk year ended with farmgate milk prices approximately 1.50 pence per litre (ppl) higher than it began but this fact reveals little of the fluctuations in milk price that occurred in this twelve month period. The year began with the news that producers were facing a price cut, effective from June 2012, of between 1.00 ppl and 1.50 ppl. Declining returns from the liquid milk market that were exacerbated by supermarket cost cutting of liquid milk, plus reduced commodity prices were cited by processors as the chief reasons for this cut in the producer milk price. Note: in July 2012 the retail price of milk was at its lowest point since 2005. Producer confidence and concerns about profitability were compounded by notice that the farmgate price of milk was to fall by a further 2.00 ppl in August 2012.

The price cuts outlined above prompted unrest amongst producers, many of whom felt aggrieved about the terms of their producer supply contract which required little notice of price changes to be given by processors and yet the producer was often tied into long term contracts that required long periods of notice in order to leave. Producers sought a voluntary code of practice which would redress the issue of notice and also made a call for producer organisations to be formed that would negotiate milk prices with processors and retailers on behalf of producers. Farmers organized protests at supermarkets and processing plants which ended when the proposed August 2012 decrease in farmgate milk price was abandoned and in September 2012, it was announced that a voluntary code of practice between processors and producers had been agreed.

The average milk price for 2012/13 increased by 0.32 ppl compared to 2011/12 but key input prices, with the exception of fertilizer, also increased by amounts that eroded the benefit of the higher milk price. The outcome was a downturn in dairying incomes that was largely the result of lower milk production, a poor grass growing season in 2012 and a higher usage of feeds bought at increased prices.

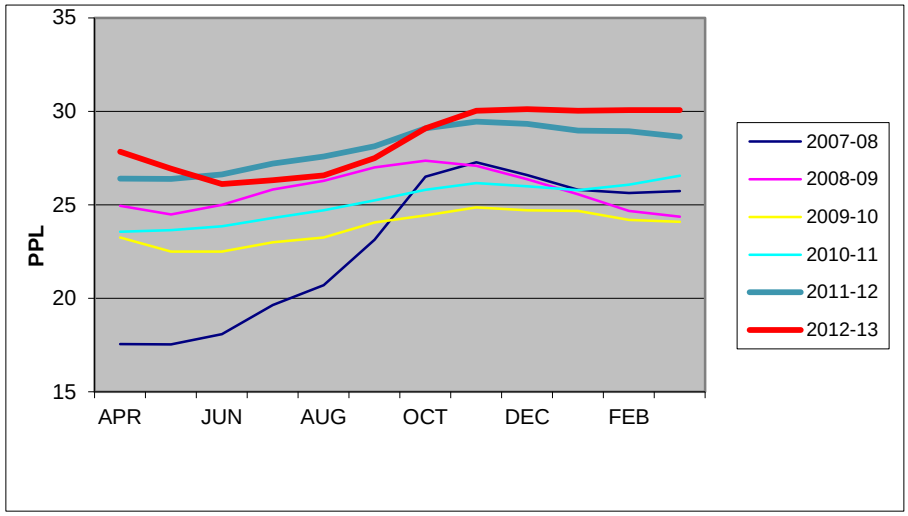
Drawing upon information from a range of published sources together with analysis of data from the Farm Business Survey 2012/13, *Dairy Farming in England* provides a contemporary analysis of the performance of dairy farms, and dairy production, in England for the 2012/13 financial year. The purpose of this introductory section of the report is to set out the market environment and key factors affecting the sector during this financial year. Specifically, this section of the report gives an overview of the UK dairying sector, focusing on:

- farmgate milk prices
- input prices
- annual milk production
- UK dairy herd and average milk yield
- producer numbers

1.2: Farmgate Milk Prices

Figure 1.1 shows the UK monthly average ex-farmgate milk price (including seasonality; net of delivery charges) for milk years 2007/08 to 2012/13. The average price during 2012/13 was 28.35 ppl compared to 28.03 ppl in 2011/12, 25.11 ppl in 2010/11, 23.59 ppl in 2009/10, 25.72 ppl in 2008/09 and 22.63 ppl in 2007/08. The range of prices offered by milk buyers was, once again, very wide, with dedicated suppliers featuring at the top end of the payments scale. Liquid milk contracts that are based on costs of production provided producers with some degree of security and prevention against the erosion of margins; however, it is estimated that only 14% of dairy producers supply milk on this basis (The Anderson Centre, July 2013). The 2012/13 year ended with milk prices at record highs but not significantly improved margins as higher costs, especially feeds, offset increased outputs (see Chapter 3).

Figure 1.1: Average Farmgate Milk Prices (UK)



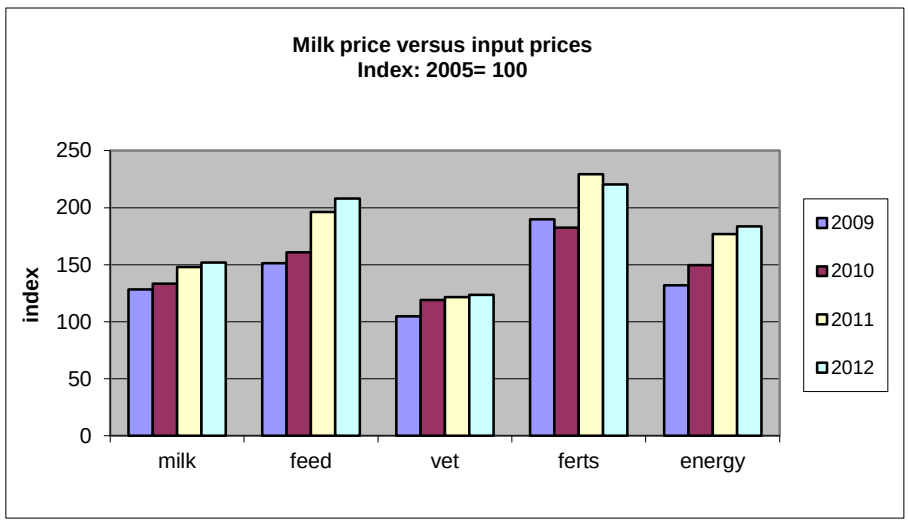
Source: Defra (2014a), Milk Price Surveys

1.3: Input Prices

Figure 1.2 shows the trends in farmgate milk prices and the prices of some key dairying inputs from 2009 to 2012, using the year 2005 as the base year (index = 100). Note that the price changes presented here are overall averages for UK farmers and not necessarily those of dairy farmers. It can be seen that in 2012 the average prices of feed, veterinary services and medicines, and energy all increased compared to 2011. However, fertilizer prices dropped slightly but not back to the levels of 2009 and 2010.

A comparison of input and output costs for dairy farms can be found later in this report.

Figure 1.2: Milk and Input Prices (UK)

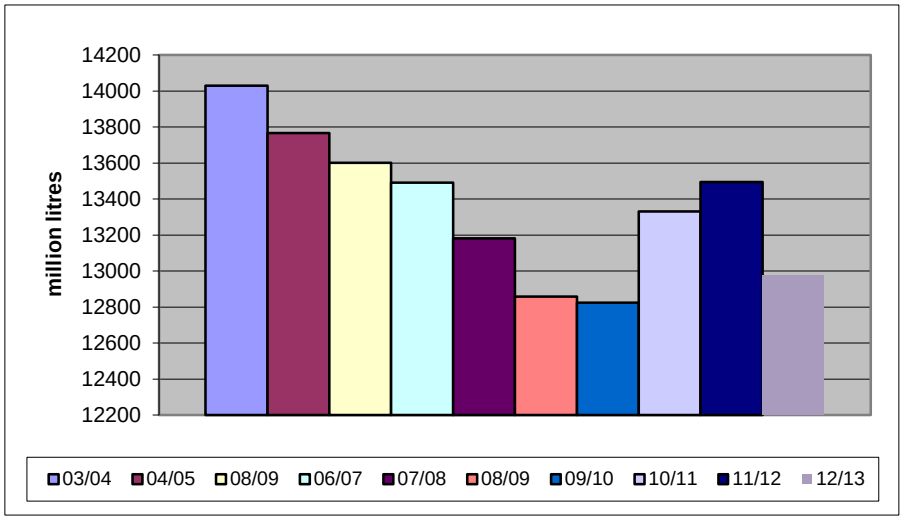


Source: Defra (2014b); Agriculture in the UK 2012

1.4: Annual Milk Production

Figure 1.3 shows annual milk production in the UK (defined as wholesale deliveries) for the years 2003/04 to 2012/13. Milk production fell sharply in 2012/13, in contrast to the increase in production in 2010/11 and 2011/12. Annual production decreased to 12,974 million litres, a decrease of 520 million litres (3.85%) and was influenced by yield affecting poor grass growing conditions in the cold and wet spring and summer of 2012 against the backdrop of declining cow numbers.

Figure 1.3: UK Annual Milk Production

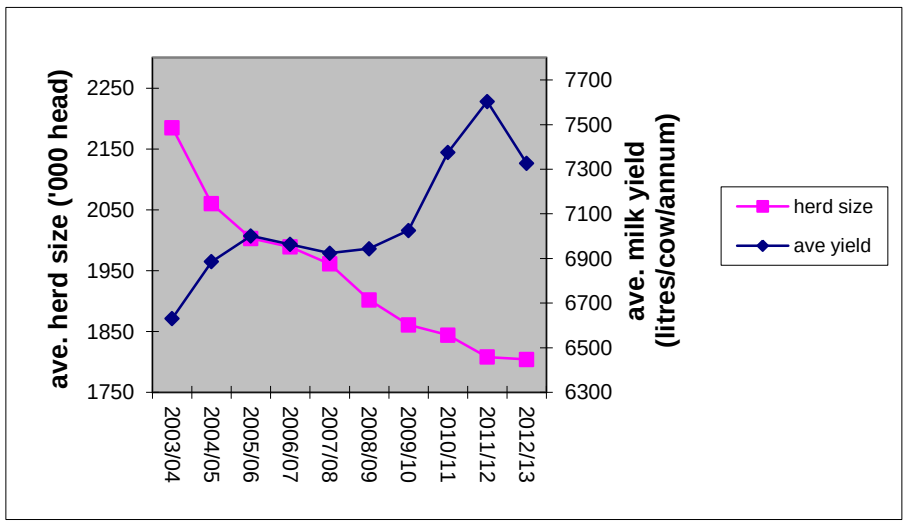


Source: MDC Datum (2014a)

1.5: UK Dairy Herd and Average Milk Yield

Figure 1.4 shows that in 2012/13 the average milk yield fell sharply to below the levels recorded in 2010/11 in contrast to the previous four years when average milk yield had increased. A 277 litres per cow (3.64%) decrease on the 2011/12 average yield saw yields of 7327 litres per cow in 2012/13. Factors that contributed towards this reduction in yield include the aforementioned poor grass growing conditions in the spring and summer of 2012 and a reluctance to maintain yields by feeding high priced feeds. Figure 1.4 illustrates that there was a much smaller annual decline (0.2%) in the national herd size to 1,804,000 cows.

Figure 1.4: UK Herd Size and Average Milk Yield

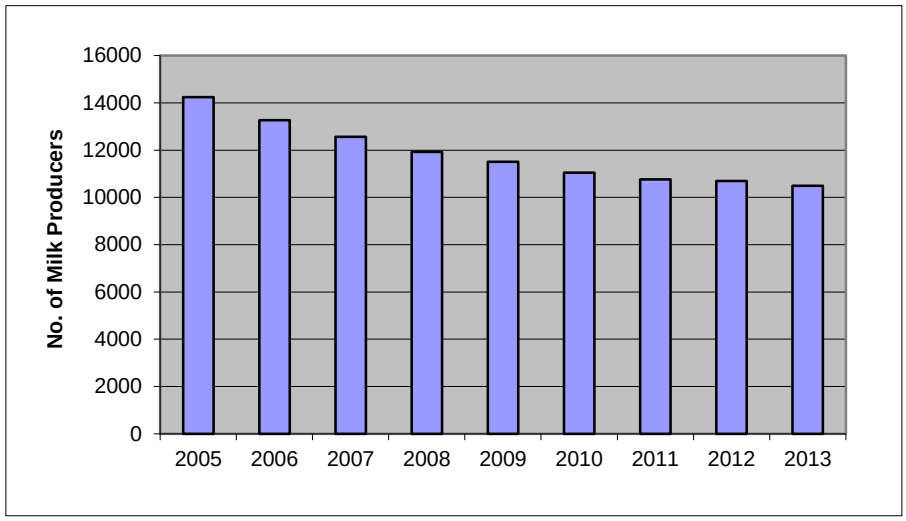


Source: MDC Datum (2014b)

1.6: Producer Numbers (England & Wales)

Figure 1.5 shows the continuing trend of the fall in the number of milk producers in England and Wales, when at December 2013 there were 200 fewer producers than at December 2012. Between 2005 and 2013, there were 3800 fewer milk producers, representing a fall of 26.4%.The data suggest that the exodus from dairying is levelling out when set against the figures from recent years, perhaps suggesting that the vast majority of producers that remain are more committed and see their future being in the industry rather than out of it.

