Outlook 2011
Economic Prospects for Agriculture

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Executive Summary

General Overview

- Estimates for 2010 provide evidence that the Irish agricultural sector is recovering from the negative effects of the global recession. Like other export focused sectors of the Irish economy, agriculture has benefited from the emerging global economic recovery and the current weak nature of the Irish economy is having only a limited impact on Irish commodity prices.

- World prices for many agricultural commodities rose in 2010, but key input costs such as feed, fertiliser and energy are also moving upwards. Whether or not producers experience a price cost squeeze in a given period depends on both the timing and the magnitude of these output and input cost increases.

- Margins in 2010 increased in most sub-sectors of Irish agriculture, particularly so in the case of dairy, cereals and sheep. Improvements were more limited in the case of beef and profitability in the pig sector actually declined.

- A key issue for the Outlook for 2011 is the continuing increase in costs, notably for feed, fertiliser and fuel. Consequently, to maintain margins, producers will require that output prices in 2011 are higher than those recorded in 2010. The outlook for the main sectors in 2011 suggests that output prices will increase, but the extent of the improvement will not be consistent across sectors. Prospects for dairy in 2011 are better than those for meat and cereal producers. Dairy margins in 2011 should be at least on a par with 2010, while margins for beef, sheep and cereals should exhibit a small decrease.

Dairy

- In 2010 the Irish dairy sector had the double benefit of an increase in milk prices of about 30 percent and an increase in the volume of milk output of over 7 percent. The increase in the value of milk output was achieved with little change in aggregate costs. Some key input prices increased as 2010 progressed and the level of input use rose in the case of feed and fertiliser. However, the increase in the value of milk output ensured that dairy margins improved in 2010 to levels similar to those achieved in 2008, an almost five fold increase on the 2009 level.

- Nationally, milk production in 2010 increased by 7 percent. The extent to which individual dairy farmers' incomes increased in 2010 will largely depend on the change in production year on year. This is likely to vary greatly from region to region and from farm to farm.

- For 2011, producers will be hoping that grass growing conditions allow them to reduce feed and fertiliser usage, particularly as these cost items are forecast to increase in price by approximately 20 percent.

- Global dairy market prospects for the early months of 2011 are good from a producer perspective. The average Irish manufacturing milk price for 2011 should at least hold at 2010 levels (30 cent/litre) with a reasonable prospect of a further annual average increase in milk price of 5 percent or more in 2011.

Cattle

- Margins on Irish beef systems improved marginally in 2010, reflecting slightly higher beef prices and a modest reduction in production costs. Margins in beef production did not change significantly in 2009, which partially explains why the improvement in margins in 2010 appears small in comparison with some other sectors of Irish agriculture.

- In spite of the favourable output and cost movements in 2010, net margins for the majority of cattle farmers remained negative, i.e. the total costs of production exceeded the value of output.

- If the exclusion of Brazilian beef from the EU market and the favourable euro sterling exchange rate continue into 2011, the consequences for Irish beef prices will be positive, given the continuing fall in EU beef production. Accordingly, Irish beef producers should expect a further improvement in beef prices in 2011 of the order of 4 percent.

- Rising input prices will see beef production costs increase in 2011 by slightly more than the increase in beef price, which means that margins on Irish cattle farms are forecast to fall slightly in 2011.

Sheep

- In 2010 the sheep sector experienced a good year with margins up considerably, largely on the back of rising lamb prices, which reached a level in 2010 last seen during the UK FMD crisis of 2001.

Irish lamb prices increased by 17 percent in 2010 relative to 2009. This far surpassed the increase in beef and pigmeat prices.

- The continuing contraction in EU sheep meat production, and the improved competitiveness of Irish lamb on the UK market, due to the decline in the value of the euro versus sterling, both contributed to the rise in Irish lamb prices in 2010. Lower direct costs of production for sheep were observed in 2010 largely due to lower fertiliser prices. These output price and input cost changes, coupled with the 2010 Sheep Grassland Payment, due to be paid in 2011, mean that gross and net margins in sheep production in 2010 were up considerably on the 2009 level.

- The decline in the number of sheep flocks in Ireland, which has been ongoing since the early 1990's, came to a halt in 2009. A sharp decline in sheep slaughtering was observed in 2010, which means that the ewe herd should stabilise and as a result, Irish lamb production in 2011 should be on a par with 2010 levels.

- The contraction in New Zealand lamb exports to the EU and the fall in EU lamb production present a positive outlook for Irish lamb prices in 2011. However, the increase in lamb prices is likely to be offset by rising production costs, which would mean that margins contract slightly in 2011 relative to 2010. Nevertheless, net margins in 2011 are still likely to be comfortably more than double those achieved in 2009.

Pigs

- Irish pig prices have been slow to react to the upward movement in feed costs in 2010. Given that feed represents about 70 percent of pig production costs, higher feed prices have a very strong impact on production costs.

- Irish pig prices rose over the course of 2010 but the average price for the year was still below the 2009 level. Production costs increased by about 4 percent per kg deadweight in 2010, but this average hides a pattern of rising production costs over 2010, which will continue into 2011.

- Following a decade of decline, the Irish sow herd stabilised in 2010. Irish pig slaughterings were up on the depressed 2009 figure, which was adversely affected by the dioxin feed contamination.

- Higher pig production costs seem inevitable in 2011 but pig prices should show an upward trend as 2011 evolves. An increase in pig prices of 10 to 15 cent per pig by mid 2011 is in prospect which would facilitate the beginnings of a recovery in margins for pig producers.

Cereals

- Following extremely poor margins in 2008 and 2009, profitability in Irish cereal farming improved significantly in 2010. Lower costs of production, a substantial increase in harvest prices and favourable weather conditions at harvest, gave rise to a very substantial increase in cereal crop margins in 2010 relative to 2009.

- While cereal net margins were negative across the board in 2009, it is estimated that all cereal producers recorded a positive net margin in 2010.

- The outlook for 2011 is quite uncertain given the extent of the output price volatility in the market. Nevertheless, based on a forecasted 5 percent increase in Irish cereal prices, margins in 2011 for spring barley would be down slightly on foot of rising production costs. A more positive outcome for cereal margins in 2011 remains a possibility, and if output prices were to increase by a greater extent, producers could expect that margins would at least be maintained at 2010 levels.

Forestry

- Although the rate of new planting has been depressed in the recent past, new planting rates increased in 2010 by about 25 percent on the 2009 level.

- Timber processors in Ireland have become more dependent on international markets, in particular the UK, due to the depressed state of the Irish construction sector. Timber prices improved, somewhat unexpectedly in 2010 and the weakening of the euro against sterling has helped enable Irish timber exporters gain a bigger share of the UK timber market.

- While timber prices fell back towards the end of 2010, they are expected to remain relatively strong in 2011. Expectations are that new forestry planting rates will remain at similar levels in 2011 to those of 2010.

Farm Incomes and Investment

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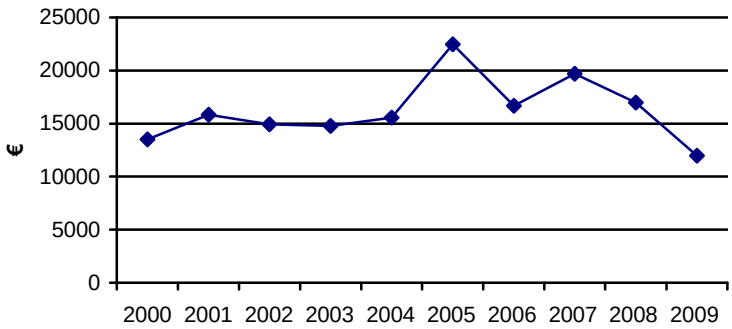
1. Introduction

This paper presents the farm income figures for 2009 as published by the National Farm Survey (NFS). Following this, estimates of agricultural sector income in 2010 are reported and the paper concludes with an analysis of investment levels in 2010 and planned investment in 2011.

2. Overview of Farm Incomes in 2009

In May of 2010 Teagasc published the National Farm Survey results on farm incomes for 2009, (Connolly et al 2010). The results showed a further decline in farm incomes in 2009. The average family farm income (FFI) in 2009 was €11,968, a 30 percent decline on the previous year.[1] Figure 1 presents the average family farm income across all farms from 2000 to 2009.

Figure 1: Average Family Farm Income 2000 to 2009[2]



Source: National Farm Survey (various years)

[1] Family Farm Income (FFI) is calculated by deducting all the farm costs (direct and overhead) from the value of farm gross output. Unpaid family labour is not included as a cost. As FFI does not include income from non-farming it may not be equated to household income.

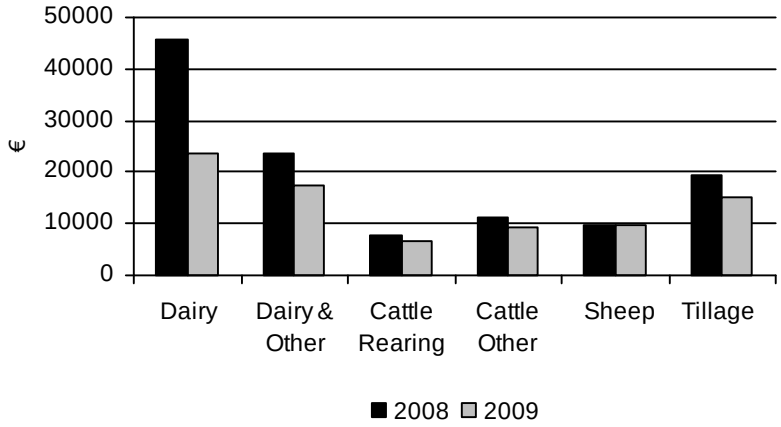
[2] All figures in the paper are reproduced as tables in the appendix

This decline was driven mostly by the falling value of gross output, down 14 percent on the previous year, as total costs of production declined by 7 percent and the value of direct payments and subsidies remained more or less unchanged. The decline in income levels meant that the overall reliance on direct payments as an income source increased from 103 percent of farm income in 2008 to 143 percent in 2009. In other words, the value of gross output generated was insufficient to cover the costs of production.

Costs as a percentage of gross output also increased in 2009 reflecting a loss in efficiency. On a national basis, 78 percent of gross output was absorbed by total costs in 2009 up from 70 percent in 2008. If direct payments are excluded from gross output, then costs as a percentage of the market based value of gross output in 2009 were over 117 percent. This has increased from 100 percent and 91 percent in 2008 and 2007 respectively. This represents a major loss in efficiency due mainly to the decline in market based output from 2007 to 2009 and rising input costs over the same period.

The income figures presented in Figure 1 relate to average farm income and it is important to note that the average national FFI figure conceals the wide range of variation that exists across the different farm systems and sizes. Specialist *Dairy* farms recorded the largest decrease in incomes in 2009 of any of the farm systems, down 48 percent on 2008 levels. Income on the *Dairy & Other* farms decreased by 27 percent while the decline on the *Cattle Rearing* and *Cattle Other* farms was 15 and 17 percent respectively. Only *Sheep* farms recorded an increase in farm incomes in 2009, albeit of just 1 percent, while income on tillage farms also declined by 21 percent. Figure 2 presents average FFI figures for the main farming systems.

Figure 2: Average Family Farm Income by system 2008 and 2009



Source: National Farm Survey (2009) and (2010)

Some of the variation in income levels on a system basis may be due to differing farm size. *Tillage* farms for example have on average a much larger land area than C*attle Rearing* farms. Almost 15 percent of *Tillage* farms are 100 hectares or more compared to less than 3 percent of cattle rearing farms. Table 1 presents FFI per hectare, which normalises the data by removing the effect of farm size from the profit measure. Average FFI per hectare for all systems in 2009 was €323, showing a decline of 30 percent on the 2008 figure of €462. In terms of the variation between systems, results were similar to previous years with *Dairy* yielding the highest FFI per hectare, albeit the difference between *Dairy* and all other farm systems had narrowed in 2009. As has usually been the case, the C*attle Rearing* systems recorded the lowest FFI per hectare in 2009. The decline in returns to *Dairy* and *Tillage* is again clearly evident in Table 3.