Figure 1.5: Number of Milk Producers (England & Wales)



Source: MDC Datum (2014c)

1.7: Structure of Report

The above sections have described the market environment in which the dairy sector has been operating during the 2012/13 financial year, whilst making reference to the economic and market conditions over recent years. The remaining chapters of this report are as follows:

- Chapter 2 details the data source and data analysis undertaken
- Chapter 3 provides the results of the data analysis

Chapter 2: Data and Methodology

2.1: Data

The data used in this report are derived from the Farm Business Survey returns for England for those farms classed as Dairy Farms[1] and relate to the outputs, inputs and returns to each farm, together with total farm area and farm size data. Table 2.1 below details the number of observations for the per hectare farm results, in each category by farm type (All, Lowland, Less Favoured Area (LFA) and Organic), by EU super region (North, East, West), by farm size categories and by lower and upper performance quartiles. Table 2.2 details the number of observations for the enterprise level results, in each category by farm type (All, Lowland, LFA and Organic), by EU super region (North, East, West), by herd size categories and by lower and upper performance quartiles.

Table 2.1: Observations by Category: Farm-Level Data 2012/13

Category		All	Lowland Conventional	LFA Conventional	Fully Organic[2]
Number of farms		314	210	65	39
EU Super	North	-	58	37	-
	East	-	49	11	-
	West	-	103	17	-
Farm Size	<60 hectares	-	28	16	-
	60-120 hectares	-	79	25	-
	>120 hectares	-	103	24	-
Performance	*Lower quartile*	-	53	16	-
(by FBI)	*Upper quartile*	-	53	16	-

FBI = Farm Business Income: Ins. data = Insufficient data available (<10 observations)

1 Holdings on which dairy cows account for more than two thirds of the total Standard Output for the farm. A holding is classified as a Less Favoured Area (LFA) holding if 50 percent or more of its total area is in the LFA and lowland holding if less than 50 per cent of its total area is in the LFA. See: *http://www.defra.gov.uk/statistics/files/defra-stats-foodfarm-farmmanage-fbs-UK_Farm_Classification.pdf*

2 In-conversion organic farms are included in the conventional groups.

Table 2.2: Observations by Category: Enterprise-Level Data 2012/13

Category		All	Lowland Conventional	LFA Conventional	Fully Organic[3]
Number of farms		289	194	58	37
EU Super Region	North	-	56	34	-
	East	-	42	(Ins. data)	-
	West	-	96	15	-
Farm Size	<80 cows	-	44	16	-
	80-130 cows	-	52	25	-
	>130 cows	-	98	17	-
Performance	*Lower quartile*	-	49	15	-
(by Gross	*Upper quartile*	-	49	15	-

Ins. data = Insufficient data available (<10 observations).

1 Holdings on which dairy cows account for more than two thirds of the total Standard Output for the farm. A holding is classified as a Less Favoured Area (LFA) holding if 50 percent or more of its total area is in the LFA and a lowland holding if less than 50 per cent of its total area is in the LFA. See: *http://www.defra.gov.uk/statistics/files/defra-stats-foodfarm-farmmanage-fbs-UK_Farm_Classification.pdf*

3 In-conversion organic farms are included in the conventional groups.

2.2: Methodology

The farm and enterprise level data were weighted using the Farm Business Survey weights and the subsequent results presented on a per hectare (farm level analysis) or per cow (gross margin analysis) basis. Descriptive results with the mean (average) for each category are reported as detailed in Chapter 3.

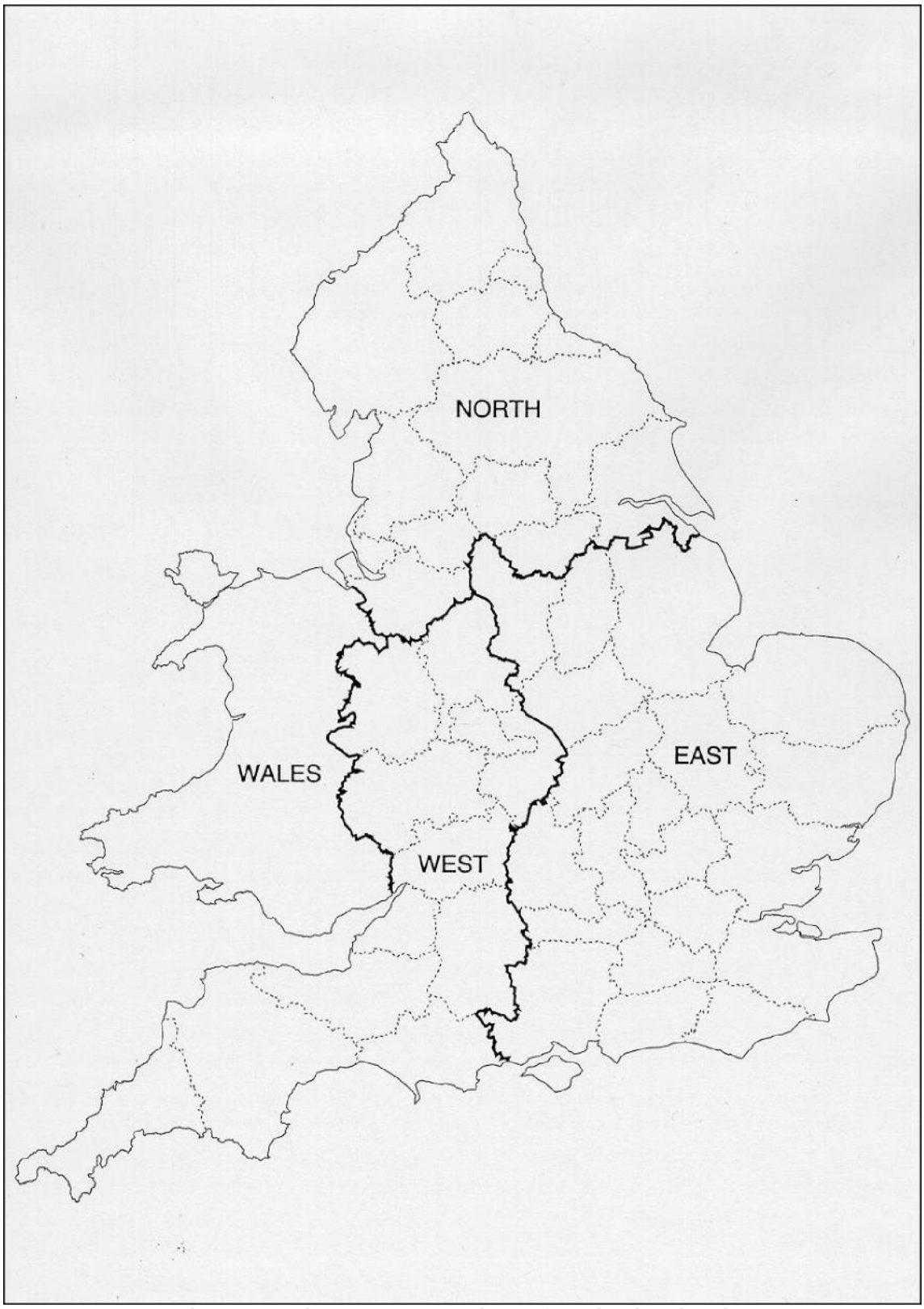


Figure 2.1: The EU Super Regions of England and Wales

Chapter 3: Results

3.1: All Farms – including Conventional and Organic

The results of the outputs, inputs, and margins from dairy farms in England on a per hectare (ha)[4] basis for 2011/12 and 2012/13 are presented in Table 3.1. This table shows the results for all dairy farms, together with results for conventional and organic farms detailed separately. The results for all farms show that for 2012/13, Farm Business Income (FBI) was £361 per hectare, which at the average farm size provides an average FBI of £51,230; a decrease of 41% on the 2011/12 figure. The previous years' results had shown an increase of 31% between 2010/11 and 2011/12 (McHoul et al., 2012).

A substantial reduction in Management and Investment Income (MII) of 87% from £292/ha in 2011/12 to £38/ha in 2012/13 is notable. MII is the economic return after accounting for the value of the farmer's and spouse's labour and a nominal value for owned land. In 2012/13, the average MII on dairy farms in England was £5,393 per farm, compared to the 2011/12 result of £41,663.

On analysis of farm output, the data shows a 2.4% increase in total farm output; increasing from £3,209/ha to £3,286/ha. Milk output also rose by 6% to £2,382/ha compared to £2,248/ha in 2011/12. Calf output increased by 19%; from £102/ha in 2011/12 to £121/ha in 2012/13.

Total variable costs increased by 17% from £1,333 in 2011/12 to £1,560 in 2012/13 which continues the pattern of rising costs as recorded in previous years' reports. In 2011/12, variable costs rose by 8% from £1,237/ha in 2010/11 to £1,333/ha in 2011/12, following an increase of 4% from £1,190/ha in 2009/10 to £1,237/ha in 2010/11, (McHoul et al., 2012). All variable cost categories show an increase on the previous year, notably home-grown concentrates (11%), purchased concentrates (21%), coarse fodder (33%), vet and medicine (7%), other livestock costs (10%) and fertiliser costs (14%).

Fixed costs increased by 7% to £1,483/ha compared to £1,386/ha in 2011/12. Without exception, all the fixed cost categories show increases on the previous year's levels; labour (9%), contract (1%), machinery depreciation (9%), other machinery (6%), miscellaneous (6%) and rent and rental equivalent (7%).

[4] The area used is the total farm area including woodland, roads, water, area not used for agriculture

Table 3.1: Outputs, Inputs and Margins for All Farms, Conventional and Organic

	All		Conventional		Organic	
	11/12	12/13	*11/12*	12/13	*11/12*	12/13
Number of farms	*320*	314	*273*	275	*47*	39
Area (ha)	*143*	142	*142*	142	*153*	139
	£/ha		£/ha		£/ha	
Output						
Milk	*2248*	2382	*2290*	2410	*1656*	1769
Calf	*102*	121	*104*	122	*73*	88
Lease Quota (net)	*0*	0	*0*	0	*-2*	0
Other Dairy	*1*	1	*2*	2	*0*	0
Herd Replacement	*-238*	-252	*-242*	-256	*-176*	-164
Total Dairy Output	***2113***	**2252**	***2154***	**2277**	***1551***	**1693**
Other Livestock	*522*	529	*533*	537	*387*	354
Other	*573*	505	*575*	507	*466*	463
Total Farm Output	***3209***	**3286**	***3262***	**3321**	***2405***	**2510**
Variable Costs						
Home-grown Concentrates	*64*	71	*63*	71	*79*	86
Purchased Concentrates	*689*	832	*705*	846	*461*	522
Coarse Fodder	*52*	69	*52*	70	*46*	49
Other Livestock Concentrates	*9*	11	*9*	11	*1*	2
Vet and Medicine	*94*	101	*96*	103	*58*	59
Other Livestock Costs	*224*	247	*226*	247	*198*	237
Seed	*32*	35	*32*	35	*26*	24
Fertiliser	*119*	136	*125*	142	*8*	6
Crop Protection	*31*	37	*32*	39	*2*	2
Other Crop Costs	*20*	22	*21*	22	*11*	11
Total Variable Costs	***1333***	**1560**	***1361***	**1585**	***890***	**997**
Fixed Costs						
Labour	*344*	376	*348*	379	*285*	305
Contract	*146*	148	*147*	149	*149*	126
Machinery Depreciation	*173*	189	*177*	191	*115*	138
Other Machinery	*197*	209	*199*	212	*150*	152
Miscellaneous	*265*	281	*267*	283	*233*	234
Rent and Rental Equivalent	*261*	280	*263*	282	*232*	244
Total Fixed Costs	***1386***	**1483**	***1400***	**1496**	***1165***	**1199**
Net Farm Income	***489***	**243**	***500***	**240**	***350***	**313**
Farmer / Spouse Labour	*198*	205	*200*	206	*177*	198
Management and Investment Income (MII)	***292***	**38**	***300***	**34**	***173***	**116**
Farm Business Income (FBI)	***608***	**361**	***624***	**360**	***380***	**384**

3.2: Comparison of Conventional and Organic Farms

Table 3.1 also shows the performance of conventional and organic dairy farms. It is interesting to note that in 2012/13 conventional farm's FBI fell by 42% from £624/ha to £360/ha, whereas there was little change for organic farm's remaining at around £380/ha. On a per farm basis,, conventional farm FBI in 2012/13 equated to £51,138 compared to organic farm FBI of £53,284, in contrast to the previous year whereby conventional farm FBI was £88,402 and organic farm FBI was £58,227.