Table 1: Family Farm Income per Hectare 2008/2009

	2008 €	**2009 €**	**% Change 2009/2008**
Dairy	961	500	-48
Dairy & Other	507	316	-38
Cattle Rearing	260	221	-15
Cattle Other	361	301	-17
Sheep	281	279	-
Tillage	335	268	-20
All	**463**	**323**	**-30**

Source: National Farm Survey (2009) and (2010)

The NFS results can also be segregated on the basis of full and part-time farms. A full-time farm is defined as requiring at least 0.75 standard labour units to operate calculated on the basis of standard man day (SMD) requirements and the physical gross output of each farm. Full-time farms can be considered as representative of the larger, more commercial sector of farming and in 2009 accounted for just under 30 percent of all farms, or 31,090 farms. Sixty percent of full-time farms were in the two dairy systems, with a further 8 percent in the *Tillage* System and the remaining 32 percent in the drystock systems. Table 2 presents the average FFI figures for the full and part-time farms in the NFS.

Table 2: Average Family Farm Income for Full and Part-time Farms 2009

	Dairy	Dairying Other	Cattle Rearing	Cattle Other	Sheep	Tillage	All
				€/Farm			
Full-time Farms	25498	24974	17261	26698	19387	23319	24124
Part-time Farms	3371	3796	5213	6944	7407	10078	6611

Source: National Farm Survey (2010)

The definition of full-time farms presented above does not account for the presence of off-farm income in the farm household. In 2009 the incidence of off-farm employment by the holder and/or spouse declined for the second consecutive year from 58 percent in 2007 to 56 percent in 2008 and to 53 percent in 2009.

In summary, 2009 was a poor year for farm incomes across the majority of sectors. The large decline in farm incomes was driven mostly by falling product prices as production costs declined and subsidies remained more or less unchanged. This poor year in agriculture occurred in conjunction with a severe down-turn in the overall economy, as reflected in the declining number of farmers employed off the farm.

3. Agricultural Incomes in 2010

This section of the paper reviews the performance of the agriculture sector in 2010. Although the NFS results for farm incomes for 2010 are not available at the time of writing, an advance estimate of aggregate sector income was published by the Central Statistics Office (CSO) in December 2010, (CSO 2010). The following section of the paper discusses these estimates.

The Central Statistics Office Advance Estimate of Output, Input and Income in Agriculture suggests that despite the severe deterioration in the overall

economy in 2010, the agriculture sector actually recovered. The advance estimate is that agricultural operating surplus increased by 46 percent in 2010 relative to 2009. Operating surplus can be considered as a measure of the income of the sector as a whole. It is comprised of the operating surplus earned by farmers and agricultural contractors before any deductions for interest payments, land annuities and land rental payments.

The CSO estimate, as summarised in Table 3, shows that the value of goods output at basic prices increased by 15.3 percent in 2010 relative to 2009, intermediate consumption was more or less unchanged leaving gross value added at basic prices up 81 percent. Following the deduction for fixed capital consumption, a measure of depreciation, net value added at basic prices is estimated to have increased more than five fold. When the value of direct payments and subsidies is added to this figure, it is estimated that factor income increased by 36 percent from 2009 to 2010. The compensation of employees, which represents payments to hired workers but does not include remuneration for farmers' own labour, is more or less unchanged from 2009 to 2010 leaving operating surplus up 46 percent.

Table 3: Summary of Operating Surplus 2009 and 2010

	2008	**2009**	**2010**	**Change 2010/2009**
	€ million	**€ million**	**€ million**	**%**
Goods output at basic prices	6,076.6	4,995.4	5,757.7	+15.3
Less intermediate consumption	*(4,505.2)*	*(4,070.8)*	*(4,083.1)*	*+3.3*
Gross Value Added at basic prices	1,571.4	924.6	1,674.6	+81
Less fixed capital consumption	*(775.6)*	*(780.6)*	*(745.5)*	*-4.5*
Net Value Added at basic prices	795.8	144	929	+545
Plus Subsidies	*1,905.0*	*1,843.8*	*1,773.4*	*-3.8*
Factor Income	2,700.8	1,987.8	2,702.5	+36
Less Compensation of Employees	*(436.3)*	*(427.7)*	*(424.5)*	*-0.7*
Operating Surplus	**2,264.6**	**1,560.1**	**2,277.9**	**+46**

Source: Central Statistics Office (2010)

Table 4 presents the estimated changes to goods output in more detail. In terms of the output of the livestock sector, cattle output is by far the most important component comprising over two-thirds of total output. The CSO estimate that the value of cattle output increased by just over 12 percent from 2009 to 2010 and that this was almost entirely driven by an increase in volume. More information on the performance of the cattle sector is available in the cattle paper in this publication (Breen and Hanrahan 2011). In summary, Breen and Hanrahan explain that finished cattle prices

increased by just under 2 percent from 2009 to 2010 and that a large proportion of the increase in the volume of output of the sector is due to the growing live export trade from Ireland. Live exports of cattle from Ireland increased by 18 percent in 2010 relative to 2009.

At the time of writing, there were indications from the CSO that the preliminary estimates of output, input and income in agriculture, to be published in February 2011, were likely to include a downward revision of the 2010 cattle output value. The CSO is changing the method of calculating cattle stock changes to use the administered data from the Department of Agriculture, Fisheries and Food (AIM data). At the time of writing, the CSO were not in a position to disclose the magnitude of this change and what the effect might be for overall operating surplus.

Table 4: Summary of Goods Output 2010

	2010	Change In Volume	Change in Value
	€million	%	%
Livestock	**2400.5**	**8**	**9.2**
(of which) Cattle	*1627.8*	*12.8*	*12.2*
Pigs	*330.7*	*7.4*	*7.8*
Sheep	*169.6*	*-7.5*	*7.6*
Livestock Products	**1571.2**	**7.1**	**37.6**
(of which) Milk	*1526.8*	*7.2*	*38.8*
Crops	**1507.2**	**1.6**	**9.9**
(of which) Cereals	*202*	*7.6*	*88.8*
Forage Plants	*857.7*	*-2.5*	*0.7*
Goods Output at Producer Prices	**5478.9**	**6.2**	**16.3**
Plus Contract Work	*268.7*	-	-
Plus Subsidies less taxes	*10.1*	-	-
Agricultural Output at Basic Prices	**5757**	**5.7**	**15.3**

Source: Central Statistics Office (2010)

Pigs and sheep jointly account for the remaining one-third of livestock output. Both sectors are estimated to have grown in value by almost 8 percent in 2010. The year 2010 was a particularly good one for sheep as despite a contraction in volume in the order of 7.5 percent, the value of output still grew.

In terms of livestock products, milk is the most important output comprising over 97 percent of the total output value of livestock products. The year 2010 was also a very good one for milk production. Against a backdrop of

strong international demand and contracting supply, milk prices in Ireland increased by just over 30 percent in 2010 relative to the 2009 levels. It should be noted however, that 2009 was a particularly poor year for dairy product markets. The recovery in milk prices in 2010 induced a supply response in Ireland and national milk supply increased by approximately 7 percent. Further and more detailed information on the developments on dairy markets in 2010 is available from the dairy paper in this publication, Donnellan and Hennessy (2011).

In relation to crops, the CSO estimate that the value of cereals output increased by almost 90 percent in 2010 relative to 2011. As outlined in the cereals paper in this publication, farm gate feed wheat, barley and oat prices at 20 percent moisture are estimated to have increased by over 60 percent in 2010 relative to 2009, Thorne (2011). However, similar to the dairy sector it should be noted that 2009 was a particularly poor year for cereal prices and that the 2010 prices were only 10 percent higher than the average of the previous three years. Interestingly, Thorne (2011) based on the Teagasc harvest report estimated that the total volume of cereals declined by 3 percent in 2010. She estimates that despite modest increases in yields, total production declined due to an 11 percent contraction in the area of land planted. The CSO have estimated little change to the value of forage plants.

In summary, it seems that 2010 was a good year for much of Irish agriculture with operating surplus estimated to have increased by 46 percent. The value of output from all of the main farm enterprise increased in 2010 relative to 2009 and this was in conjunction with a modest reduction in aggregate input expenditure. It should be noted however, that all of the information presented above is based on the advance estimate produced by the CSO in December 2010. The preliminary estimate will be available in February 2011 and already the CSO have indicated that the cattle output figure will be revised.

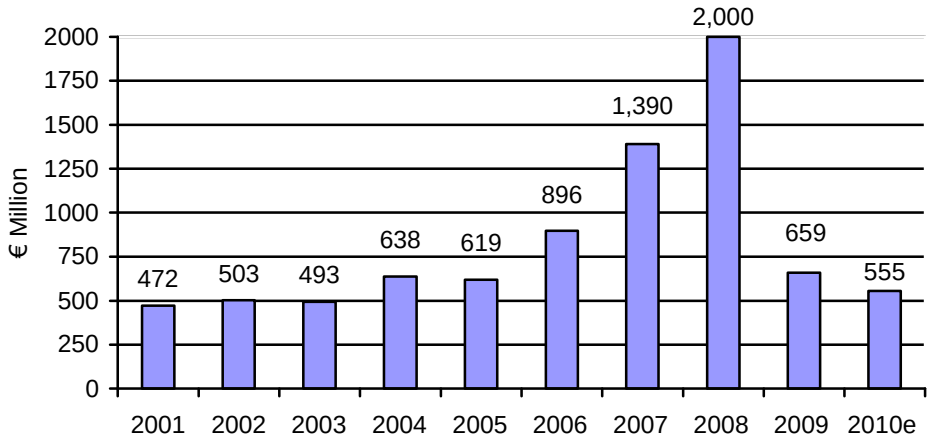
4. Farm Investment in 2010 and 2011

The following section of the paper presents estimates of farm-level investment in 2010 and a forecast for farm investment in 2011 based on a survey of farmers' intentions.

NFS data on gross new investment undertaken by the farm sector from 2001 to 2009 and estimated investment for 2010 are presented in Figure 3. Gross new investment includes investment in machinery, buildings, quotas and land improvements (including forestry) and is a measure of the investment made by the farmer before the receipt of grants or subsidies for that investment. As can be seen, investment by the sector was relatively

static from 2001 to 2005, varying between €470 and €619 million. Investment increased considerably in the 2006, 2007 and 2008 period. This investment was largely policy driven. Cross compliance obligations introduced under the Nitrates Directive meant that many farmers were obliged to invest in farm waste management facilities. The Irish Department of Agriculture, Fisheries and Food (DAFF) operated the Farm Waste Management Scheme over this period where grant aid of up to 70 percent, in certain cases, was available. Approximately €114 million was made available in grants under the Farm Waste Management Scheme in 2007 alone. The Dairy Hygiene and Farm Improvement Schemes were also in operation over this period offering incentives for investment which may also explain the heightened level of investment.

Figure 3: Gross New Investment by the Farm Sector 2001 to 2010



Source: National Farm Survey (various years)

Investment fell significantly, by over 65 percent, from 2008 to 2009. This large decline was a result of both a reduction in the number of farmers investing and the level of individual investment. Investment in buildings, in particular, recorded very large reductions from €1,457 million in 2008 to €285 million in 2009, a reduction of 80 percent. One of the eligibility criteria of the Farm Waste Management Scheme was that all building work had to be completed by the end of 2008. This criterion along with the significant fall in farm incomes from 2007 to 2009 may explain the fall off in farm investment in the 2008 to 2009 period.

Estimated investment levels for 2010 are slightly lower, by approximately 15 percent, than 2009 levels. The estimate for 2010 is based on a survey conducted in the autumn of 2010. Almost half of these surveys were returned by mid October so the figure will not reflect any unanticipated

investment that might have occurred in the last two months of the year. Given that dairy, cereals and to a lesser extent beef prices increased throughout the year, there may have been a heightened level of unanticipated investment activity at the end of 2010. Table 5 presents the estimated level of investment for 2010 across the various farm systems and by investment type. The two dairy farm systems are aggregated as are the cattle farming systems.

Table 5: Composition of Estimated Farm Investment 2010

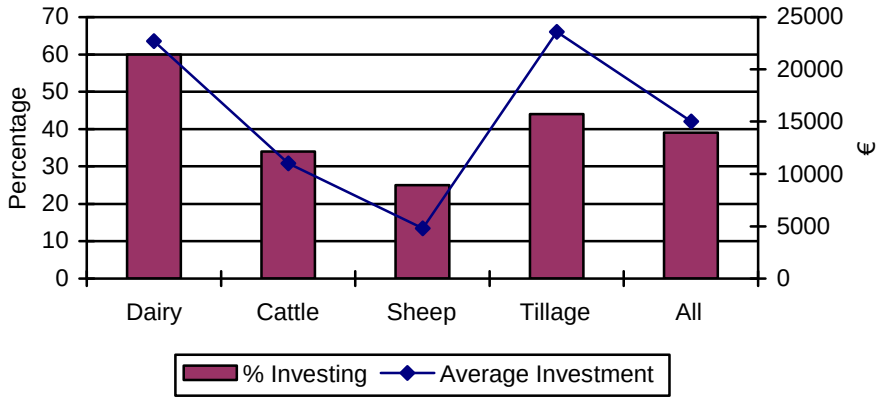
	Dairy	Cattle	Sheep	Tillage	All
			€ Millions		
Machinery	96.6	91.4	12.3	40	240.4
Buildings	140.5	77.2	3.1	18.3	239.2
Land Improvement	6.8	21.2	0	0.4	28.4
Milk Quota	4.5	0	0	0	4.5
Forestry	0.5	0	0	0	0.5
Other	25.9	9.7	3.8	1.8	41.3
Total	**274.9**	**199.6**	**19.2**	**60.5**	**554.5**

Source: National Farm Survey (2010)

As can be seen from Table 5 the dairy farming systems accounted for €275 million, or 50 percent, of the total sector investment in 2010. The cattle farming systems accounted for €199 million, or 36 percent of the total, while sheep and tillage accounted for the remaining 14 percent. Investment in machinery and buildings was almost equal at approximately €240 million, jointly accounting for 85 percent of all investment.

Figure 4 presents data on the percentage of farmers investing and the average level of investment in 2010. Approximately 36,000 farmers, almost 40 percent of the total, made some investment in 2010 and the average level of investment per investing farmer was €15,000.

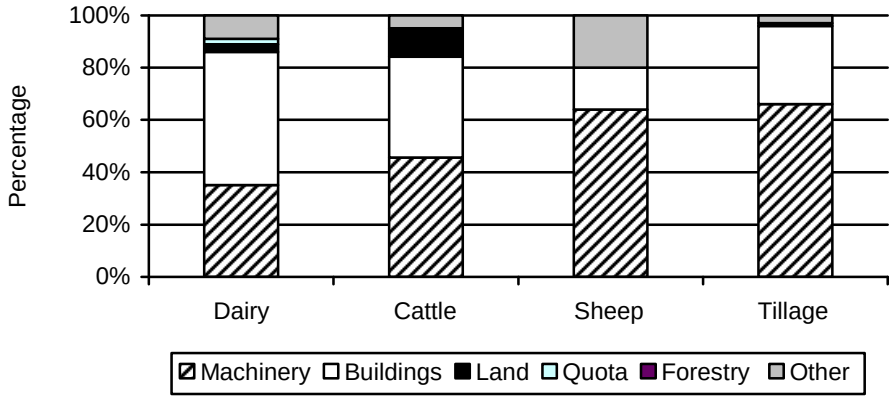
Figure 4: Estimated Investment by system of farming in 2010



Source: National Farm Survey (2010)

Approximately 60 percent of dairy farmers invested an average of €22,000 in 2010, compared to just 25 percent of sheep farmers investing an average of €4,800. Tillage farmers had the highest level of average investment per farm in 2010, with 42 percent of farmers investing an average of €24,000 per farm. Figure 5 shows the types of investment made by each farm system.

Figure 5: Composition of Estimated Investment by system of farming and type of Investment in 2010



Source: National Farm Survey (2010)

With the exception of dairy farms, machinery accounts for the bulk of investment across the various farm systems. Dairy is an exception in that over 50 percent of the total investment was in buildings. Only cattle farms made any significant investment in land improvement, which accounted for

11 percent of all of the investment made by cattle farmers. Other NFS data suggests that there has been considerable reseeding activity in 2008 and 2009 particularly on dairy farms (Hennessy and Newman 2010). This is not reflected in the investment figures and it is possible that this may have been recorded in the NFS as a variable cost of production rather than an investment in land improvement.

4.1 Planned Farm Investment for 2011

The NFS also carries out a survey each autumn to ascertain farmers' investment plans for the coming year. The survey is conducted by means of a single visit questionnaire. The following results are based on 754 questionnaires completed in the autumn of 2010. It should be noted that the level of planned investment reported in these surveys is almost always an underestimate relative to the level of investment that actually occurs. A retrospective analysis reveals that over the last 10 years planned investment, as reported in these surveys, has represented on average only 50 percent of actual investment. This underestimate may be exacerbated in the 2010 survey as it became apparent in the last quarter of the year that the outlook for 2011 was more positive than initially anticipated.

Table 6 presents the data on planned investment for 2011. Investment totalling €271 million is planned by the farm sector in 2011, this represents an approximate 50 percent decrease on the estimated level of investment in 2010. With the exception of milk quota, planned investment in 2011 for all other items is down significantly on the estimated levels for 2010. The planned increase in milk quota purchases is likely to be a result of the recovery in milk prices in the latter half of 2010 and the renewed enthusiasm for expansion of milk output.

Table 6: Farm investment planned for 2011 and estimated investment in 2010

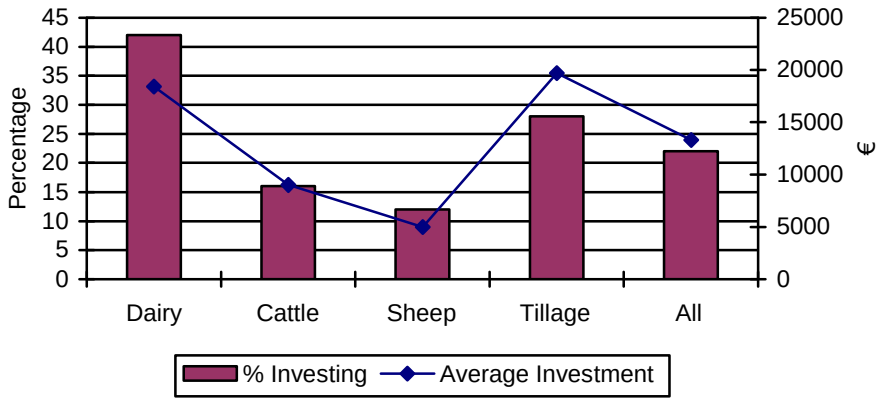
	2011	**2010**	**% Change**
	€m	€m	%
Machinery	114	240	-53
Buildings	127	239	-47
Land	8	28	-71
Milk quota	9	5	+80
Other	13	42	-40
Total	**271**	**555***	

Source: National Farm Survey

** - note that estimated investment in forestry is excluded due to the lack of verifiable data on planned investment in forestry*

Figure 6 presents the proportion of farmers planning to invest in 2011 and the average level of planned investment. Across all farm systems, approximately 22 percent of farmers are planning some investment in 2011.

Figure 6: Planned Investment by system of farming in 2011

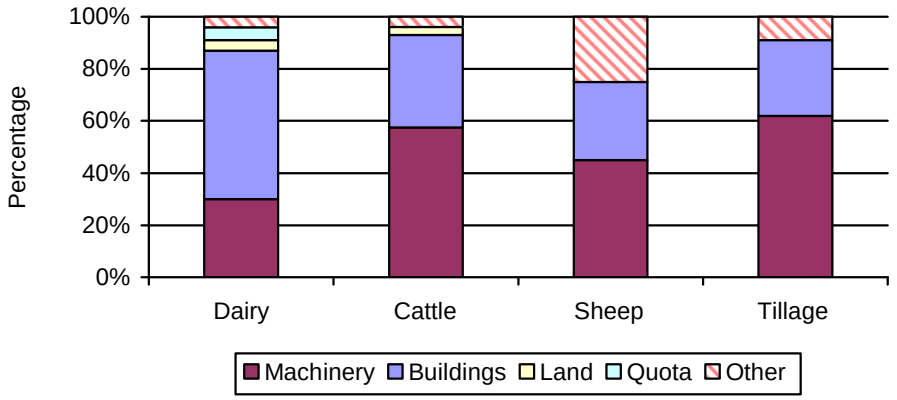


Source: National Farm Survey (2010)

As usual, the dairy farming system has the highest proportion of farmers planning to invest at just over 40 percent, this is down from 60 percent investing in 2010. The average level of planned investment in 2011 is just over €13,000 per investing farm, compared to €15,000 in 2010. Tillage and dairy farmers have the highest levels of average planned investment at €19,700 and €18,400 respectively. However, both figures represent a decrease on the levels invested in 2010.

Figure 7 shows the types of investment planned by each farm system for 2011.

Figure 7: Composition of Planned Investment by system of farming and type of Investment in 2011



Source: National Farm Survey (2010)

In line with the estimated investment levels for 2010, machinery accounts for the bulk of planned investment on cattle, sheep and tillage farms in 2011, while investment in buildings is more important for dairy farms.

5. Summary

The review of the NFS results for 2009 show that it was a very poor year for agriculture. Dairy and tillage farmers, in particular, experienced substantial reductions in their income. The CSO advance estimate for sector income for 2010 suggests a reversal of fortunes. Output values are estimated to have increased for all of the main farm outputs, with dairy and cereals enjoying the largest increases. The analysis of farm investment shows that following very low incomes in 2009 farm investment fell considerable in 2010. However, investment is still significant at over half a billion euro. Based on farmers' intentions in the autumn of 2010, investment is likely to fall further in 2011.

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Appendix: Tables referring to Figures in the Text

Table A1: Average Family Farm Income 2000 to 2009

Year	Family Farm Income €
2000	13,499
2001	15,840
2002	14,917
2003	14,765
2004	15,557
2005	22,459
2006	16,680
2007	19,687
2008	16,993
2009	11,968

Source: National Farm Survey (various years)
Refers to Figure 1 in the text

Table A2: Average Family Farm Income by system 2008 and 2009

	Dairy	Dairy &Other	Cattle Rearing	Cattle Other	Sheep	Tillage
	€					
2008	45,732	23,700	7,739	11,200	9,593	19,308
2009	23,684	17,281	6,563	9,302	9,688	15,247

Source: National Farm Survey (2009) and (2010)
Refers to Figure 2 in the text

Table A3: Gross New Investment by the Farm Sector 2001 to 2010

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010e
	€ million									
Actual Investment	472	503	493	638	619	896	1,390	2,000	659	555

Source: National Farm Survey
Refers to Figure 3 in the text

Table A4: Estimated Investment by system of farming in 2010

	Dairy	Cattle	Sheep	Tillage	All
% Investing	60	34	25	44	39
Average Investment €	22,700	11,000	4,800	23,600	15,000

Source: National Farm Survey (2010)
Refers to Figure 4 in the text

Table A5: Composition of Estimated Investment by system of farming and type of Investment in 2010

	Dairy	Cattle	Sheep	Tillage
	%			
Machinery	35	46	64	66
Buildings	51	39	16	30
Land	3	11	0	1
Quota	2	0	0	0
Forestry	0	0	0	0
Other	9	5	20	3

Source: National Farm Survey (2010)
Refers to Figure 5 in the text

Table A6: Planned Investment by system of farming in 2011

	Dairy	Cattle	Sheep	Tillage	All
% Investing	42	16	12	28	22
Average Investment €	18,400	9,000	5,000	19,700	13,300

Source: National Farm Survey (2010)
Refers to Figure 6 in the text

Table A7: Composition Planned Investment by system of farming and type of Investment in 2011

	Dairy	Cattle	Sheep	Tillage
	%			
Machinery	30	58	45	62
Buildings	57	36	30	29
Land	4	3	0	0
Quota	5	0	0	0
Other	4	4	25	9

Source: National Farm Survey (2010)
Refers to Figure 7 in the text

SITUATION AND OUTLOOK FOR DAIRYING 2010/2011

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1. Introduction

As a consequence of the global recession, a steep fall in milk prices reduced the average dairy farm net margin in 2009 to less than one cent per litre. However, 2010 has seen a faster than anticipated recovery in milk prices, relatively stable production costs and as a result dairy farm margins returning to the levels observed in 2008. A recovery in international dairy product consumption and limited growth in global milk supplies led to an increase in world prices in the final quarter of 2009 and the first half of 2010. As we enter 2011, milk prices are at their highest level since 2008, but there are signs that costs of production could increase noticeably relative to their 2010 level.