Conventional farm total output increased by 2% from £3,262/ha to £3,321/ha; whereas organic farm total output increased by 4% from £2,405/ha to £2,510/ha. Milk and calf output increased on both conventional and organic farms, that is; total dairy output increased by 6% from £2,154/ha to £2,277/ha on conventional farms and by 9% from £1,551/ha to £1,693/ha on organic farms. Variable costs increased by 16% from £1,361/ha to £1,585/ha on conventional farms compared to a lower rate of increase on organic farms of 12% from £890/ha to £997/ha. Similarly, fixed costs increased by a greater amount on conventional farms; that is at a rate of 7%, resulting in an increase from £1,400/ha to £1,496/ha compared to a 3% increase on organic farms, which equates to a rise from £1,165/ha to £1,199/ha. Clearly, the cost and associated price rises of fertiliser, sprays and medicines will have had a notable impact on the results and variation between the conventional and organic farms surveyed for this report.

From this part of the report onwards when referring to data on a per hectare basis, unless otherwise stated, organic farm results are not included in the data presented.

3.3: Comparison of Lowland and Less Favoured Area (LFA) farms

Table 3.2 shows the performance of lowland and LFA dairy farms. The average farm area of lowland farms decreased by approximately 1ha to 147ha, whilst for LFA farms the average farm area increased by approximately 3ha to 117ha. In 2011/12, lowland dairy farms achieved, on average, a total farm output of £405/ha greater than the LFA group. In 2012/13 this figure increased further to £512/ha. The total farm output increased by just over 2% on lowland farms; however total farm output decreased by 0.9% on the LFA farms. Although the lowland group achieved a higher total output by £512/ha, it also incurred greater variable and fixed costs.

The total variable costs and total fixed costs were respectively £149/ha and £343/ha greater than for the LFA group. The substantial differences in the cost structures of the two groups noted in previous years has increased further, with lowland farms operating at 10% and 28.5% higher cost levels for variable and fixed costs respectively, than LFA farms. In 2011/12, lowland farms were operating at 7% and 24% higher cost levels for variable and fixed costs respectively, than LFA farms.

Despite the additional output achieved by the lowland group, the average FBI was £359/ha in comparison to £361/ha for the LFA group. It should be noted that these figures represent a decrease in FBI return for lowland farms of £260/ha (-42%), and for LFA farms £274/ha (-43%). At the average farm size, these results equate to an average FBI of £52,917 per farm for lowland farms and £42,306 per farm for LFA farms. Taking into account values for farmer's and spouse's labour and owned land, the respective MII for lowland and LFA farms are approximately £6,780 and minus £4,219 per farm.

Table 3.2: Outputs, Inputs and Margins: Lowland and LFA Farms

	Lowland		LFA	
	11/12	12/13	*11/12*	12/13
Number of farms	*215*	210	*58*	65
Area (ha)	*148*	147	*114*	117
	£/ha		£/ha	
Output				
Milk	*2308*	2450	*2136*	2173
Calf	*100*	119	*124*	139
Lease Quota (net)	*0*	0	*0*	0
Other Dairy	*2*	2	*0*	0
Herd Replacement	*-240*	-256	*-249*	-258
Total Dairy Output	***2170***	**2315**	***2012***	**2054**
Other Livestock	*525*	536	*564*	542
Other	*621*	544	*334*	288
Total Farm Output	***3315***	**3396**	***2910***	**2884**
Variable Costs				
Home-grown Concentrates	*67*	75	*40*	43
Purchased Concentrates	*699*	842	*722*	865
Coarse Fodder	*52*	71	*55*	63
Other Livestock Concentrates	*11*	13	*0*	0
Vet and Medicine	*96*	104	*93*	98
Other Livestock Costs	*228*	250	*215*	230
Seed	*36*	40	*10*	10
Fertiliser	*127*	145	*118*	124
Crop Protection	*37*	44	*9*	9
Other Crop Costs	*22*	23	*17*	17
Total Variable Costs	***1373***	**1607**	***1279***	**1458**
Fixed Costs				
Labour	*358*	396	*285*	283
Contract	*156*	157	*89*	101
Machinery Depreciation	*178*	193	*165*	177
Other Machinery	*204*	218	*176*	178
Miscellaneous	*271*	288	*243*	256
Rent and Rental Equivalent	*273*	294	*203*	208
Total Fixed Costs	***1440***	**1546**	***1161***	**1203**
Net Farm Income	***502***	**243**	***470***	**223**
Farmer / Spouse Labour	*191*	196	*245*	260
Management and Investment Income (MII)	***311***	**46**	***225***	**-36**
Farm Business Income (FBI)	***619***	**359**	***635***	**361**

3.4: Lowland: Influence of Farm Size

Table 3.3 shows the results of the three lowland size **groups (less than 60 hectares = small; 60 to 120 hectares = medium; greater than 120 hectares = large).** The specialist nature of the smaller size farms, as noted in the previous editions of this report, is not as evident in 2011/12 and 2012/13. In fact, in 2012/13 (as noted in 2011/12), the small size group actually recorded the highest total farm output (£3,857/ha) and milk output (£3,016/ha) and also the highest variable costs (£1,842/ha) and fixed costs (£1,619/ha).

The small size farms group achieved a MII of minus £469/ha, compared to the medium and large size groups which achieved a MII of £57/ha and £69/ha respectively. The key factor is the great reliance on farmer and spouse labour shown on farms in the small size group, whereby the farmer and spouse labour is valued at £680/ha. This figure contrasts sharply with the two other groups which show respective contributions of £340/ha and £131/ha for the medium and large size groups.

On analysis of the three groups by FBI performance, the results show that the large size group recorded the lowest FBI of £313/ha in comparison to the small size group's FBI of £347/ha and the medium size group's FBI of £526/ha.

The range of the total FBI across the three size groups is interesting, with the small size group achieving an average FBI per farm of £16,077 compared to that of the medium size group and the large size group which achieved £45,820 and £66,359 respectively.

Table 3.3: Outputs, Inputs and Margins: Lowland by Farm Size

Lowland	< 60 ha		60 – 120 ha		>120 ha	
	11/12	12/13	*11/12*	12/13	*11/12*	12/13
Number of farms	*32*	28	*75*	79	*108*	103
Area (ha)	*45*	46	*87*	87	*217*	212
	£/ha		£/ha		£/ha	
Output						
Milk	*2671*	2700	*2990*	3016	*2109*	2277
Calf	*159*	176	*145*	180	*85*	99
Lease Quota (net)	*0*	0	*0*	0	*0*	0
Other Dairy	*1*	8	*1*	1	*2*	2
Herd Replacement	*-290*	-310	*-329*	-342	*-214*	-229
Total Dairy Output	***2541***	**2575**	***2808***	**2856**	***1982***	**2148**
Other Livestock	*671*	627	*617*	657	*492*	497
Other	*313*	330	*380*	344	*702*	612
Total Farm Output	***3525***	**3532**	***3805***	**3857**	***3176***	**3258**
Variable Costs						
Home-grown Concentrates	*43*	43	*44*	57	*74*	82
Purchased Concentrates	*851*	937	*888*	1020	*641*	787
Coarse Fodder	*82*	102	*78*	100	*43*	61
Other Livestock Concentrates	*18*	9	*1*	1	*13*	17
Vet and Medicine	*105*	124	*110*	121	*92*	98
Other Livestock Costs	*296*	330	*292*	319	*207*	226
Seed	*21*	23	*28*	32	*39*	43
Fertiliser	*168*	176	*131*	144	*123*	143
Crop Protection	*10*	11	*18*	22	*43*	52
Other Crop Costs	*25*	34	*22*	26	*22*	22
Total Variable Costs	***1617***	**1789**	***1611***	**1842**	***1297***	**1531**
Fixed Costs						
Labour	*186*	202	*348*	356	*371*	417
Contract	*143*	155	*175*	189	*152*	148
Machinery Depreciation	*234*	234	*209*	225	*167*	182
Other Machinery	*240*	246	*193*	206	*204*	220
Miscellaneous	*367*	369	*331*	338	*250*	270
Rent and Rental Equivalent	*293*	326	*298*	305	*265*	290
Total Fixed Costs	***1464***	**1533**	***1554***	**1619**	***1409***	**1526**
Net Farm Income	***444***	**210**	***639***	**397**	***470***	**201**
Farmer / Spouse Labour	*714*	680	*326*	340	*126*	131
Management and Investment Income (MII)	***-270***	**-469**	***313***	**57**	***344***	**69**
Farm Business Income (FBI)	***536***	**347**	***787***	**526**	***580***	**313**

3.5: LFA: Influence of Farm Size

Note: This section of the report is based on low sample numbers and the results should therefore be treated with caution.

Table 3.4 presents the results of LFA dairy farms according to the three size groupings **(less than 60 hectares = small; 60 to 120 hectares = medium; greater than 120 hectares = large).** Examination of the input-output systems of the three size groupings, confirms that similarly to the findings for lowland farms, the large size group operates at a substantially lower intensity level of production than the two other smaller size groups. The large size group achieved the lowest total farm output (£2,649/ha), compared to the small and medium size groups which achieved total outputs of £3,196/ha and £3,228/ha respectively.

The percentage of total output derived from milk sales increased slightly in comparison to the previous year; for the small size group (77% *cf*. 73% in 2011/12), the medium size group (77% *cf.* 75% in 2011/12) and the large size group (74% *cf*. 72% in 2011/12).

From 2011/12 to 2012/13, total variable costs increased by 18%, 12% and 14% for the small, medium and large size groups respectively. Purchased concentrates costs increased by 20% for the small size group, by 19% for the medium size group and by 20% for the large size group.

Fixed costs increased by 14% (+£168/ha) for the less than 60hectares group; by 2% (+£22/ha) for the 60 to 120 hectares group and 3% (+£34) for the greater than 120 hectares group.

Regarding MII returns, the lower input-output system (large size group) achieved the highest MII of £76/ha, compared to the higher input-output systems of the small size group's MII of - £457/ha and the medium size group which attained an MII of minus£130/ha.

With reference to the average farm sizes noted in Table 3.4, average FBI farm returns are £13,821, £35,163 and £67,759 per farm for the small, medium and large size groups respectively. This is a fall on the 2011/12 year's FBI returns of £34,977, £53,753 and £112,029 per farm for small, medium and large size groups respectively.