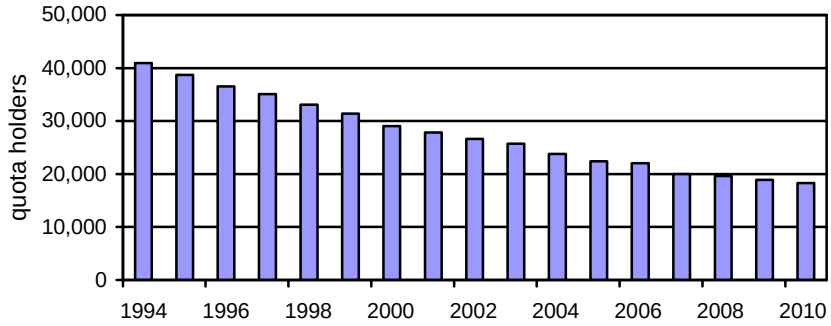
This paper looks back on dairy farm performance in 2009, reviews the outcome for 2010 and looks ahead to the prospects for 2011. Data from the Irish National Farm Survey (NFS) (Connolly et al 2010) are used in our review of 2009. The milk price and key input cost estimates for 2010 are used to produce an overall estimate of dairy farm profit for 2010. In the concluding sections of the paper, the forecast for milk price, production costs and dairy farm margins in 2011 is presented.

Unless stated otherwise, all figures referred to in this paper are in nominal terms and all income and profit estimates exclude the value of decoupled income support payments. Graphs in the main text which contain official data for 2009, estimates for 2010 and forecasts for 2011 are also reproduced as tables in the appendix to the paper.

2. Review of the Economic Performance of Dairy Farms in 2009

The number of active milk quota holders in Ireland continues to fall year on year. The latest figures published by the Department of Agriculture, Forestry and Food (DAFF) show that at the end of the 2009/10 milk quota year the number of active quota holders has fallen to 18,294, a decline of almost 600 on the preceding year. On average, almost 5 percent of farmers have exited production each year over the last 18 years, with 3.5 percent exiting in the 2009/10 quota year.

Figure 1: Number of Active Milk Quota Holders in Ireland 1994 to 2010



Source: Department of Agriculture (2010)

To place the economic performance of dairy farms in 2009 in context, we first compare the margin position in 2009 to 2008. Table 1 presents the average gross output, gross margin and net margin per litre of milk produced on all creamery milk farms in the NFS for 2008 and 2009.[3]

Table 1: Average Gross and Net Margin of Milk Produced (cent /litre)

	2008	***2009***	***% Change***
Total Gross Output	**33.8**	**23.3**	**-31**
Concentrate Costs	5.26	4.36	-16
Pasture and Forage Costs	4.3	4.65	8
Other Direct Costs	3.67	3.67	0
Total Direct Costs	**13.23**	**12.68**	**-4**
Gross Margin	**20.57**	**10.62**	**-48**
Energy and Fuel	2.54	2.15	-15
Labour	0.46	0.43	-6
Interest Payments	0.8	0.63	-21
Other Fixed Costs	8.21	6.62	-19
Total Fixed Costs	**12.01**	**9.83**	**-18**
Net Margin	**8.56**	**0.79**	**-90**

Source: National Farm Survey Data (2009) and (2010)

[3] Farms producing a majority of liquid milk are excluded from the sample as are herds of 10 cows or less.

Gross output includes the value of milk and calf sales less replacement costs. Calf sales are worth on average 3 cent per litre (cpl) with only a small variation across farms. Replacement costs have typically been in the order to 2.5 to 2.7 cpl, so the profit from calf sales is almost completely eroded by replacement costs. The value of milk sales typically accounts for 95 percent of gross output on the farm. As can be seen, gross output per litre fell by over 30 percent from 2008 to 2009. Total direct costs were down by 4 percent from 2008 to 2009 and as a result gross margin was down 48 percent on a cent per litre basis. Total fixed costs decreased by 18 percent from 2008 to 2009, mostly reflecting lower depreciation charges. The depreciation charge for buildings fell by almost 50 percent on dairy farms from 2008 to 2009, reflecting reductions in construction costs. The net margin was on average less than 1 cent per litre in 2009, representing a 90 per cent reduction on the 2008 level.

Table 2 presents gross output, gross margin and net margin per hectare of forage area allocated to the dairy enterprise.

Table 2: Average Gross and Net Margin (euro per hectare)*

		2008	***2009***	***% Change***
Stocking Rate	LU/ha	1.84	1.84	-
Milk Production	litres/ha	8,803	8,547	-3
Milk Delivered for Sale	litres/ha	8,228	8,001	-3
Total Gross Output	**€**	**2,983**	**2,011**	**-33**
Concentrate Costs €	€/ha	456	371	-18
Pasture and Forage Costs €	€/ha	358	368	3
Other Direct Costs €	€/ha	318	305	-4
Total Direct Costs €	€/ha	**1,132**	**1,044**	**-8**
Gross Margin €	€/ha	**1,850**	**967**	**-48**
Energy and Fuel	€/ha	214	172	-19
Labour	€/ha	40	40	0
Interest Payments	€/ha	69	54	-22
Other Fixed Costs	€/ha	699	544	-22
Total Fixed Costs	€/ha	**1,021**	**810**	**-21**
Net Margin	€/ha	**829**	**157**	**-81**

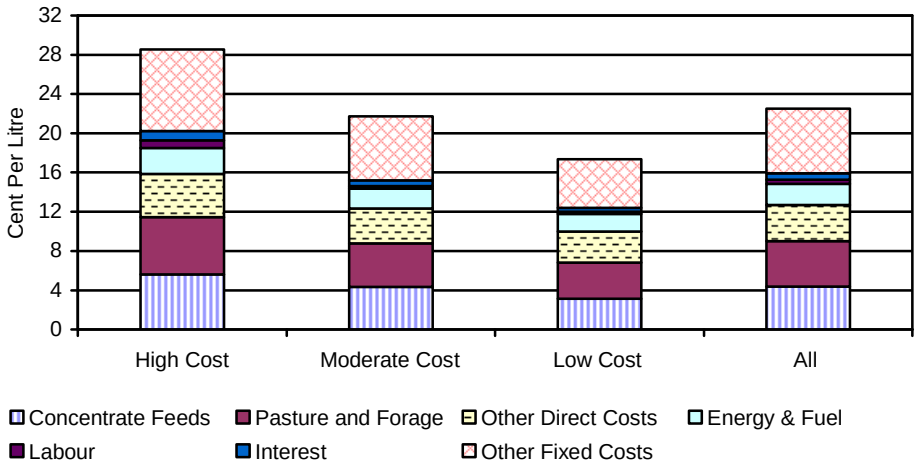
** - Hectare of forage area allocated to the dairy enterprise*
Source: National Farm Survey Data (2009) and (2010)

The trends in margin per hectare are similar to those presented in Table 1 above. Notably, there was a 3 percent reduction in the milk output and milk

deliveries per hectare in 2009. As there was no change in the average stocking rate from 2008 to 2009, the production decline was entirely due to lower deliveries per cow. The combination of a lower gross output per litre and lower production per hectare reduced gross output per hectare by 33 percent from 2008 to 2009. Direct costs fell by a greater percentage on a per hectare basis (8 percent), than a per litre basis (4 percent), reflecting the lower levels of production per hectare. Fixed costs also fell by slightly more on a per hectare basis relative to a per litre basis. The net margin per hectare in 2009 was €157, an 81 percent reduction on the 2008 level.

The tables above present the average levels of output, costs and profit for the sample of dairy farmers. However, there is a large variation in production costs and consequently profit across the full sample of dairy farms. To examine the variation in cost efficiency that exists in dairy farming, the weighted sample of 17,692 creamery milk suppliers are classified into three groups. In 2009 the national average cost of production was approximately 22.4 cent per litre (cpl). Farms are classified on the basis of production costs; the best performing one third of farms are labelled low cost, the middle one third are moderate cost and the poorest performing one third of dairy farms are classified as high cost. The variation in costs across farms is apparent from Figure 2.

Figure 2: Variation in Total Costs of Milk Production across all Creamery Milk Producers in Ireland in 2009



Source: National Farm Survey Data (2010)

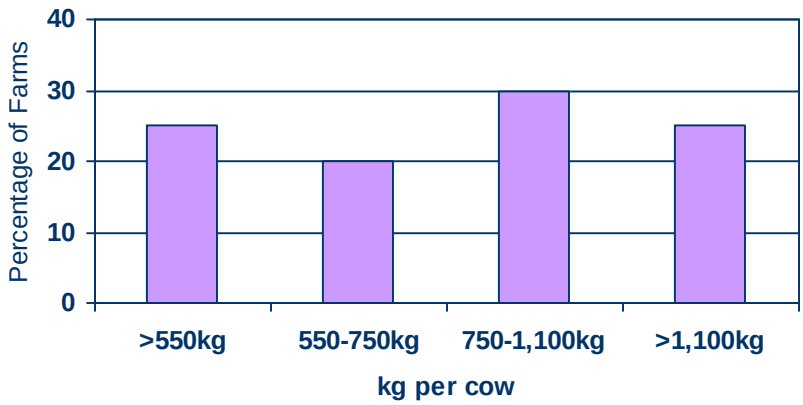
The average total cost of production on high cost farms in 2009 was 28.5 cpl, compared to 21.7 cpl on moderate cost farms and just 17.3 cpl on low cost farms. Across the range of creamery milk producers the difference in costs, between the average of the best performing one-third of producers

and the average of the poorest performing farm group, was almost 11 cpl in 2009.

Purchased concentrate feeds and pasture and forage costs represent about 40 percent of the total costs of production on dairy farms in 2009. Purchased concentrate feed costs varied from 3.1 cpl on low cost farms in 2007 to 5.6 cpl on high cost farms. The other direct costs category includes veterinary, AI and hire of machinery. These costs ranged from 3 cpl to 4.4 cpl from low to high cost farms. Fixed costs are broken into three categories; energy and fuel (including car, electricity, phone and all fuel used on the farm), labour (including casual and permanent hired labour) and all other fixed cost (including depreciation and maintenance of machinery, buildings and land). The variation in these costs across farms is relatively low.

Purchased concentrate feed is the most variable cost item across farms. The average quantity of concentrate feed fed per cow in 2009 was almost 900kg compared to almost 1,100kg in 2008. Figure 3 shows the large distribution of feed quantities per cow in 2009. Approximately 25 percent of farmers fed 500kg per cow or less while at the opposite end of the distribution 25 percent of farmers fed 1,100kg per cow or more.

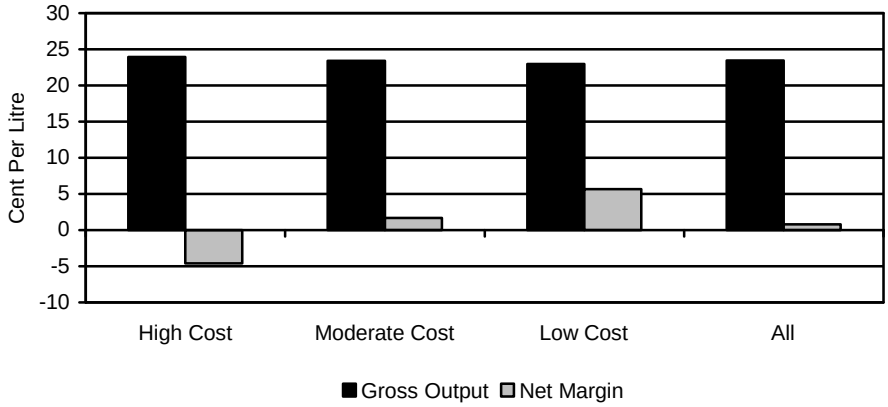
Figure 3: Range of Concentrate Feed per Cow across all Dairy Farms: 2009



Source: National Farm Survey Data (2010)

Figure 4 presents gross output and net margin for the three farm cost groupings. As is evident from Figure 4, the variation in gross output across farm groups is only marginal, with just a 3 percent difference in the value of gross output per litre between the cost groupings. The variation in production costs has obvious implications for profit levels.