Table 3.4: Outputs, Inputs and Margins: LFA by Farm Size

LFA	< 60 ha		60 – 120 ha		>120 ha	
	11/12	12/13	*11/12*	12/13	*11/12*	12/13
Number of farms	*15*	16	*22*	25	*21*	24
Area (ha)	*45*	44	*90*	94	*176*	187
	£/ha		£/ha		£/ha	
Output						
Milk	*2388*	2452	*2482*	2496	*1912*	1955
Calf	*192*	181	*142*	168	*105*	117
Lease Quota (net)	*0*	0	*0*	0	*0*	0
Other Dairy	*0*	0	*0*	0	*0*	0
Herd Replacement	*-261*	-327	*-266*	-299	*-237*	-226
Total Dairy Output	***2319***	**2306**	***2358***	**2365**	***1780***	**1846**
Other Livestock	*444*	446	*564*	523	*581*	566
Other	*495*	443	*369*	341	*293*	237
Total Farm Output	***3258***	**3196**	***3291***	**3228**	***2654***	**2649**
Variable Costs						
Home-grown Concentrates	*18*	19	*49*	72	*38*	31
Purchased Concentrates	*763*	916	*836*	994	*655*	787
Coarse Fodder	*62*	119	*44*	45	*60*	65
Other Livestock Concentrates	*0*	0	*0*	0	*0*	0
Vet and Medicine	*81*	83	*106*	103	*88*	97
Other Livestock Costs	*304*	347	*255*	251	*180*	201
Seed	*7*	6	*10*	10	*10*	10
Fertiliser	*131*	122	*133*	143	*108*	114
Crop Protection	*3*	6	*10*	9	*9*	8
Other Crop Costs	*16*	16	*25*	24	*13*	13
Total Variable Costs	***1387***	**1634**	***1468***	**1650**	***1161***	**1327**
Fixed Costs						
Labour	*188*	225	*301*	300	*289*	283
Contract	*106*	153	*112*	101	*74*	93
Machinery Depreciation	*214*	219	*190*	227	*144*	144
Other Machinery	*207*	218	*207*	209	*155*	155
Miscellaneous	*295*	358	*325*	312	*191*	210
Rent and Rental Equivalent	*215*	219	*218*	227	*193*	196
Total Fixed Costs	***1224***	**1392**	***1353***	**1375**	***1047***	**1081**
Net Farm Income	***647***	**170**	***470***	**203**	***446***	**242**
Farmer / Spouse Labour	*585*	627	*328*	333	*153*	166
Management and Investment Income (MII)	***61***	**-457**	***143***	**-130**	***293***	**76**
Farm Business Income (FBI)	***774***	**311**	***596***	**374**	***637***	**362**

3.6: Lowland: Comparison by Profitability Quartiles

The profitability quartiles referred to are based on performance by FBI per hectare and are determined by ranking farms according to FBI per hectare and grouping them (unweighted) to the upper 25%, middle 50% and lower 25%. It is notable from Table 3.5 that in 2012/13 the upper quartile had the lowest average farm size (approximately 116ha) compared to that of the lower quartile (approximately 161ha). Furthermore, in 2012/13, the upper quartile achieved a substantially greater total farm output (£4,492/ha) compared to the lower quartile (£2,890/ha). The upper quartile also incurred higher levels of total variable costs (£2,038/ha) and total fixed costs (£1,696/ha) compared to the lower quartile's respective costs of £1,469/ha and £1,541/ha, resulting in an average FBI for the upper quartile of £974/ha, in contrast to the lower quartile's FBI of -£90/ha for the 2012/13 year.

At the average farm sizes detailed in Table 3.5, the 2012/13 FBI data equate to an average FBI of £113,422 per farm for the upper quartile and -£14,531 per farm for the lower quartile. Compared to 2011/12, these levels of income represent a decrease in average FBI of £36,483 per farm for the upper quartile and £36,446 per farm for the lower quartile.

Furthermore, there are notable differences between the two quartile groups regarding the changes in output achieved and various costs incurred. For the upper quartile group, milk output actually decreased by 5% between 2011/12 and 2012/13, whilst for the lower quartile group, milk output increased by more than 10%. Purchased concentrate costs for the upper quartile increased by 9% (+£93/ha), whilst for the lower quartile concentrate costs increased by 13% (+£84/ha). In addition, for the lower quartile, vet and medicine, seed, fertilizer and crop protection costs increased by 10%, 24%, 18% and 46% respectively. In contrast, vet and medicine, seed and fertilizer decreased by 7%, 6% and 3% respectively for the upper quartile.

The MII in 2012/13 for the lower quartile group decreased to minus £293/ha compared to minus £114/ha for 2011/12. The MII in 2012/13 for the upper quartile group also decreased to £508/ha compared to £813/ha for 2011/12. The difference in FBI between the two quartile groups reduced slightly from £1,157/ha in 2011/12 to £1,064/ha in 2012/13.

Table 3.5: Outputs, Inputs and Margins: Lowland by Profitability Quartiles

Lowland	Lower quartile		Upper quartile	
	11/12	12/13	*11/12*	12/13
Number of farms	*54*	53	*54*	53
Area (ha)	*140*	161	*114*	116
	£/ha		£/ha	
Output				
Milk	*1787*	1975	*3715*	3522
Calf	*71*	92	*163*	171
Lease Quota (net)	*0*	0	*0*	0
Other Dairy	*0*	1	*8*	6
Herd Replacement	*-206*	-224	*-352*	-362
Total Dairy Output	***1652***	**1844**	***3534***	**3337**
Other Livestock	*425*	400	*726*	783
Other	*739*	646	*450*	371
Total Farm Output	***2816***	**2890**	***4710***	**4492**
Variable Costs				
Home-grown Concentrates	*51*	65	*59*	84
Purchased Concentrates	*647*	731	*1008*	1101
Coarse Fodder	*51*	58	*95*	124
Other Livestock Concentrates	*8*	10	*30*	35
Vet and Medicine	*88*	97	*139*	129
Other Livestock Costs	*215*	221	*311*	332
Seed	*41*	51	*36*	34
Fertiliser	*125*	148	*154*	150
Crop Protection	*41*	60	*27*	27
Other Crop Costs	*23*	28	*25*	22
Total Variable Costs	***1289***	**1469**	***1883***	**2038**
Fixed Costs				
Labour	*357*	406	*459*	434
Contract	*144*	195	*184*	168
Machinery Depreciation	*181*	165	*212*	226
Other Machinery	*224*	216	*222*	216
Miscellaneous	*287*	265	*326*	294
Rent and Rental Equivalent	*245*	294	*352*	358
Total Fixed Costs	***1438***	**1541**	***1755***	**1696**
Net Farm Income	***90***	**-120**	***1071***	**758**
Farmer / Spouse Labour	*203*	173	*259*	250
Management and Investment Income (MII)	***-114***	**-293**	***813***	**508**
Farm Business Income (FBI)	***156***	**-90**	***1313***	**974**

3.7: LFA: Comparison by Profitability Quartiles

Note: This section of the report is based on low sample numbers and the results should therefore be treated with caution.

Table 3.6 presents the analysis of LFA farms by profitability quartiles based on performance by FBS per hectare and are determined by ranking farms according to FBI per hectare and grouping them (unweighted) to the upper 25%, middle 50% and lower 25%. In 2012/13, the average farm size in the upper quartile increased to 108ha compared to 97ha in 2011/12, whilst for the lower quartile, the average farm size decreased to 96ha compared to 124ha in 2011/12. The upper quartile achieved a higher total farm output (£3,779/ha) than the lower quartile (£2,812/ha); however this represents a substantial narrowing of the difference in output between the two quartile groups from 2011/12 to 2012/13. The lower quartile's total farm output increased by 27% (+£590/ha) compared to a decrease of 18% (-£851/ha) for the upper quartile. As in 2011/12, output from milk differs markedly between the two groups; however the variation has narrowed, with the lower quartile recording £2,199/ha from milk returns, compared to the upper quartile which returned £2,889/ha, a difference of £690/ha, compared to the difference in 2011/12 of £1,978/ha. It is interesting to note that the output from milk for the lower quartile increased by 34% (+£554/ha) compared to a 20% reduction in output from milk for the upper quartile (-£734/ha).

In 2012/13 the total variable costs for the lower quartile group increased by 51% to £1,661/ha; whilst the upper quartile's total variable costs decreased by 6% to £1,706/ha. Feed concentrates, vet and medicine, other livestock costs and fertiliser costs increased by 80% (+£464/ha), 26% (+£21/ha), 25% (+£52/ha) and 7% (+£8/ha) respectively for the lower quartile group; however, in sharp contrast, the upper quartile's cost of concentrates increased by less than 1% (+£6/ha), whilst vet and medicine, other livestock costs and fertilizer costs fell by 18% (-£25/ha), 12% (-£37/ha) and 8% (-£12/ha) respectively. It is noteworthy that the difference in total variable costs between the lower and upper quartiles has substantially reduced from £719/ha in 2011/12 to just £45 in 2012/13. Furthermore, the lower and upper quartile's total fixed costs in 2011/12 were £1,021/ha and £1,652/ha respectively.

Examining MII, the lower quartile shows that the average MII in 2012/13 is minus £528/ha compared to minus £133/ha in 2011/12, whilst for the upper quartile MII returns were £397/ha compared to £878/ha in 2011/12. In terms of FBI, the lower quartile achieved an FBI return of minus £233/ha, representing a decrease of £365/ha on 2011/12, whilst the upper quartile achieved an FBI return of £987/ha; a decrease of £396/ha on 2011/12 returns. At the average farm sizes for these groups, the lower and upper quartiles achieved FBI returns of minus £22,254 and £106,389 per farm respectively.

Table 3.6: Outputs, Inputs and Margins: LFA by Profitability Quartiles

LFA	Lower quartile		Upper quartile	
	11/12	12/13	*11/12*	12/13
Number of farms	*15*	16	*15*	16
Area (ha)	*124*	96	*97*	108
	£/ha		£/ha	
Output				
Milk	*1645*	2199	*3623*	2889
Calf	*99*	128	*224*	229
Lease Quota (net)	*0*	0	*0*	0
Other Dairy	*0*	0	*0*	1
Herd Replacement	*-235*	-338	*-311*	-302
Total Dairy Output	***1509***	**1989**	***3536***	**2817**
Other Livestock	*448*	515	*673*	682
Other	*266*	308	*420*	281
Total Farm Output	***2222***	**2812**	***4630***	**3779**
Variable Costs				
Home-grown Concentrates	*20*	35	*82*	37
Purchased Concentrates	*583*	1047	*1018*	1024
Coarse Fodder	*58*	53	*68*	97
Other Livestock Concentrates	*0*	0	*0*	0
Vet and Medicine	*82*	103	*138*	113
Other Livestock Costs	*205*	257	*308*	271
Seed	*9*	10	*12*	10
Fertiliser	*117*	125	*150*	138
Crop Protection	*7*	7	*16*	6
Other Crop Costs	*20*	25	*26*	11
Total Variable Costs	***1099***	**1661**	***1818***	**1706**
Fixed Costs				
Labour	*224*	291	*433*	355
Contract	*84*	127	*117*	100
Machinery Depreciation	*148*	207	*227*	173
Other Machinery	*158*	192	*237*	194
Miscellaneous	*228*	326	*348*	269
Rent and Rental Equivalent	*180*	233	*290*	270
Total Fixed Costs	***1021***	**1377**	***1652***	**1363**
Net Farm Income	***101***	**-226**	***1159***	**710**
Farmer / Spouse Labour	*234*	302	*281*	313
Management and Investment Income (MII)	***-133***	**-528**	***878***	**397**
Farm Business Income (FBI)	***132***	**-233**	***1383***	**987**

3.8: Further Analysis: Lowland and LFA by Region and Farm Size

The above sections have provided analysis for lowland and LFA dairy farms by size groupings and profitability quartiles. It is possible to present the data for lowland farms through further analysis that examines the data by regions and farm size groupings for each EU super region. The results of this analysis are presented in Tables **A1, A3, A5 and A6 in the Appendix**, albeit that where the number of farms by any one group is less than 10, these data have been withheld to preserve the statistical robustness of the data. It was only possible to provide meaningful results for LFA by Region and for some LFA size groups in the North on this basis of analysis due to sample size restrictions which are presented in Tables **A2 and A4 in the Appendix.**

3.9: Dairy Enterprise Results: Gross Margin for All Farms including Organic Farms

In the above sections, outputs, inputs and returns were presented for dairy farms on a per hectare basis, with results that included data from the dairy enterprise, plus other enterprises on the farm to produce overall farm results. In this and the following sections, results are presented that relate solely to the dairy enterprise and are reported to Gross Margin (GM) returns (total dairy output minus total variable costs).

Table 3.7 provides the dairy enterprise results for all farms and for conventional and organic farms as separate data. Examining the "all farms" results shows that between 2011/12 and 2012/13 the average number of cows increased by 2%, whilst average yield per cow decreased by 1.6%. Despite this yield reduction, the value of milk output increased by £25 per cow (+1%) due to an increase in average milk price of 0.8 pence per litre (ppl) from 28.2ppl to 29.0ppl. It is interesting to note that the average milk price received in 2008/09 was 26.8ppl, 24.4ppl in 2009/10 and in 2010/11 it was 25.4ppl (McHoul *et al,* 2012). Herd replacement costs increased from £228/cow to £231/cow. Variable costs increased by 12% (£117/cow) to a total of £1091/cow in 2012/13.

The increases in total output (+1.7%) and in variable costs (+12%) resulted in an overall drop in the GM of £82/cow (-7.8%) for 2012/13. Consequently, the average GM has fallen to 12.95ppl from 13.82ppl in 2011/12. Based on the average number of cows in 2012/13, the average GM for all farms is £148,298, representing a decrease on 2011/12 of 5.8% when the average GM was £157,387.

3.10: Dairy Enterprise Results: Gross Margin for Conventional and Organic Farms

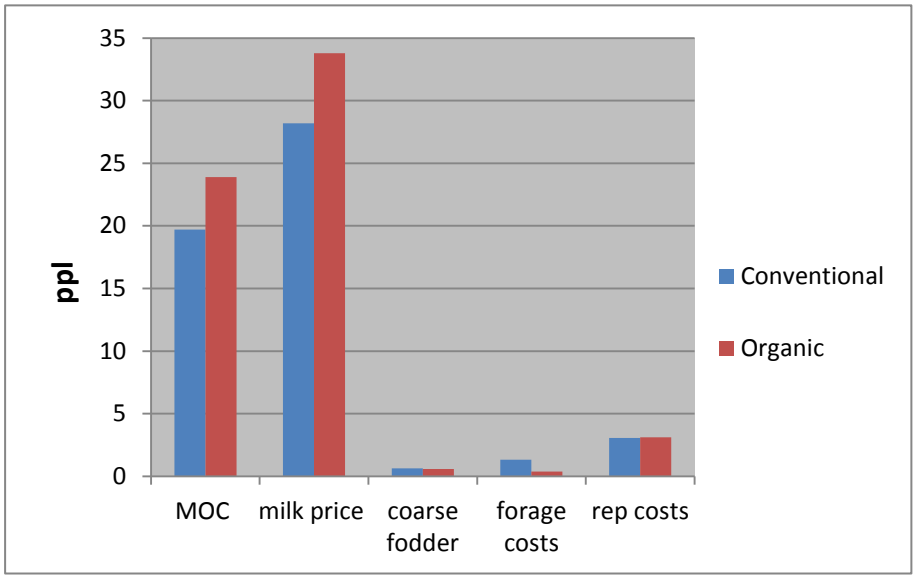
Studying the differences between conventional and organic farms in Table 3.7 shows that for the farms studied the average herd size in 2012/13 is 118 cows for organic farms compared to 154 cows for conventional farms. Although average milk yield for organic herds was lower, the milk price was higher helping to narrow the gap for total output between conventional and organic farms compared to the previous year.

With variable costs increasing across both groups, these figures equate to a drop in gross margin per cow for conventional herds and a small rise for organic herds, resulting in organic herds returning a higher total gross margin. This notable difference is in contrast to the 2011/12 results. However, on a herd basis, the conventional herds have a higher average total gross margin due to the larger herd size.

Table 3.7: Gross Margin Results for All Farms, Conventional and Organic

	All		Conventional		Organic	
	11/12	12/13	*11/12*	*12/13*	11/12	*12/13*
Number of farms	*297*	289	*257*	252	*40*	37
Average number cows	*149*	152	*151*	154	*116*	118
Average yield (litres)	*7648*	7528	*7700*	7579	*6322*	6183
Milk price (ppl)	*28.2*	29.0	*28.1*	28.9	*31.9*	33.8
	£/cow		£/cow		£/cow	
Output						
Milk	*2159*	2184	*2165*	2187	*2016*	2089
Calf	*98*	112	*98*	112	*96*	105
Lease Quota (net)	*0*	0	*0*	0	*0*	0
Other Dairy	*1*	1	*1*	2	*0*	0
Herd Replacement	*-228*	-231	*-229*	-233	*-200*	-193
Total Dairy Output	***2031***	**2066**	***2036***	**2068**	***1912***	**2001**
Variable costs						
Concentrates	*607*	690	*609*	693	*563*	611
Coarse Fodder	*35*	48	*35*	48	*37*	36
Vet and Medicine	*75*	79	*76*	80	*56*	62
Other Livestock Costs	*169*	176	*168*	174	*189*	220
Forage Costs	*88*	98	*91*	101	*22*	23
Total Variable Costs	***974***	**1091**	***978***	**1097**	***867***	**952**
Total Gross Margin	***1057***	**975**	***1057***	**972**	***1045***	**1050**

Figure 3.1: Key Gross Margin Components by Conventional and Organic Herds



As illustrated in Table 3.7, for the 2012/13 year in terms of GM per cow it is the organic farms that are, on average, the best performers and Figure 3.1 provides data that helps explain why this is:

- the superior milk price achieved by organic herds compared to conventional herds (+4.90ppl)
- concentrate feed costs that are on average £82/ organic cow lower than their conventional counterparts
- coarse fodder and forage costs per litre are lower for organic herds
- herd replacement cost per organic cow was £193/cow, compared to £233/cow for conventional cows

It should be noted that when considered on a pence per litre basis the lower yield achieved by organic cows eliminates the organic 'advantage' with respective figures of 3.12ppl and 3.07ppl for organic and conventional herds.

From this part of the report onwards when referring to data on a gross margin basis, unless otherwise stated, organic herd results are not included in the data presented.

3.11: Dairy Enterprise Results: Gross Margin for Lowland and LFA Farms

Table 3.8 provides the dairy enterprise results for lowland and LFA farms as separate data. Studying the differences between lowland and LFA dairy farms, reveals a familiar pattern, as highlighted in previous editions of this report whereby lowland herds achieve a higher yield, from a larger average herd size and sell milk at higher prices than their LFA counterparts. Both groups achieved higher milk prices in 2012/13, with increases on 2011/12 prices of 0.7ppl for lowland herds and 1.0ppl for LFA herds. Furthermore, the average milk yield decreased by 1.4% (112 litres) to 7,628 litres on the lowland farms in 2012/13 and by 2.4% (182 litres) to 7,272 litres in 2012/13 on LFA farms. Total variable costs in lowland production increased by £116/cow whilst in LFA production the costs increased by £136/cow to give almost identical variable costs per cow of £1,097 and £1,096 on lowland and LFA farms respectively. Consequently, decreases in GMs of £82/cow for lowland herds and £108/cow for LFA herds are shown. At the average herd sizes, in 2012/13, the total GM on lowland farms was £158,240 compared to £169,218 in 2011/12 and for LFA farms was £106,926 compared to £113,413 in 2011/12.

Table 3.8: Gross Margin Results for Lowland and LFA Farms

	Lowland		LFA	
	11/12	12/13	*11/12*	*12/13*
Number of farms	*202*	194	*55*	58
Average number cows	*158*	160	*117*	124
Average yield (litres)	*7740*	7628	*7454*	7272
Milk price (ppl)	*28.2*	28.9	*27.5*	28.5
	£/cow		£/cow	
Output				
Milk	*2183*	2206	*2051*	2072
Calf	*94*	109	*121*	133
Lease Quota (net)	*0*	0	*0*	0
Other Dairy	*2*	2	*0*	0
Herd Replacement	*-227*	-230	*-241*	-247
Total Dairy Output	***2053***	**2086**	***1931***	**1959**
Variable costs				
Concentrates	*608*	690	*613*	712
Coarse Fodder	*34*	48	*38*	48
Vet and Medicine	*77*	81	*71*	76
Other Livestock Costs	*170*	175	*152*	169
Forage Costs	*91*	103	*86*	91
Total Variable Costs	***981***	**1097**	***960***	**1096**
Total Gross Margin	***1071***	**989**	***971***	**863**

3.12: Dairy Enterprise Results: Influence of Herd Size on Lowland Herds

Gross margin results by three size categories for lowland farms are shown in Table 3.9 **(less than 80 cows = small; 80 to 130 cows = medium; greater than 130 cows = large)**. It is interesting to note that for almost all the key performance indicators, the same pattern occurs across all the three size groups over both years of data presented. That is, as the herd size increases, the average yield per cow, milk output per cow, total dairy output per cow, total variable costs per cow and total gross margin per cow all increase. For 2012/13, average yields per cow for the small, medium and large herd size groups are 6,480 lpc, 7,548 lpc and 7,749 lpc respectively, with the large herds outperforming the small herds by 1,269 lpc. This equates to a 20% difference between these two groups; however, it is a slight decrease on the 23% gap which occurred in 2011/12. The milk price received by the small size group of 27.8ppl is notably lower than the 28.1ppl received by medium size group and the 29.2ppl received by the large size group in 2012/13.

The 2012/13 data shows average total variable costs per cow for the small, medium and large size groups to be £915/cow, £1,030/cow and £1,128/cow respectively, resulting in respective total gross margins of £827/cow, £981/cow and £1,006/cow. As in 2011/12, the results show that the small size herds achieved the lowest GM per litre at 12.76ppl (13.44ppl in 2011/12), however the medium size herds at 13.00ppl (13.81ppl in 2011/12) achieved a slightly higher GM than the large size herds which achieved a GM of 12.98ppl (13.88ppl in 2011/12).

Table 3.9: Gross Margin Results Lowland by Herd Size

Lowland	< 80 cows		80 – 130 cows		>130 cows	
	11/12	12/13	*11/12*	12/13	*11/12*	12/13
Number of farms	*36*	44	*65*	52	*101*	98
Average number cows	*56*	58	*107*	109	*221*	217
Average yield (litres)	*6400*	6480	*7612*	7548	*7889*	7749
Milk price (ppl)	*27.1*	27.8	*27.5*	28.1	*28.5*	29.2
	£/cow		£/cow		£/cow	
Output						
Milk	*1733*	1799	*2090*	2122	*2247*	2261
Calf	*112*	130	*106*	121	*89*	104
Lease Quota (net)	*0*	0	*0*	0	*0*	0
Other Dairy	*0*	6	*1*	1	*2*	2
Herd Replacement	*-185*	-192	*-213*	-233	*-234*	-233
Total Dairy Output	***1661***	**1742**	***1985***	**2011**	***2104***	**2133**
Variable costs						
Concentrates	*473*	534	*551*	633	*635*	717
Coarse Fodder	*36*	32	*35*	43	*34*	51
Vet and Medicine	*65*	70	*72*	77	*79*	82
Other Livestock Costs	*149*	184	*171*	171	*172*	175
Forage Costs	*78*	95	*104*	106	*89*	103
Total Variable Costs	***802***	**915**	***933***	**1030**	***1009***	**1128**
Total Gross Margin	***860***	**827**	***1051***	**981**	***1095***	**1006**

3.13: Dairy Enterprise Results: Influence of Herd Size on LFA Herds

Note: This section of the report is based on low sample numbers and the results should therefore be treated with caution.

Table 3.10 shows the results of the gross margin analysis of LFA farms by herd size **(less than 80 cows = small; 80 to 130 cows = medium; greater than 130 cows = large)**. Examining the small, medium and large herd sizes shows that between 2011/12 to 2012/13, the average number of cows decreased by 6% to 55 cows, 2.4% to 107 cows and 2.5% to 218 cows for the three groups respectively. The average yield for the small size group has decreased by around 500lpc; for the medium size group it has decreased by around 250lpc and it has remained at about the same level for the large size group. As in 2011/12, all herd sizes received higher milk prices than in the previous year, equating to a 0.7ppl increase for the small size group, a 0.8ppl increase for the medium size group and 1.1ppl for the large size group in 2012/13.

LFA dairy farms underachieve when compared to their lowland counterparts for the small and large size groups when comparing milk yield, milk output, total dairy output and gross margin for both 2011/12 and 2012/13. For the medium size group LFA herds received both a higher milk price (+0.2ppl) and higher milk output (+£18/cow) in 2012/13.

The increase in variable costs per cow was higher with increasing herd size, this being particularly noticeable for concentrates where the percentage increase per cow was 3% (+£17),

8% (+£58) and 34% (+£181) for the small, medium and large herd sizes respectively.

The decrease in GM between the two years is 20% (-£187/cow) for the small size group, 12% (-£110/cow) for the medium size group and 12% (-£126/cow) for the large size group. With exception of the GM for 2011/12 for the small size group, the GMs for 2011/12 and 2012/13 for the LFA herds are lower than that of the lowland herds of the respective size groups.