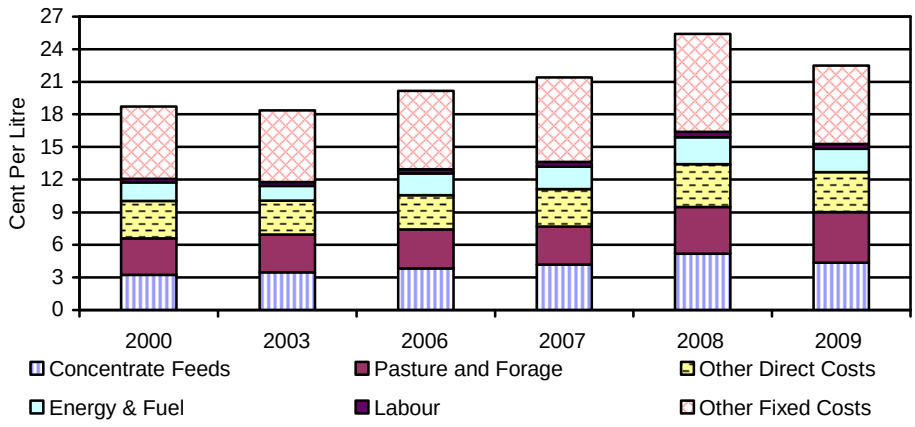
Figure 4: Variation in Net Margin across all Creamery Milk producers in Ireland in 2009



Source: National Farm Survey Data (2010)

The average net margin on low cost farms in 2009 was 5.65 cpl compared to the middle group of farmers at 2 cpl and the poorest performing farms at an average of minus 4.6 cpl. This means that the difference in profit between the low and high cost groups for a typical 250,000 litre farm was €25,650 in 2009.

Figure 5: Variation in Total Costs of Milk Production across all Creamery Milk Producers in Ireland in 2000 to 2009



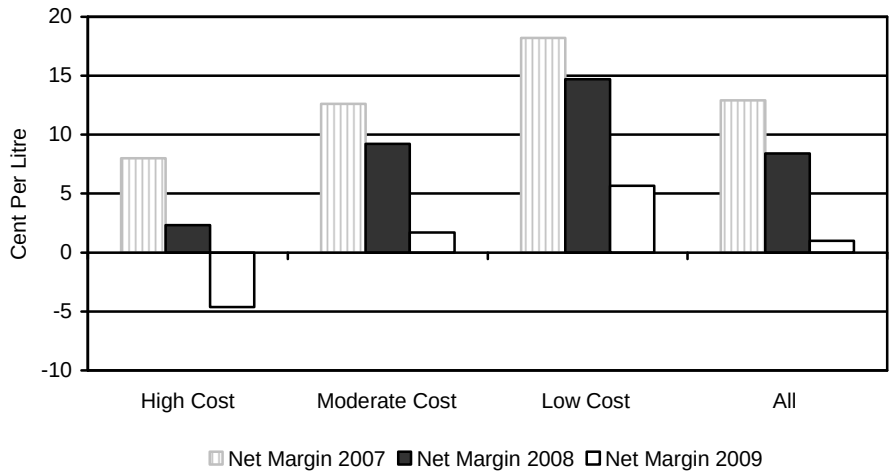
Source: National Farm Survey Data Various Years

The year 2009 was one of the highest cost years experienced of the last ten years, only surpassed by the cost level in 2008. Although costs in 2009

were almost 15 percent lower than 2008 levels, costs were still higher than 2007 and 2006 levels, as prices were slow to decline from the peak of 2008 for feed and fertiliser.

Figure 6 presents data on recent variations in profit levels on dairy farms from 2007 to 2009. As is evident, margins in 2009 were considerably lower than the 2007 and 2008 levels. Even on low cost farms, the average net margin per litre in 2009 was only 30 percent of the level recorded in 2007.

Figure 6: Variation in Net Margin of Milk Production across all Creamery Milk Producers in Ireland in 2007 to 2009



Source: National Farm Survey Data Various Years

Table 3 provides a breakdown of some basic characteristics of dairy farms in 2009, stratified by soil type. The majority of farms are operated on very good soils. The bottom line in the table presents the difference in margins per hectare across the three soil categories. The difference between the returns on very good soils and poor soils is much more pronounced in 2009 than previous years. The margins achieved on the very good soils are over 7 times higher than the margins achieved on the poor soils.

The difference in output per hectare across the three groups is apparent. Those on very good soils produce on average 20 percent more milk per hectare than those on good soils and this higher production is achieved with lower levels of concentrate feed.

Table 3: Summary Statistics for dairy farms by Soil Type: 2009

Soil Type		Very Good	Good	Poor
Share of farm population	percent	57	37	6
Milk Production	litres/ha	9,310	7,686	6,415
Concentrates Fed	kg/cow	845	981	786
Total Cost of Production	cent/litre	21.7	23.4	24.1
Net Margin	€/ha	193	109	25

Source: National Farm Survey Data (2009)

In summary, 2009 was a particularly poor year for milk prices and dairy farm margins, with a little over one third of farmers recording a negative net margin.

3. Review of 2010 Estimated Performance

This section of the paper presents a review of dairying in 2010. Since NFS results for 2010 will not be available until mid 2011, it is necessary to estimate the price and volume of inputs used in 2010, as well as the volume and price of outputs for the year. The following section of the paper first discusses costs in 2010, looking at both input prices and input usage volumes. Finally in this section, the development of dairy product markets in 2010 and the impact on milk prices is discussed.

It should be noted that some of the changes in costs in 2010 are associated with decisions to increase the volume of input usage, notably for feed and fertiliser, in conjunction with an increase in the volume of production. Farmers may have considered such cost decisions justified given the recovery in milk prices in 2010.

3.1 Estimated Input Usage and Price 2010

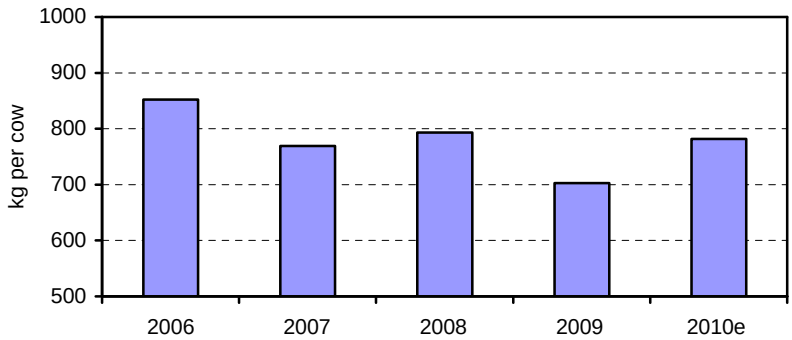
3.1.1 Feedstuff – usage and price 2010

Purchased feed (concentrates) typically accounts for about 20 percent of total input expenditure on dairy farms, although this varies by farm and by year. Figure 7 shows the average volume of compound feed use per cow. This is derived by the authors from Department of Agriculture Fisheries and Food (DAFF) figures on feed sales and from Central Statistic Office (CSO) data on animal numbers. The observed year on year variability is normally largely weather related. However, due to volatile milk and feed prices, Irish milk yields per cow and overall milk production have fluctuated in the last three years which has also contributed to the annual variability in feed use.

Data, provided by DAFF, for the first 9 months of 2010 indicates that aggregate dairy feed purchases were considerably ahead of the 2009 level, particularly in the third quarter. Based on this data source it would seem that the quantity of purchased compound dairy feed in 2010 is at least 10 percent higher than the 2009 level. Preliminary data from the *Teagasc Profit Monitor* suggests that the increase in the volume of feed use in 2010 may have even been higher, possibly of the order of 15 percent.

Milk prices have been around 30 cent per litre for much of 2010 and monthly milk production in the second half of 2010 has been well ahead of the depressed 2009 level, which may also have generated demand for additional feed in 2010. The extreme winter of 2009/10 was followed by a dry spring and near drought conditions in early summer, which made for poor grass growth. Reports suggest that there was an increase in the area under silage in 2010, creating an additional requirement to supplement the grass diet with concentrates in the summer months. Weather conditions in the second half of 2010 were more favourable for grass growth but the drive to boost milk production created further demand for feed supplementation in the second half of 2010.

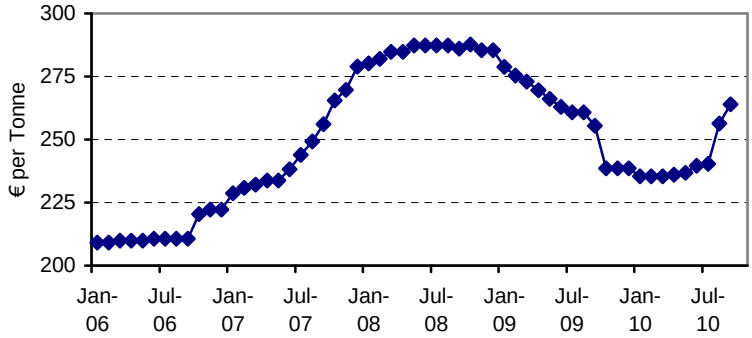
Figure 7: Compound Feed Purchases per dairy cow in Ireland: National Average for 2006 to 2010



Source: Authors' estimates derived from DAFF and CSO data
Note: e = estimate

Internationally, cereal prices rose rapidly in the second half of 2010 due to the reduced volume of cereals traded internationally and this price rise then began to be transmitted through to the feed market, with feed prices rising noticeably in the latter half of 2010. Figure 8 shows typical Irish dairy feed prices from 2006 to 2010.

Figure 8: Monthly Price Index of Dairy Meal (16-18% Protein) in Ireland 2006 to 2010



Source: Central Statistics Office (Various Years)

Based on the data available to date for 2010, the annual average feed price for 2010 is estimated to have fallen back to €248 per tonne, corresponding to a 3 percent price decrease on the average 2009 level.

The 3 percent decrease in feed prices in 2010, combined with the 15 percent increase in dairy feed volume, suggest that total expenditure on dairy feed in 2010 increased by 12 percent on the 2009 level.

3.1.2 Fertiliser – usage and price 2010

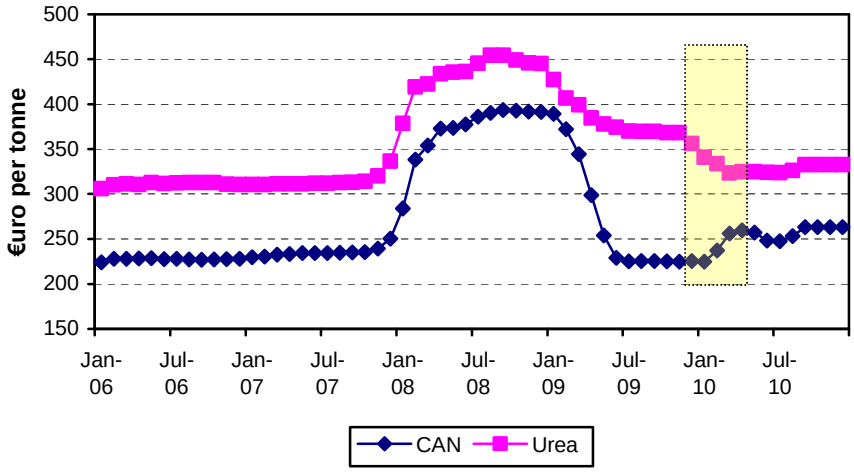
Pasture and forage costs typically comprise about 20 percent of total production costs on dairy farms. Fertiliser purchases comprise about half of this figure, with contractor costs accounting for most of the remainder.