Table 3.10: Gross Margin Results LFA by Herd Size

LFA	< 80 cows		80 – 130 cows		>130 cows	
	11/12	12/13	*11/12*	12/13	*11/12*	12/13
Number of farms	*19*	16	*24*	25	*12*	17
Average number cows	*58*	55	*110*	107	*226*	218
Average yield (litres)	*6736*	6243	*7811*	7550	*7287*	7290
Milk price (ppl)	*26.6*	27.3	*27.5*	28.3	*27.8*	28.9
	£/cow		£/cow		£/cow	
Output						
Milk	*1793*	1706	*2150*	2140	*2028*	2105
Calf	*132*	134	*115*	123	*123*	141
Lease Quota (net)	*0*	0	*0*	0	*0*	0
Other Dairy	*0*	0	*0*	0	*0*	0
Herd Replacement	*-187*	-244	*-277*	-282	*-217*	-219
Total Dairy Output	***1738***	**1596**	***1989***	**1982**	***1934***	**2027**
Variable costs						
Concentrates	*498*	515	*718*	776	*525*	706
Coarse Fodder	*24*	28	*41*	67	*40*	36
Vet and Medicine	*57*	53	*79*	82	*67*	77
Other Livestock Costs	*146*	174	*159*	174	*146*	163
Forage Costs	*75*	76	*97*	97	*76*	90
Total Variable Costs	***800***	**845**	***1093***	**1197**	***854***	**1073**
Total Gross Margin	***938***	**751**	***896***	**786**	***1080***	**954**

3.14: Dairy Enterprise Results: Lowland Herds by Performance Groups

Results measured by gross margin performance for lowland farms are presented in Table 3.11. The results are shown for the upper and lower quartiles as measured by gross margin per cow and are determined by ranking farms according to FBI per hectare and grouping them (unweighted) to the upper 25%, middle 50% and lower 25%. A comparison of the two quartile groups reveals striking differences with respect to two key physical performance indicators; that is, the differences between average herd size and average yields. The average herd size of the upper quartile is 165.5 cows compared to the lower quartile's average herd size of 132.7 cows. Average milk yield for the upper quartile is 8,519 lpc, whilst for the lower quartile it is 6,241 lpc; a difference of 2,278 lpc between the two groups. In 2011/12 the difference in milk price was 1.5ppl (upper quartile 29.0ppl; lower quartile 27.5ppl) however, for 2012/13, it narrowed to 1.1ppl (upper quartile 29.4ppl; lower quartile 28.3ppl).

The quartiles recorded increased herd replacement costs per cow of +£12/cow and +£3/cow for the lower and upper quartiles respectively, compared to 2011/12. However, the familiar pattern emerged whereby the upper quartile incurred lower replacement costs than the lower quartile. Total variable costs for both groups increased; the lower quartile costs rose by 18% (+£162/cow) whilst the upper quartile costs increased by 13% (+£132/cow).

It is interesting to report the difference in the rates of conversion of concentrates to milk between the two quartile groups and also note the change from 2011/12 to 2012/13. An analysis of the data in Table 3.11 reveals that in 2011/12 the conversion rate of concentrates to milk was 9.0ppl for the lower quartile and 7.0ppl for the upper quartile. In 2012/13, the conversion rate increased to 10.4ppl for the lower quartile and to 8.2ppl for the upper quartile.

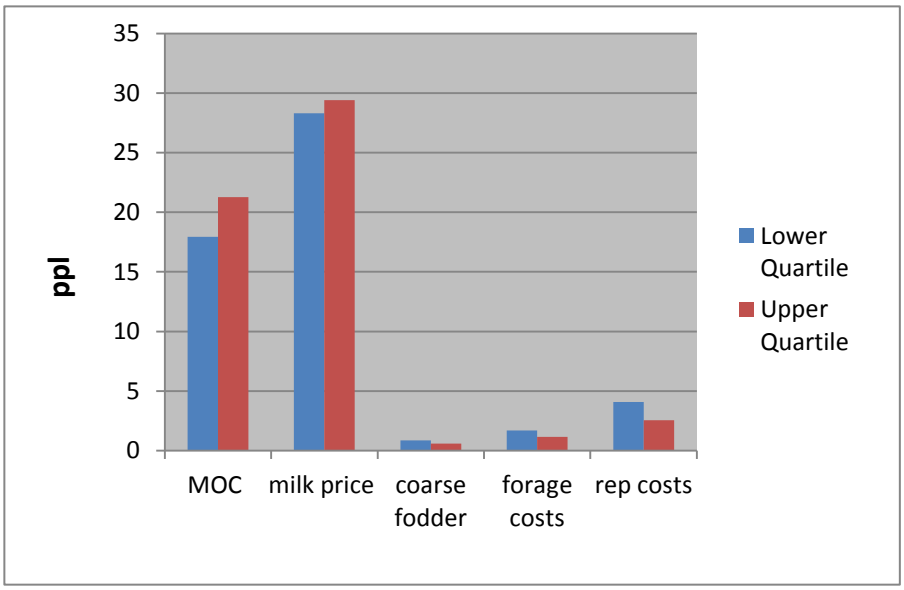
Gross margin results considered per litre for the lower quartile equal 8.9ppl compared to 10.2ppl in 2011/12 and for the upper quartile equal 15.1ppl compared to 16.4ppl in 2011/12. This analysis of upper and lower quartile groups reveals a continuation of previous year's findings which show that the larger herds with their high-input, high-output systems achieve the higher GM, with the main factor being the higher milk price attained from a superior quality product and / or better utilisation of the market.

Figure 3.2 reveals some key differences between lowland herd profitability quartiles by analysis of some key gross margin components. Firstly, the upper quartile's higher milk price (+1.10ppl), coupled with, as shown in Table 3.11, its higher yield per cow (+2,278lpc), more than compensates for the higher performer's higher feed costs (+£49/cow), leading to a margin over concentrate result of 21.26ppl for the upper quartile, compared to 17.93ppl for the lower quartile. The upper quartile also compares well with the lower quartile in terms of costs for coarse fodder, forage costs and replacement costs, achieving results of 0.58ppl, 1.15ppl and 2.55ppl respectively, compared to the lower quartile's results of 0.85ppl, 1.68ppl and 4.09ppl.

Table 3.11: Gross Margin Results for Lowland by Profitability Quartiles

Lowland	Lower Quartile		Upper Quartile	
	11/12	12/13	*11/12*	*12/13*
Number of farms	*51*	49	*51*	49
Average number cows	*133*	133	*173*	166
Average yield (litres)	*6077*	6241	*8706*	8519
Milk price (ppl)	*27.5*	28.3	*29.0*	29.4
	£/cow		£/cow	
Output				
Milk	*1670*	1767	*2523*	2508
Calf	*79*	93	*104*	112
Lease Quota (net)	*0*	0	*0*	0
Other Dairy	*0*	0	*0*	3
Herd Replacement	*-243*	-255	*-214*	-217
Total Dairy Output	***1506***	**1604**	***2413***	**2405**
Variable costs				
Concentrates	*545*	648	*607*	697
Coarse Fodder	*35*	53	*34*	49
Vet and Medicine	*67*	71	*84*	88
Other Livestock Costs	*159*	170	*169*	187
Forage Costs	*78*	105	*93*	98
Total Variable Costs	***885***	**1047**	***987***	**1119**
Total Gross Margin	***621***	**557**	***1426***	**1287**

Figure 3.2: Key Gross Margin Components by Profitability Quartiles: Lowland Herds



3.15: Dairy Enterprise Results: LFA Herds by Performance Groups

Note: This section of the report is based on low sample numbers and the results should therefore be treated with caution.

The analysis by performance quartiles for lowland herds, measured by gross margin per cow and outlined in Section 3.14, highlighted larger herd size, higher average yield and higher milk price for the upper quartile compared to the lower quartile in 2012/13 as in the previous year and as such are the main performance drivers. Examining Table 3.12 which shows the lower and upper quartile results for 2011/12 and 2012/13, reveals that the pattern noted for lowland herds is repeated for LFA herds. The average herd size and average milk yield for the upper quartile in 2012/13 are 66 cows and 1,900lpc greater than for the lower quartile. The difference in average milk price between the upper quartile and the lower quartile is 1.8ppl. When combined with the average yield, milk outputs of £2,263/cow and £1,609/cow for the upper and lower quartiles respectively are produced. Herd replacement costs are lower for the upper performance group at -£164/cow compared to -£278/cow for the lower quartile. The upper quartile incurred total variable costs that are £88/cow greater than the lower quartile. The upper quartile's high-output, high-input system produced a GM of £1,181/cow, compared to the lower quartile's characteristic low-output, low-input system which produced a GM of £444/cow in 2012/13.

Figure 3.3: Key Gross Margin Components by Profitability Quartiles: LFA Herds

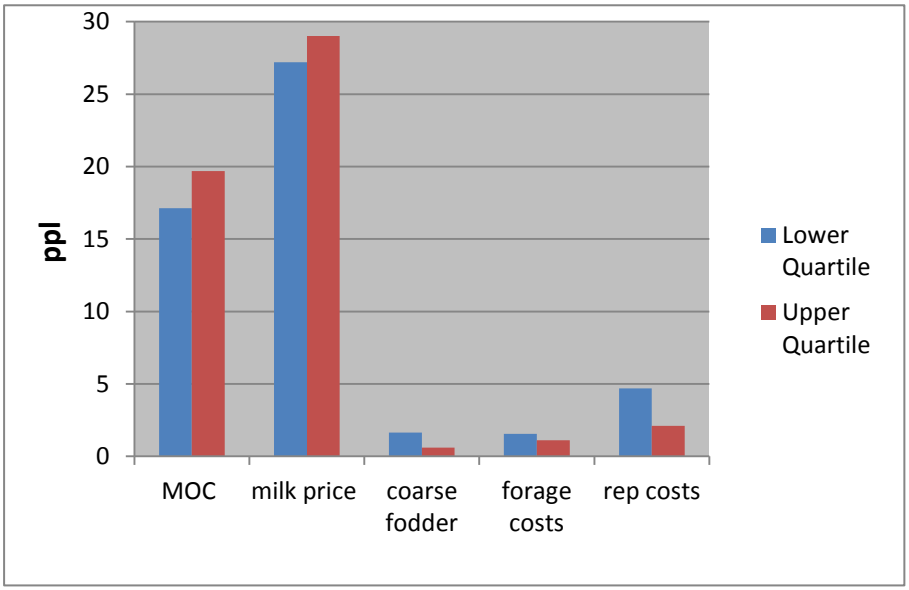


Figure 3.3 reveals some key differences between LFA herd profitability quartiles by analysis of some key gross margin components. A similar pattern has emerged to that found for the lowland profitability quartiles with the upper quartile achieving more competitive results than the lower quartile regarding margin over concentrates, milk price, coarse fodder and forage costs, plus herd replacement costs. However, closer analysis shows that despite the LFA group's wider difference in milk price between its upper and lower quartiles (+1.80ppl) compared to the lowland group's (+1.10ppl), this did not translate into a similar difference regarding margin over concentrates. This is due to the upper quartile's significantly higher yield per cow (+1902lpc) which more than offsets this groups higher concentrate feed costs (+£128/cow).

Table 3.12: Gross Margin Results for LFA by Profitability Quartiles

LFA	Lower Quartile		Upper Quartile	
	11/12	12/13	*11/12*	*12/13*
Number of farms	*14*	15	*14*	15
Average number cows	*113*	87	*161*	153
Average yield (litres)	*6517*	5915	*8387*	7817
Milk price (ppl)	*27.0*	27.2	*28.1*	29.0
	£/cow		£/cow	
Output				
Milk	*1757*	1609	*2356*	2263
Calf	*103*	111	*143*	167
Lease Quota (net)	*0*	0	*0*	0
Other Dairy	*0*	0	*0*	0
Herd Replacement	*-321*	-278	*-187*	-164
Total Dairy Output	***1540***	**1442**	***2313***	**2267**
Variable costs				
Concentrates	*601*	596	*654*	724
Coarse Fodder	*54*	97	*26*	47
Vet and Medicine	*66*	55	*82*	69
Other Livestock Costs	*141*	158	*166*	160
Forage Costs	*85*	92	*78*	86
Total Variable Costs	***947***	**998**	***1006***	**1086**
Total Gross Margin	***593***	**444**	***1306***	**1181**

3.16: Further Analysis: Dairy Enterprise Results for Lowland and LFA by Region and Herd Size

The above sections have provided analysis for lowland and LFA dairy herds on a gross margin basis by herd size groupings and profitability quartiles. It is possible to present the data for lowland farms through further analysis that examines the data by regions and farm size groupings for each EU super region. The results of this analysis are presented in Tables **A7, A9, A11 and A12 in the Appendix**, albeit that where the number of farms by any one group is less than 10, these data have been withheld to preserve the statistical robustness of the data. It was only possible to provide meaningful results for LFA by Region and for some LFA size groups in the North on this basis of analysis due to sample size restrictions which are presented in Tables **A8 and A10 in the appendix.**

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Glossary

Output: Other Livestock is comprised of sales of non-dairy livestock and livestock products adjusted for valuation changes plus the value of produce used on the farm and consumed in the farmhouse or by the workers, less livestock purchases. Miscellaneous livestock receipts are also included.