The fall in nitrogen prices observed in 2009 was followed by a period of relatively stable prices for much of 2010. However, as 2010 drew to a close there were signs that another cycle of rising fertiliser prices may have begun.

Figure 9 charts the monthly index of farm level fertiliser prices from 2006 through to 2010 in Ireland. In Ireland fertiliser prices reached their peak in December 2008 and while Urea prices were relatively flat in 2010, CAN prices began to move upwards once more, albeit from levels which are low relative to the price spike of 2007-2009. On a calendar year basis, fertiliser prices are down by about 15 percent in 2010 relative to 2009. The decrease in CAN prices has not been as pronounced as in the case of Urea.

The bulk of the fertiliser purchasing on dairy farms takes place in the first half of the year. The typical fertiliser purchase period is indicated in Figure 9 by the highlighted observations in the early months of the year. On this basis, dairy farmers generally will have benefited from low fertiliser prices in 2010. It is estimated that the fertiliser prices paid by dairy farmers in the first half of 2010 were down 20 percent in the case of CAN and down 17 percent in the case of Urea relative to the corresponding period in 2009. On this basis, it is estimated that there was a 15 percent decrease in fertiliser prices in 2010, although this may have varied somewhat depending on the time of purchase on individual farms.

Figure 9: Monthly Price Index of fertiliser (average of all compounds) in Ireland for 2006 to 2010

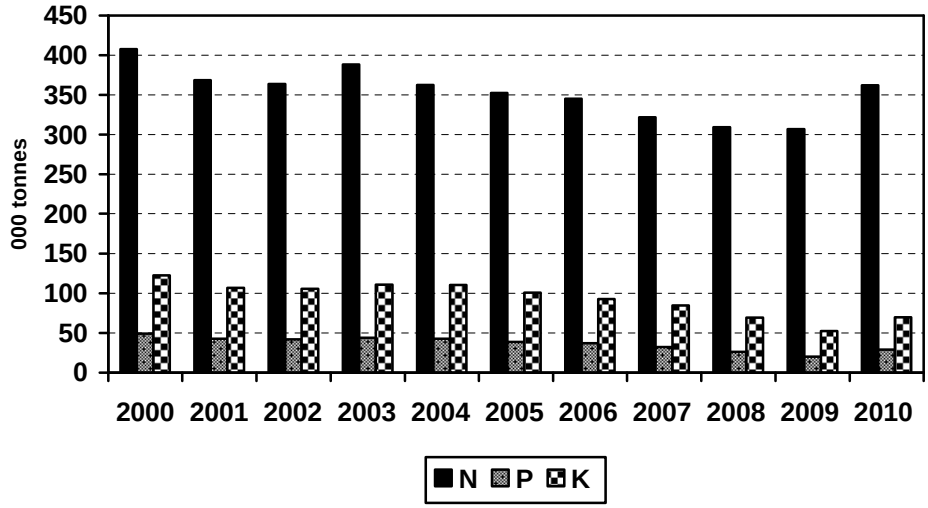


Source: Central Statistics Office (Various Years)

On the volume side, DAFF figures indicate that fertiliser sales in the 2010 fertiliser year (October 2009/September 2010) have increased substantially for all three elements, with larger increases recorded for P (up 47 percent) and K (up 44 percent) in comparison with N (up 23 percent). These fertiliser sales data are reported in Figure 10. While these *sales* data are a good indicator of the direction of trend in fertiliser *application*, they are a less accurate reflection of the magnitude of such changes. In other words, the change in the application rate in 2010 relative to 2009 may not be as large as the sales data would suggest, as stock levels may have increased in 2010 in anticipation of higher prices in 2011. More definitive figures will be obtained from the National Farm Survey result for 2010 when these become available.

A number of reasons for this increase in fertiliser use in 2010 can be put forward. Firstly, fertiliser prices in 2010 were at their lowest level since 2006 which would itself encourage increased usage levels. Secondly, the high level of milk prices and the strong recovery in the volume of milk production in 2010 would have generated some additional fertiliser demand. Thirdly, it is considered that the continued sharp decline in fertiliser usage in the preceding 5 years (particularly in the case of P and K) may have led to nutrient deficits on some farms and a requirement that this be addressed in 2010.

Figure 10: Irish Fertiliser Sales by Compounders 2000 to 2010



Source: DAFF (various years)

It is estimated that fertiliser use on dairy farms increased by about 15 percent in volume terms in 2010 relative to 2009. A more precise figure will be obtained from the forthcoming National Farm Survey results.

Overall, taking account of the decline in fertiliser price and increase in volume, this suggests that there has been a marginal decline of about 2 percent in fertiliser expenditure on dairy farms in 2010 compared with the 2009 level.

3.1.3 Contractor Costs usage and price 2010

Fertiliser costs comprise about 50 percent of total pasture and forage costs, with the remaining half made up of contractor costs. While no official figures are available, there is reason to believe that there may have been some upward movement in contracting costs in 2010, reflecting the rise in fuel prices due to higher crude oil prices and the introduction in Ireland of the carbon tax. Reports also suggest that the silage area in 2010 was up on the 2009 level. On this basis, it is estimated that silage making costs increased by 5 percent in 2010.

3.1.4 Pasture and Forage – usage and price 2010

With fertiliser expenditure down 2 percent relative to 2009, and contracting costs increasing by 5 percent, the overall estimated increase in pasture and forage costs for 2010 is 2 percent.

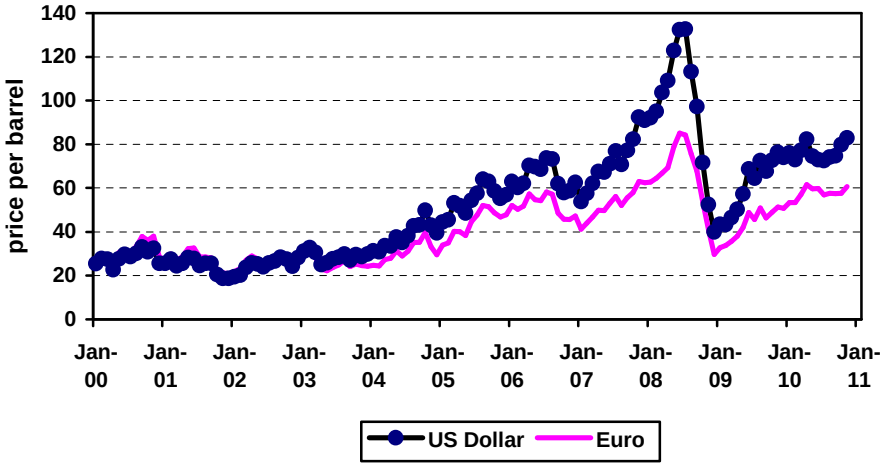
3.1.5 Energy and Fuel – usage and price 2009

Energy and fuel are less important inputs in dairy production, comprising just 8 percent of total costs on dairy farms. Electricity typically comprises about 30 percent of the total expenditure on energy and fuel on dairy farms, with fuel accounting for the remaining 70 percent.

Motor Fuel: Crude oil prices are presented in Figure 11. Prices have moved over a wide range since 2005. This pattern continued in 2010 with oil rising from a monthly average of $74 per barrel (pb) in Jan 2010 to reach a monthly average of close to $90 pb in December 2010. The average price for 2010 was $76 pb.

The euro weakened versus the US dollar in 2010 which means that the extent of the percentage and absolute crude oil price increase relative to 2009 was larger when expressed in euro terms than in dollar terms. The average crude oil price for 2010 was €58, an increase of 32 percent on the 2009 value of €44 pb. A carbon tax was introduced in mid 2010, which also put upward pressure on fuel prices in Ireland. Overall, as a result of rising crude oil prices, a weakening of the euro against the US dollar and the introduction of the carbon tax, fuel costs in Ireland have increased significantly, with diesel prices approximately 17 percent higher in 2010 relative to the 2009 level.

Figure 11: Monthly Average Brent Crude oil prices in Euro and US dollar from 2000 to 2010



Source: St Louis Fed

Electricity: Electricity costs change infrequently in Ireland due to price regulation. The most recent price change was a decrease in October 2009 and prices have been unchanged through 2010. On an annual average basis this means that prices have fallen by about 6 percent in 2010, relative to 2009.

Energy and Fuel: Demand by farmers for fuel and electricity tends to be relatively inelastic with respect to price. Therefore, it is assumed that usage in 2010 will be on a par with the 2009 level. The overall expenditure on electricity in 2010 is anticipated to have decreased by 5 percent on the 2009 level, while expenditure on fuel in 2010 is likely to have increased by 17 percent on the 2009 level. Overall, expenditure on energy and fuel on dairy farms is estimated to have risen 10 percent in 2010 relative to 2009.

3.1.6 All Other Direct and Fixed Costs– usage and price 2010

Agricultural wages in Ireland are unlikely to have changed in 2010. Again, it is assumed that the quantity of labour used on farms is likely to have changed little year on year. With the volume of labour assumed to be unchanged, labour costs are estimated to be unchanged in 2010 on the 2009 level. Reflecting general price deflation in the economy, it is estimated that the price of other input items fell by 2 percent in 2010. It is assumed that usage of these input items will be unchanged and, as a result, the decrease in prices is reflected in a corresponding decrease in expenditure on these items.

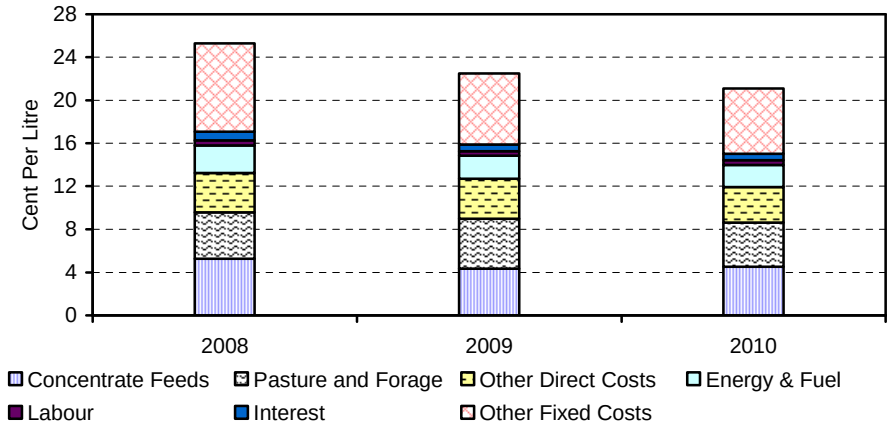
Other fixed costs fell substantially in 2009 by about 2 cent per litre, largely reflecting lower depreciation and interest charges and it is estimated that other fixed costs rose by about 2 percent in 2010.

3.1.7 Estimate of Total Input expenditure for 2010

Normally the year on year changes in national milk production in Ireland tends to be quite small due to the presence of the milk quota, which means that annual percent changes in input expenditure tend to be similar whether expressed on an enterprise, hectare or litre basis. However, an important consideration in the cost story in 2010 is that the volume of milk production rose by 7 percent nationally relative to 2009, and some of the increase in costs in 2010 is attributable to increased input usage to produce this additional output. The preceding discussion of costs reflected changes estimated on an enterprise basis. When the increase in milk output is taken into consideration and costs are expressed on a per litre basis, the cost story for 2010 is much more benign. The following text presents estimated changes in input expenditure for 2010 on a per litre basis.

Figure 12 charts the average total costs of production for all creamery milk suppliers in 2009 and the corresponding estimates for 2010. It is estimated that the total costs of production for the average creamery milk supplier in Ireland in 2010 is 21.08 cent per litre. This is equivalent to a 6 percent decrease in 2010 relative to 2009.

Figure 12: Total Costs of Milk Production in Ireland in 2008 and 2009, with estimates for 2010



Source: National Farm Survey Data (2010) and Authors' Estimates
Note: e = estimate

3.2 Estimated Output Values 2010

In Ireland the 2010 manufacturing milk price increased dramatically on the extremely low 2009 level. Monthly milk prices reached 30 cent per litre early in 2010 and were sustained at that level through the peak milk production period. Overall milk prices for the year averaged at just under 30 cent per litre on a vat inclusive basis, an increase of 29 percent on the 2009 level.

The main contributor to the price increase was higher international dairy product prices brought about by strengthening international consumption as the global economy emerged from recession. Global milk supplies also increased but the extent of the increase in global import demand meant that higher international prices were required to clear the market. In the EU, the European Commission has been selective in its disposal of stocks which has also helped to keep dairy commodity prices at an elevated level.

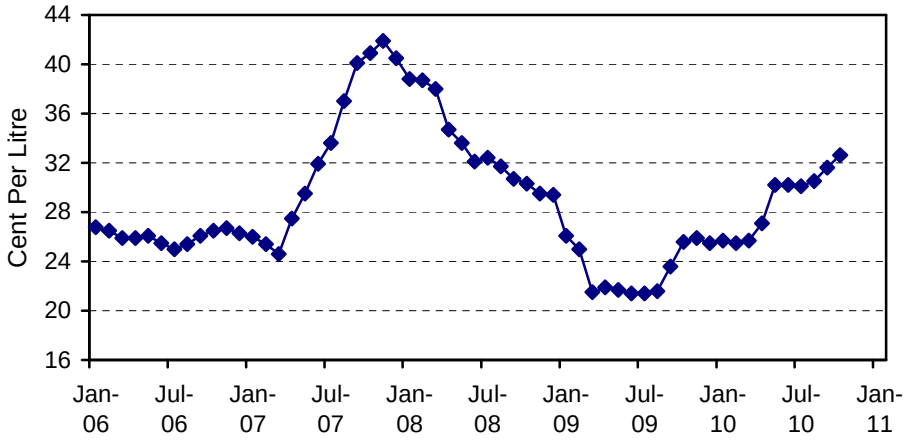
Despite a strong recovery in milk production in 2010, milk deliveries were below quota equivalent levels for the third successive year. However, 2010 was very much a year of two halves in terms of deliveries. For the first half of 2010 deliveries were below expectation, given the relatively high milk price, and were no better than in the corresponding period in 2009. However, there was a very strong increase in milk production in the second half of the 2010 and deliveries were about 15 percent higher than in the latter half of 2009. Overall, milk production in the 2010 calendar year was up over 7 percent on the 2009 level.

Irish dairy cow numbers have remained relatively stable at about 1.13 million head. Good weather conditions in the second half of 2010 and additional feed supplementation, in light of the favourable milk price, have resulted in a recovery in milk yields per cow in 2010 of approximately 7 percent on the depressed 2009 level.

While this represents a considerable recovery in production following the contraction in 2008 and 2009, Irish milk production is still below milk quota levels. As of December 2010, on a milk quota year basis, production in the 2010/11 year was running almost 3 percent below the milk quota.

Figure 13 presents the standardised fat monthly milk prices recorded by CSO from 2006 through to October 2010. The upturn in prices on international dairy markets, which began late in 2009 and which has continued into 2010, is evident.

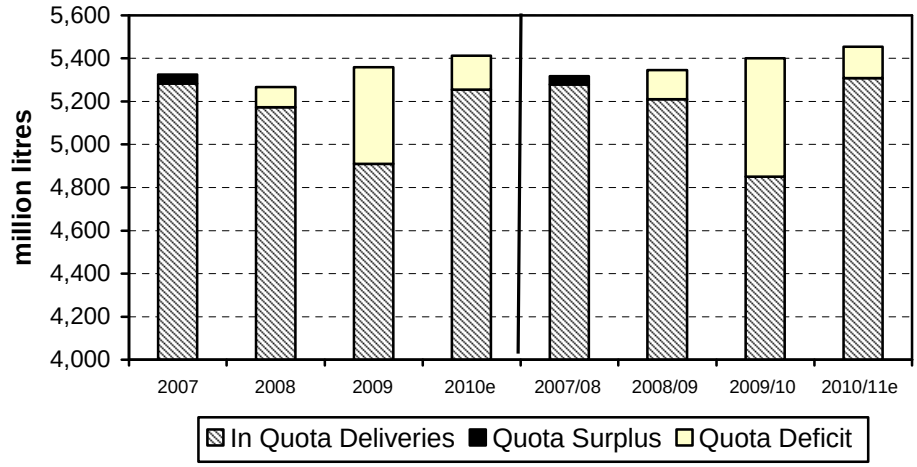
Figure 13: CSO Monthly Farm Gate Milk Prices (vat incl) 2006 - 2010



Source: Central Statistics Office
Note: 3.7 percent fat (vat incl)

The average milk price for 2010 is estimated to be just under 30 cent/litre vat inclusive. This is an increase of 7 cent, or approximately 30 percent, on the 2009 level. The impact of the higher 2010 milk price on the supply of Irish milk in 2010 can be observed in Figure 14.

Figure 14: Irish milk deliveries (fat adjusted) and quota surplus/deficit (calendar and quota year basis)



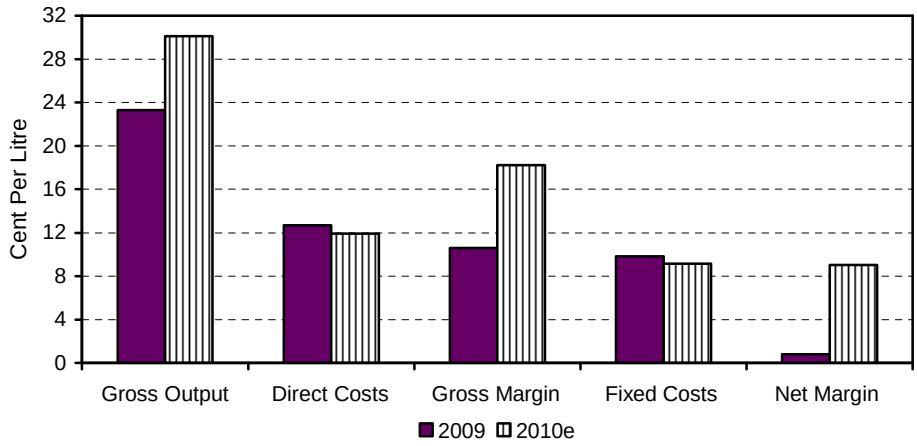
Source: Adapted from CSO Data and Authors' calculations
Note: Figures excludes imported milk for processing
e = estimate

On a calendar year basis Irish milk deliveries in 2010 will be above the 2009 level by about 7 percent. Looking at milk production relative to the milk quota, as of December 2010 the trend in cumulative monthly milk deliveries was still running 3 percent below the 2010/11 milk quota.

3.3 Review of Dairy Enterprise Net Margins in 2010

The review of milk prices showed that the average milk price for 2010 was almost 30 percent up on the average for 2009, while the review of input costs concluded that total production costs on a per litre are estimated to have decreased by 6 percent in 2010 relative to 2009. Figure 15 presents the estimated average gross output, production costs and net margin per litre for 2010 in comparison to 2009.

Figure 15: Gross output, Costs and Margins per litre for Creamery Milk Producers in Ireland in 2009 and estimated for 2010

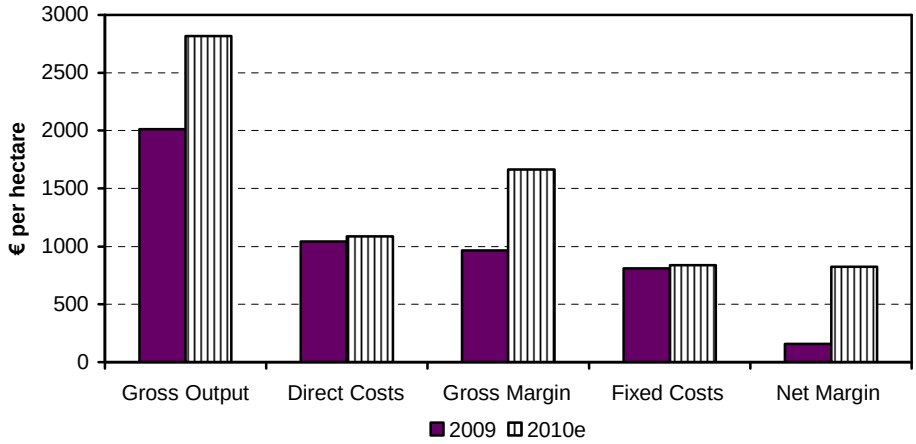


Source: National Farm Survey Data (various years) and Authors' Estimates (2009)
Note: e = estimate

Gross output values are estimated to have increased considerably in 2010 to just over 30 cpl, while input costs declined giving rise to a recovery in margins to 2008 levels. It is estimated that the average net margin per litre increased from less that 1 cpl in 2009 to 9 cpl in 2010.

Net margin on a per hectare basis is set out in Figure 16. Net margin per hectare recorded a substantial increase from 2009 to 2010, rising from an average of €157 per hectare in 2009 to € 826 per hectare in 2010.

Figure 16: Gross output, Costs and Margins per hectare for Creamery Milk Producers in Ireland in 2009 and estimated for 2010



Source: National Farm Survey Data (various years) and Authors' Estimates (2009)
Note: e = estimate

It is estimated that gross output per hectare increased by 37 percent from 2009 to 2010. This is considerably more than the increase recorded on a per litre basis and this is because there was an increase in the volume, as well as the value of production. Similarly costs of production increased more when expressed on a per hectare basis. Although the per unit cost of producing a litre of milk declined in 2010, the volume of production on a per hectare basis increased and therefore costs of production per hectare increased also. Net margin per hectare recorded an almost 5 fold increase in 2010 relative to 2009.

4. Outlook for 2011

In this section we forecast the expenditure on various input items in 2011, the annual average milk price that will prevail and the likely profit margins on dairy farms in 2011.

4.1. The Outlook for Input Expenditure

4.1.1 Feedstuffs – usage and price 2011

The 2010 Irish harvest prices for feed wheat and barley was much improved on the 2008 and 2009 figure due to the shortage of grain on international markets. Prices for cereals in 2010 were up about 60 percent on the 2009 level.

It is anticipated that milk production will increase by 2 to 3 percent (a quota binding level) in 2011 relative to the 2010 level, that milk prices will hold firm and that feed prices will rise considerably. Assuming that the unusual weather conditions in 2010 are not repeated, some reduction in concentrate use relative to 2009 may be achievable. Taking these offsetting factors together, it is considered that feed usage levels in 2011 are projected to decline by about 5 percent in 2011.

Farmers purchasing feed in 2011 can expect to pay considerably more than they did in 2010 due to the elevated 2010 harvest prices. Expectations are that prices for imported feeds will move upwards in 2011 with forecasts of increased prices for cereals of about 5 percent on the 2010 level. Overall, an increase in feed prices of 20 percent is forecast for dairy farms in 2011. A 20 percent increase in feed price, coupled with a 5 percent decline in feed volume would leave feed expenditure in 2011, 15 percent higher the 2010 level.

4.1.2 Fertiliser & Contracting Costs– usage and price 2011

Rising energy prices, rising commodity prices and a contraction in supply capacity provide a basis for higher fertiliser prices in 2011. Global fertiliser consumption has now recovered so that production and consumption are in balance. As a result, fertiliser prices have been on an upward trend since mid 2010 and this trend will continue into 2011.

Further upward adjustment in Urea and CAN prices can be expected. International price increases could be of the order of 15 to 20 percent in 2011 relative to the 2010 level. As a result, the prices paid for fertiliser by Irish dairy farmers in the first half of 2011 will be well up on the 2010 average level.

It is reasonable to expect that fertiliser usage levels in 2011 will be below the 2010 level, perhaps by as much as 10 percent.

With prices up 20 percent and usage down 10 percent, this would leave total expenditure on fertiliser up 10 percent in 2011. Factoring in no change in contractor charges in 2011, would mean that total expenditure on pasture and forage would be up about 5 percent in 2011 on the 2010 level.