Output: Other is the sales of crops adjusted for valuation changes, plus the value of produce used on the farm (other than forage crops and straw) and produce consumed in the farmhouse or by the workers. Income from land let and buildings let, hirework, non-allocated grants e.g. for environmental schemes, profit on resale of purchased agricultural produce and other miscellaneous farm income including the change in valuation of cultivations is also included.

Other livestock costs include livestock haulage, marketing charges, AI charges, straw and woodshavings for bedding and dairy sundries.

Other crop costs include silage bags, twine, all marketing costs including crop haulage, purchase of standing crops, soil analysis and potato sacks.

Labour is comprised of the gross cost of regular paid employees including an allowance for perquisites together with unpaid family labour (other than the farmer and spouse) manual labour.

Machinery depreciation is calculated using the current cost accounting method whereby each item of equipment is revalued by an index prior to the depreciation calculation.

Rent and Rental Equivalent consist of gross rent, imputed rent on the net cost of the tenant's own improvements, drainage rates and for owner-occupied land a rental value based on what a tenant would be paying for similar land with an equal length of occupancy.

Miscellaneous costs include water charges, vehicle tax, insurance, professional fees, bank commission, telephone charges, subscriptions, office expenses and pest control, general repairs.

Net Farm Income (NFI) is total output less total inputs as defined above. It represents the reward to the farmer and spouse for their own manual labour, management and a return on tenant's capital.

Farmer's and spouse's manual labour is the estimated value of their manual labour.

Management and Investment Income (MII) is Net Farm Income less the allowance made for the farmer's and spouse's manual labour. It represents the reward for management and a return on tenant's capital. MII therefore represents the return to management after all costs have been deducted, including the imputed cost of all unpaid manual labour and a notional rent on owner occupied land and buildings.

Farm Business Income (FBI) represents the return to all unpaid labour (farmers, spouses and others with an entrepreneurial interest in the farm business) and to all their capital invested in the farm business including land and farm buildings. It is defined as Total Farm Output (TFO) 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, single farm payment, agri-environmental payments, other grants and subsidies, miscellaneous receipts; C is defined as variable costs plus fixed costs. [*For 2006/07 the definition of FBI included the profit / loss on sale of assets as part of the total farm output*]

Total Gross Margin, presented for the dairy enterprise results, is total dairy output minus total variable costs.

Table A.1: Outputs, Inputs and Margins for Lowland by EU Super Region

Lowland	North		East		West	
	11/12	12/13	*11/12*	12/13	*11/12*	12/13
Number of farms	*57*	58	*55*	49	*137.15*	137.28
Area (ha)	*1294*	120	*193*	203	*103*	103
	£/ha		£/ha		£/ha	
Output						
Milk	*2840*	3092	*1673*	1879	*2473*	2515
Calf	*112*	135	*75*	91	*111*	131
Lease Quota (net)	*0*	0	*0*	0	*0*	0
Other Dairy	*0*	0	*3*	2	*2*	3
Herd Replacement	*-311*	-361	*-168*	-165	*-253*	-266
Total Dairy Output	***2641***	**2866**	***1582***	**1807**	***2333***	**2383**
Other Livestock	*624*	683	*398*	376	*561*	572
Other	*459*	406	*840*	756	*553*	468
Total Farm Output	***3725***	**3955**	***2821***	**2939**	***3447***	**3423**
Variable Costs						
Home-grown Concentrates	*76*	103	*55*	60	*70*	72
Purchased Concentrates	*900*	1120	*539*	654	*705*	829
Coarse Fodder	*72*	110	*55*	73	*39*	49
Other Livestock Concentrates	*0*	0	*6*	7	*20*	24
Vet and Medicine	*123*	135	*75*	81	*97*	104
Other Livestock Costs	*274*	289	*177*	190	*239*	272
Seed	*26*	31	*42*	44	*38*	42
Fertiliser	*150*	151	*117*	126	*122*	154
Crop Protection	*26*	30	*46*	55	*36*	43
Other Crop Costs	*18*	23	*25*	24	*21*	23
Total Variable Costs	***1665***	**1993**	***1136***	**1314**	***1386***	**1610**
Fixed Costs						
Labour	*350*	361	*344*	429	*373*	391
Contract	*162*	161	*144*	151	*161*	159
Machinery Depreciation	*186*	207	*155*	163	*190*	207
Other Machinery	*207*	213	*204*	211	*202*	225
Miscellaneous	*276*	294	*258*	274	*278*	294
Rent and Rental Equivalent	*263*	280	*241*	261	*300*	325
Total Fixed Costs	***1444***	**1515**	***1346***	**1489**	***1503***	**1602**
Net Farm Income	***615***	**446**	***338***	**136**	***558***	**211**
Farmer / Spouse Labour	*204*	221	*149*	141	*214*	222
Management and Investment Income (MII)	***412***	**225**	***190***	**-5**	***344***	**-11**
Farm Business Income (FBI)	***691***	**526**	***420***	**218**	***720***	**372**

Table A.2: Outputs, Inputs and Margins for LFA by EU Super Region

LFA	North		East		West	
	11/12	12/13	*11/12*	12/13	*11/12*	12/13
Number of farms	*34*	37	*Ins. data*	11	*16*	17
Area (ha)	*122*	122		125	*92*	100
	£/ha		£/ha		£/ha	
Output						
Milk	*1870*	2001		2494	*2320*	2417
Calf	*105*	117		151	*143*	197
Lease Quota (net)	*0*	0		0	*0*	0
Other Dairy	*0*	0		0	*0*	0
Herd Replacement	*-253*	-266		-231	*-213*	-260
Total Dairy Output	***1722***	**1853**		**2414**	***2250***	**2355**
Other Livestock	*595*	599		467	*436*	432
Other	*322*	299		221	*359*	315
Total Farm Output	***2640***	**2751**		**3102**	***3045***	**3102**
Variable Costs						
Home-grown Concentrates	*46*	54		17	*40*	34
Purchased Concentrates	*683*	844		956	*583*	848
Coarse Fodder	*49*	64		51	*44*	70
Other Livestock Concentrates	*0*	0		0	*0*	0
Vet and Medicine	*92*	100		99	*74*	92
Other Livestock Costs	*194*	217		271	*193*	230
Seed	*9*	8		16	*12*	10
Fertiliser	*125*	120		111	*106*	151
Crop Protection	*8*	8		10	*9*	8
Other Crop Costs	*18*	18		14	*10*	13
Total Variable Costs	***1224***	**1433**		**1545**	***1072***	**1456**
Fixed Costs						
Labour	*259*	271		287	*279*	317
Contract	*78*	95		94	*102*	126
Machinery Depreciation	*155*	171		214	*175*	164
Other Machinery	*172*	178		187	*143*	167
Miscellaneous	*209*	232		306	*289*	286
Rent and Rental Equivalent	*165*	172		251	*271*	281
Total Fixed Costs	***1038***	**1119**		**1339**	***1259***	**1340**
Net Farm Income	***378***	**198**		**219**	***713***	**305**
Farmer / Spouse Labour	*224*	238		281	*318*	308
Management and Investment Income (MII)	***153***	**-39**		**-62**	***396***	**-3**
Farm Business Income (FBI)	***552***	**343**		**310**	***929***	**466**

Table A.3: Outputs, Inputs and Margins: Lowland (North) by EU Farm Size

Lowland (North)	< 60 ha		60 – 120 ha		>120 ha	
	11/12	12/13	*11/12*	12/13	*11/12*	12/13
Number of farms	*Ins. data*	Ins. data	*23*	24	*26*	26
Area (ha)			*85*	89	*183*	166
	£/ha		£/ha		£/ha	
Output						
Milk			*3667*	3810	*2571*	2801
Calf			*182*	201	*84*	102
Lease Quota (net)			*0*	0	*0*	0
Other Dairy			*0*	0	*0*	0
Herd Replacement			*-433*	-482	*-270*	-308
Total Dairy Output			***3416***	**3529**	***2386***	**2596**
Other Livestock			*700*	771	*602*	651
Other			*360*	312	*504*	451
Total Farm Output			***4476***	**4613**	***3491***	**3698**
Variable Costs						
Home-grown Concentrates			*60*	75	*86*	121
Purchased Concentrates			*1123*	1345	*830*	1033
Coarse Fodder			*119*	144	*57*	98
Other Livestock Concentrates			*0*	0	*0*	0
Vet and Medicine			*137*	151	*119*	129
Other Livestock Costs			*359*	393	*246*	242
Seed			*25*	26	*27*	35
Fertiliser			*152*	165	*147*	145
Crop Protection			*23*	26	*28*	34
Other Crop Costs			*20*	28	*16*	19
Total Variable Costs			***2018***	**2354**	***1557***	**1855**
Fixed Costs						
Labour			*353*	387	*362*	366
Contract			*167*	186	*162*	152
Machinery Depreciation			*202*	223	*178*	200
Other Machinery			*213*	221	*202*	209
Miscellaneous			*334*	340	*250*	268
Rent and Rental Equivalent			*325*	316	*242*	267
Total Fixed Costs			***1593***	**1673**	***1397***	**1462**
Net Farm Income			***865***	**586**	***538***	**381**
Farmer / Spouse Labour			*344*	312	*128*	152
Management and Investment Income (MII)			***521***	**274**	***410***	**229**
Farm Business Income (FBI)			***961***	**674**	***604***	**460**

Table A.4: Outputs, Inputs and Margins: LFA (North) by EU Farm Size

LFA (North)	< 60 ha		60 – 120 ha		>120 ha	
	11/12	12/13	*11/12*	12/13	*11/12*	12/13
Number of farms	*Ins. data*	Ins. data	*13*	14	*13*	15
Area (ha)			*95*	99	*178*	184
	£/ha		£/ha		£/ha	
Output						
Milk			*2563*	2737	*1513*	1614
Calf			*125*	164	*87*	91
Lease Quota (net)			*0*	0	*0*	0
Other Dairy			*0*	1	*0*	0
Herd Replacement			*-336*	-358	*-209*	-205
Total Dairy Output			***2352***	**2543**	***1392***	**1500**
Other Livestock			*631*	635	*595*	587
Other			*445*	405	*237*	220
Total Farm Output			***3429***	**3583**	***2224***	**2307**
Variable Costs						
Home-grown Concentrates			*75*	107	*36*	31
Purchased Concentrates			*870*	1089	*586*	727
Coarse Fodder			*38*	46	*56*	75
Other Livestock Concentrates			*0*	0	*0*	0
Vet and Medicine			*122*	120	*80*	92
Other Livestock Costs			*287*	283	*140*	173
Seed			*11*	12	*8*	6
Fertiliser			*155*	155	*109*	104
Crop Protection			*13*	14	*6*	6
Other Crop Costs			*33*	30	*12*	13
Total Variable Costs			***1604***	**1856**	***1033***	**1225**
Fixed Costs						
Labour			*321*	340	*243*	255
Contract			*124*	118	*54*	75
Machinery Depreciation			*169*	213	*140*	140
Other Machinery			*240*	237	*136*	140
Miscellaneous			*319*	327	*147*	164
Rent and Rental Equivalent			*182*	192	*155*	159
Total Fixed Costs			***1355***	**1427**	***875***	**933**
Net Farm Income			***470***	**301**	***316***	**149**
Farmer / Spouse Labour			*294*	306	*159*	161
Management and Investment Income (MII)			***176***	**-6**	***157***	**-13**
Farm Business Income (FBI)			***624***	**475**	***507***	**287**

Table A.5: Outputs, Inputs and Margins: Lowland (East) by EU Farm Size

Lowland (East)	< 60 ha		60 – 120 ha		>120 ha	
	11/12	12/13	*11/12*	12/13	*11/12*	12/13
Number of farms	*Ins. data*	Ins. data	*12*	11	*39*	35
Area (ha)			*84*	83	*250*	246
	£/ha		£/ha		£/ha	
Output						
Milk			*1922*	2029	*1625*	1854
Calf			*131*	187	*68*	83
Lease Quota (net)			*0*	0	*0*	0
Other Dairy			*0*	0	*3*	2
Herd Replacement			*-235*	-183	*-157*	-162
Total Dairy Output			***1819***	**2033**	***1539***	**1777**
Other Livestock			*379*	354	*397*	374
Other			*619*	545	*874*	777
Total Farm Output			***2817***	**2933**	***2810***	**2929**
Variable Costs						
Home-grown Concentrates			*14*	34	*60*	61
Purchased Concentrates			*613*	717	*520*	645
Coarse Fodder			*51*	29	*55*	75
Other Livestock Concentrates			*1*	0	*6*	8
Vet and Medicine			*70*	70	*75*	81
Other Livestock Costs			*264*	234	*164*	184
Seed			*19*	21	*44*	46
Fertiliser			*106*	96	*117*	128
Crop Protection			*14*	14	*50*	60
Other Crop Costs			*16*	14	*26*	25
Total Variable Costs			***1168***	**1230**	***1118***	**1313**
Fixed Costs						
Labour			*283*	320	*354*	439
Contract			*134*	162	*144*	148
Machinery Depreciation			*165*	193	*153*	159
Other Machinery			*164*	168	*208*	214
Miscellaneous			*328*	354	*248*	265
Rent and Rental Equivalent			*205*	215	*244*	262
Total Fixed Costs			***1279***	**1412**	***1351***	**1488**
Net Farm Income			***369***	**291**	***341***	**128**
Farmer / Spouse Labour			*332*	327	*112*	117
Management and Investment Income (MII)			***37***	**-36**	***228***	**11**
Farm Business Income (FBI)			***474***	**368**	***427***	**210**

Table A.6: Outputs, Inputs and Margins: Lowland (West) by EU Farm Size

Lowland (West)	< 60 ha		60 – 120 ha		>120 ha	
	11/12	12/13	*11/12*	12/13	*11/12*	12/13
Number of farms	*20*	17	*40*	44	*43*	42
Area (ha)	*44*	46	*89*	87	*212*	214
	£/ha		£/ha		£/ha	
Output						
Milk	*2915*	2884	*2897*	2725	*2296*	2411
Calf	*176*	205	*128*	165	*100*	113
Lease Quota (net)	*0*	0	*0*	0	*0*	0
Other Dairy	*2*	14	*1*	2	*3*	2
Herd Replacement	*-297*	-327	*-294*	-287	*-236*	-253
Total Dairy Output	***2795***	**2776**	***2731***	**2605**	***2163***	**2273**
Other Livestock	*761*	673	*636*	651	*520*	536
Other	*268*	248	*324*	320	*652*	538
Total Farm Output	***3825***	**3697**	***3692***	**3576**	***3335***	**3347**
Variable Costs						
Home-grown Concentrates	*51*	26	*43*	50	*80*	83
Purchased Concentrates	*879*	1006	*828*	878	*650*	798
Coarse Fodder	*112*	109	*61*	87	*26*	30
Other Livestock Concentrates	*25*	12	*1*	1	*26*	33
Vet and Medicine	*112*	126	*106*	112	*93*	99
Other Livestock Costs	*316*	363	*260*	290	*225*	258
Seed	*25*	26	*32*	39	*41*	44
Fertiliser	*169*	191	*126*	142	*116*	156
Crop Protection	*10*	14	*16*	22	*44*	53
Other Crop Costs	*24*	27	*24*	28	*20*	20
Total Variable Costs	***1724***	**1900**	***1498***	**1648**	***1321***	**1576**
Fixed Costs						
Labour	*196*	219	*364*	344	*390*	421
Contract	*133*	157	*191*	196	*153*	145
Machinery Depreciation	*259*	245	*226*	234	*173*	195
Other Machinery	*254*	261	*189*	206	*202*	230
Miscellaneous	*374*	363	*331*	333	*252*	275
Rent and Rental Equivalent	*320*	356	*309*	317	*296*	326
Total Fixed Costs	***1536***	**1601**	***1610***	**1629**	***1465***	**1592**
Net Farm Income	***565***	**195**	***584***	**300**	***549***	**180**
Farmer / Spouse Labour	*757*	722	*314*	360	*136*	135
Management and Investment Income (MII)	***-192***	**-527**	***269***	**-61**	***413***	**45**
Farm Business Income (FBI)	***725***	**390**	***774***	**466**	***701***	**336**

Table A.7: Gross Margin Results for Lowland by EU Super Region

Lowland	North		East		West	
	11/12	12/13	*11/12*	*12/13*	11/12	*12/13*
Number of farms	*55*	56	*50*	42	*97*	96
Average number cows	*169*	166	*150*	163	*156*	155
Average yield (litres)	*7758*	7792	*7621*	7992	*7784*	7348
Milk price (ppl)	*28.0*	29.0	*27.7*	28.6	*28.6*	29.0
	£/cow		£/cow		£/cow	
Output						
Milk	*2176*	2263	*2108*	2283	*2223*	2132
Calf	*86*	99	*94*	110	*99*	114
Lease Quota (net)	*0*	0	*0*	0	*0*	0
Other Dairy	*0*	0	*4*	2	*2*	3
Herd Replacement	*-237*	-261	*-211*	-201	*-227*	-224
Total Dairy Output	***2025***	**2102**	***1994***	**2194**	***2097***	**2024**
Variable costs						
Concentrates	*615*	742	*625*	727	*597*	638
Coarse Fodder	*42*	65	*43*	62	*26*	31
Vet and Medicine	*80*	84	*81*	90	*73*	74
Other Livestock Costs	*170*	168	*178*	190	*167*	172
Forage Costs	*93*	98	*86*	97	*92*	109
Total Variable Costs	***1001***	**1157**	***1013***	**1165**	***955***	**1025**
Total Gross Margin	***1024***	**945**	***982***	**1029**	***1142***	**1000**

Table A.8: Gross Margin Results for LFA by EU Super Region

LFA	North		East		West	
	11/12	12/13	*11/12*	*12/13*	11/12	*12/13*
Number of farms	*34*	34	*Ins. data*	Ins. data	*15*	15
Average number cows	*110*	111			*120*	136
Average yield (litres)	*7533*	7534			*6750*	6598
Milk price (ppl)	*27.4*	28.2			*27.4*	28.5
	£/cow		£/cow		£/cow	
Output						
Milk	*2064*	2124			*1847*	1883
Calf	*116*	124			*113*	152
Lease Quota (net)	*0*	0			*0*	0
Other Dairy	*0*	0			*0*	0
Herd Replacement	*-279*	-292			*-171*	-201
Total Dairy Output	***1901***	**1957**			***1788***	**1834**
Variable costs						
Concentrates	*665*	762			*440*	611
Coarse Fodder	*43*	59			*29*	45
Vet and Medicine	*80*	85			*50*	63
Other Livestock Costs	*158*	177			*114*	137
Forage Costs	*94*	90			*71*	94
Total Variable Costs	***1040***	**1173**			***705***	**949**
Total Gross Margin	***861***	**784**			***1084***	**885**

Table A.9: Gross Margin Results: Lowland (North) by Herd Size

Lowland (North)	< 80 cows		80 – 130 cows		>130 cows	
	11/12	12/13	*11/12*	*12/13*	11/12	*12/13*
Number of farms	*Ins. data*	Ins. data	*13*	12	*34*	36
Average number cows			*108*	108	*208*	198
Average yield (litres)			*7311*	7472	*7908*	7895
Milk price (ppl)			*27.5*	28.0	*28.2*	29.2
	£/cow		£/cow		£/cow	
Output						
Milk			*2012*	2091	*2230*	2307
Calf			*104*	90	*83*	99
Lease Quota (net)			*0*	0	*0*	0
Other Dairy			*0*	0	*0*	0
Herd Replacement			*-271*	-279	*-235*	-260
Total Dairy Output			***1844***	**1902**	***2077***	**2146**
Variable costs						
Concentrates			*560*	702	*634*	757
Coarse Fodder			*31*	52	*45*	69
Vet and Medicine			*71*	84	*82*	84
Other Livestock Costs			*197*	170	*168*	168
Forage Costs			*112*	90	*90*	98
Total Variable Costs			***971***	**1098**	***1019***	**1176**
Total Gross Margin			***873***	**804**	***1058***	**970**

Table A.10: Gross Margin Results: LFA (North) by Herd Size

LFA (North)	< 80 cows		80 – 130 cows		>130 cows	
	11/12	12/13	*11/12*	*12/13*	11/12	*12/13*
Number of farms	*13*	11	*15*	14	*Ins. data*	Ins. data
Average number cows	*58*	*55*	*113*	109		
Average yield (litres)	*7128*	*6610*	*7846*	7887		
Milk price (ppl)	*26.7*	27.2	*27.14*	28.2		
	£/cow		£/cow		£/cow	
Output						
Milk	*1900*	1796	*2149*	2226		
Calf	*126*	103	*106*	107		
Lease Quota (net)	*0*	0	*0*	0		
Other Dairy	*0*	0	*0*	1		
Herd Replacement	*-233*	-289	*-337*	-354		
Total Dairy Output	***1794***	**1611**	***1919***	**1980**		
Variable costs						
Concentrates	*541*	559	*768*	822		
Coarse Fodder	*20*	22	*42*	80		
Vet and Medicine	*67*	62	*87*	94		
Other Livestock Costs	*158*	194	*156*	189		
Forage Costs	*90*	84	*102*	97		
Total Variable Costs	***877***	**922**	***1155***	**1282**		
Total Gross Margin	***917***	**689**	***764***	**697**		

Table A.11: Gross Margin Results: Lowland (East) by Herd Size

Lowland (East)	< 80 cows		80 – 130 cows		>130 cows	
	11/12	12/13	*11/12*	*12/13*	11/12	*12/13*
Number of farms	*Ins. data*	Ins. data	*19*	14	*25*	21
Average number cows			*102*	106	*218*	220
Average yield (litres)			*7529*	7703	*7823*	8198
Milk price (ppl)			*26.9*	27.2	*27.9*	29.0
	£/cow		£/cow		£/cow	
Output						
Milk			*2022*	2092	*2181*	2375
Calf			*132*	155	*78*	96
Lease Quota (net)			*0*	0	*0*	0
Other Dairy			*0*	0	*5*	3
Herd Replacement			*-180*	-184	*-223*	-206
Total Dairy Output			***1974***	**2063**	***2041***	**2268**
Variable costs						
Concentrates			*598*	687	*648*	754
Coarse Fodder			*41*	55	*45*	66
Vet and Medicine			*70*	69	*84*	96
Other Livestock Costs			*179*	172	*178*	193
Forage Costs			*107*	98	*82*	96
Total Variable Costs			***995***	**1081**	***1037***	**1207**
Total Gross Margin			***978***	**982**	***1004***	**1061**

Table A.12: Gross Margin Results: Lowland (West) by Herd Size

Lowland (West)	< 80 cows		80 – 130 cows		>130 cows	
	11/12	12/13	*11/12*	*12/13*	11/12	*12/13*
Number of farms	*22*	29	*33*	26	*42*	41
Average number cows	*55*	58	*108*	110	*232*	233
Average yield (litres)	*6699*	6563	*7772*	7501	*7906*	7416
Milk price (ppl)	*27.0*	27.7	*27.7*	28.7	*28.9*	29.3
	£/cow		£/cow		£/cow	
Output						
Milk	*1808*	1821	*2156*	2151	*2288*	2170
Calf	*108*	126	*94*	116	*99*	112
Lease Quota (net)	*0*	0	*0*	0	*0*	0
Other Dairy	*-1*	8	*2*	2	*2*	2
Herd Replacement	*-192*	-184	*-206*	-239	*-238*	-226
Total Dairy Output	***1727***	**1771**	***2046***	**2031**	***2152***	**2058**
Variable costs						
Concentrates	*493*	549	*525*	575	*630*	667
Coarse Fodder	*45*	38	*33*	32	*21*	30
Vet and Medicine	*61*	70	*74*	79	*74*	74
Other Livestock Costs	*148*	182	*156*	171	*172*	171
Forage Costs	*79*	88	*99*	118	*92*	109
Total Variable Costs	***825***	**927**	***887***	**974**	***989***	**1051**
Total Gross Margin	***901***	**844**	***1158***	**1056**	***1163***	**1006**

Appendix 2: Reports in Series

Reports in this series:

Crop Production in England

Dairying Farming in England

Hill Farming in England

Horticulture Production in England (Horticultural Business Data)

Lowland Grazing Livestock Production in England

Pig Production in England

Poultry Production in England

Organic Farming in England

Details available at www.ruralbusinessresearch.co.uk