Given that fuel prices are expected to increase further in 2011 an increase in agricultural contracting costs of 5 percent is forecast.

With fertiliser expenditure down forecast to increase by 10 percent relative to 2009, and contracting costs increasing by 5 percent, the overall estimated increase in pasture and forage costs for 2010 is 8 percent.

4.1.3 Energy and Fuel – usage and price 2011

Following the progressive increase in crude oil prices in 2010, and with natural gas prices also showing upward movement, an increase in energy expenditure on farms in 2011 seems inevitable.

As of December 2010, the average crude oil futures price for 2011 is about $90 pb. This equates to about €69 pb at December 2010 exchange rates which would represent an increase of about 18 percent on the 2010 level. On this basis, and taking account of the forthcoming increase in the carbon levy, we estimate that the annual average price of farm diesel will increase by at least 12 percent in 2011 relative to the average for 2010.

The rise in fossil fuel prices may lead to an increase in electricity prices of the order of 5 percent in 2011 relative to 2010.

This would leave overall expenditure on energy and fuel up about 10 percent in 2011 relative to the 2010 level.

4.1.4 Other Direct and Fixed Costs – usage and price 2011

The continuing weakness of the Irish economy is likely to stifle any increase in labour costs and general inflation in 2011. Therefore, labour costs are forecast to be unchanged, while expenditure on other direct inputs is projected to decline by 2 percent in 2011. The increase in fixed costs such as interest changes and depreciation is likely to be no more that 3 or 4 percent relative to the 2010 level.

4.2. The Outlook for Dairy Markets in 2011

As of December 2010 there are no real market negatives in prospect that would point to a decrease in the annual average level of dairy product and milk prices in 2011 relative to 2010. International consumption of dairy products is likely to remain firm. Exports from the Southern Hemisphere may be constrained due to the onset of drought conditions in Australia and New Zealand. Production capacity in grain intensive dairy regions may be stifled by high feed prices.

In the EU some expansion in milk production in Member States where the quota is not binding could emerge in 2011, but equally any additional production could be choked off by higher feed prices in Member States where grass based production is not dominant.

European Commission stocks of SMP remain considerable, but at present it seems that there is no strong intention to release these in the short term.

A feature of Irish milk prices over the last three years has been the extent of the volatility that has been observed in comparison with our EU competitors. The Irish dairy sector is a residual supplier to the EU market and also has a significant exposure to third country markets. The sector therefore benefits disproportionately in times of short supply (such as 2007, 2008) and is disproportionately worse off in times of excess supply (such as 2009). In an Irish context the dairy market situation in 2011 look like it may be more in keeping with 2008 with relatively high milk prices offsetting elevated input costs and allowing margins in 2011 to at least be maintained and possibly improved on the 2010 level.

Overall, it is estimated that annual average milk price in 2011 could be 31 cent/litre and as of December 2010, there is the possibility of prices improving further to an annual average of 32 cent/litre if the tight market conditions described above transpire.

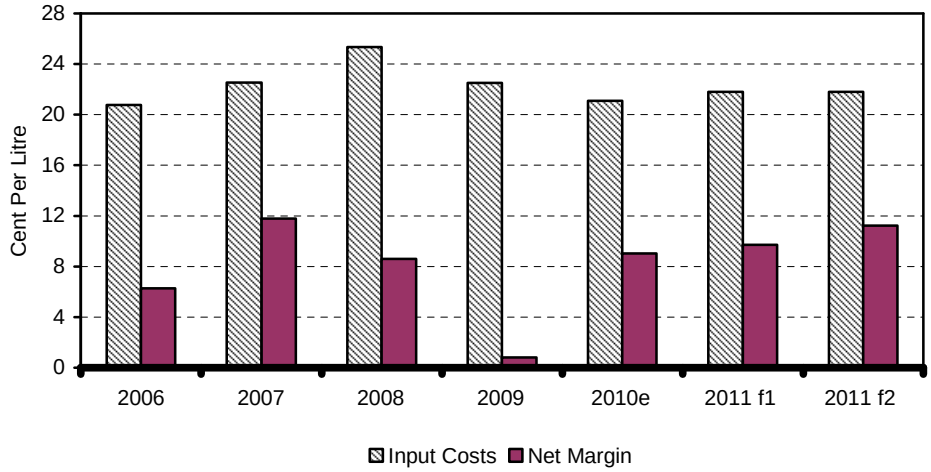
4.3. The Outlook for Dairy Enterprise Net Margin in 2011

In aggregate, input expenditure is expected to increase in 2011, by approximately 3.5 percent, but with an offsetting positive movement in milk prices, net margins in 2011 could be at least maintained at 2010 levels and possibly improved on if milk prices rise sufficiently.

In Figure 17 we present two possible 2011 outcomes for net margins based on a 5 percent increase in milk price to over 31 cent per litre and a 10 percent increase in milk price to over 32 cent per litre.

Under the f1 forecast the average net margin for 2011 is estimated to be 9.7 cpl, which would be similar to the 2010 level. Under the f2 forecast, the average net margin would be about 11.2 cpl, closer to the 2007 level.

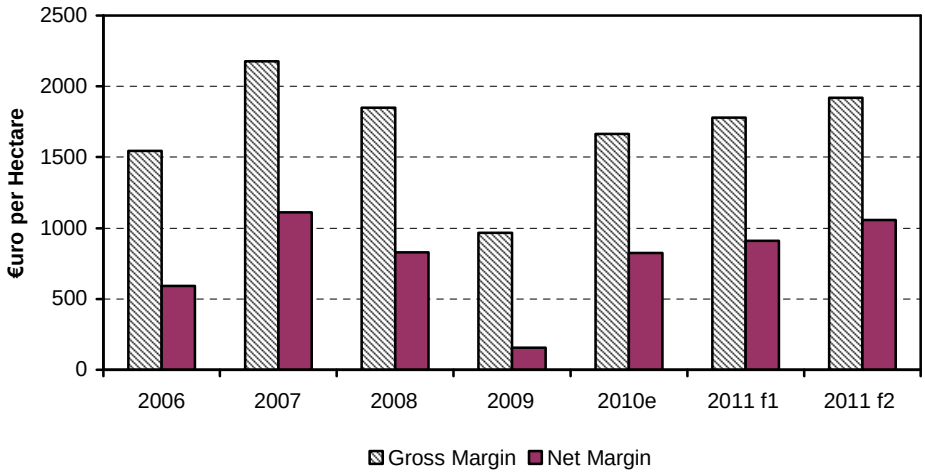
Figure 17: Net Margin for Creamery Milk Producers in Ireland in 2006- 2009 with estimate for 2010 and forecasts for 2011



Source: National Farm Survey Data (Various Years) and Authors' Estimates (2010 & 2011)
Note: e = estimate
f1 = forecast based on 5% milk price rise f2 = forecast based on 10% milk price rise

Figure 18 presents margins on a per hectare basis. The average gross margin per hectare has varied tremendously over the last 4 years, with values of € 2,177 in 2007, € 1,850 in 2008, € 967 in 2009 and €1,664 in 2010. Based on the forecast range for milk prices in 2011 and allowing for some further increase in production of 2 to 3 percent to fill the milk quota, average gross margins per ha would be in the range of €1,780 to €1,920 per ha.

Figure 18: Gross and Net Margin per hectare with forecasts for 2011



Source: National Farm Survey Data (Various Years) and Authors' Estimates
Note: e = estimate
f1 = forecast based on 5% milk price rise f2 = forecast based on 10% milk price rise

5. Concluding Comments

Following a severe decline in dairy margins in 2009, a significant recovery in dairy margins emerged in 2010. The dairy sector in Ireland benefited particularly from much improved world market conditions and relatively stable overall production costs.

Projected supply and demand conditions suggest that dairy market prices will remain high in 2011, but costs for feed, fertiliser and fuel will increase much as they did back in 2008.

Despite the projected increased cost in 2011, margins should be at least maintained at 2010 levels, and the Irish milk quota should be filled for the first time since 2007/2008.

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Appendix: Tables referring to Figures in the Text

Table A1: Number of Active Milk Quota Holders in Ireland 1994 - 2010

	1994	1996	1998	2000	2002	2004	2006	2008	2010
Quota holders	40,912	36,542	33,101	29,076	26,622	23,767	22,042	19,600	18,300

Source: Department of Agriculture (2010)
See also Figure 1 in the main text

Table A2: Variation in Total Costs of Milk Production across all Creamery Milk Producers in Ireland in 2009

	2009 HC	2009 MC	2009 LC	2009 All
	cent per litre			
Concentrate Feeds	5.62	4.35	3.15	4.36
Pasture and Forage	5.85	4.44	3.68	4.65
Other Direct Costs	4.36	3.51	3.15	3.67
Energy & Fuel	2.66	2.03	1.77	2.15
Labour	0.79	0.26	0.25	0.43
Interest	0.92	0.61	0.36	0.63
Other Fixed Costs	8.34	6.51	4.98	6.6

Source: National Farm Survey (Various Years)
Notes: HC Higher Cost MC Moderate Cost LC Lower Cost
See also Figure 2 in the main text

Table A3: Range of Concentrate Feed per Cow across all Dairy Farms in 2009

Feed Per Cow	**>550kg**	**550-750kg**	**750-1100kg**	**>1,100kg**
Percentage of Farmers	25	20	30	25

Source: National Farm Survey (Various Years)
See also Figure 3 in the main text

Table A4: Variation in Net Margin across all Creamery Milk producers in Ireland in 2009

	High Cost	Moderate Cost	Low Cost	All
	cent per litre			
Gross Output	23.94	23.39	22.97	23.43
Net Margin	-4.61	1.68	5.65	0.79

Source: National Farm Survey (Various Years)
See also Figure 4 in the main text

Table A5: Variation in Total Costs of Milk Production across all Creamery Milk Producers in Ireland in 2000 to 2009

	2003	2006	2007	2008	2009
	cent per litre				
Concentrate Feeds	3.52	3.84	4.20	5.26	4.36
Pasture and Forage	3.19	3.63	3.49	4.30	4.65
Other Direct Costs	3.19	3.18	3.45	3.67	3.67
Energy & Fuel	1.20	2.18	2.33	2.55	2.15
Labour	0.41	0.38	0.44	0.46	0.43
Other Fixed Costs	6.71	7.54	8.60	8.21	7.22

Source: National Farm Survey (Various Years)
See also Figure 5 in the main text

Table A6: Variation in Net Margin of Milk Production across all Creamery Milk Producers in 2007 to 2009

	High Cost	Moderate Cost	Low Cost	All
	cent per litre			
2007	6.23	11.85	17.30	11.80
2008	2.34	9.00	14.50	8.62
2009	-4.61	1.68	5.65	0.79

Source: National Farm (Various Years)
See also Figure 5 in the main text

Table A7: Average concentrate feed purchases per dairy cow in Ireland: 2006 to 2010

	2006	2007	2008	2009	2010e
	Kg per cow				
Feed use	852	769	793	702	782

Source: National Farm Survey (Various Years) and Authors' Estimates
Note: e = estimate f = forecast
See also Figure 7 in the main text

Table A8: Irish Fertiliser Sales by Compounders 2000 to 2010

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
	000 tonnes										
N	408	369	364	388	363	352	345	322	309	307	362
P	49	43	42	44	43	39	37	32	26	20	29
K	123	107	106	111	111	101	93	85	70	52	70

Source: DAFF (Various Years)
See also Figure 10 in the main text

Table A9: Total Costs of Creamery Milk Production in Ireland 2008, 2009 and estimates for 2010

	2008	2009	2010e
	cent per litre		
Concentrate Feeds	5.26	4.36	4.54
Pasture and Forage	4.30	4.65	4.10
Other Direct Costs	3.69	3.67	3.27
Energy & Fuel	2.59	2.15	2.07
Labour	0.47	0.43	0.44
Other Fixed Costs	9.02	7.23	6.66

Source: National Farm Survey (Various Years) and Authors' Estimates
See also Figure 12 in the main text
Note: e = estimate

Table A10: Gross Output, Costs and Margins for Creamery Milk Producers in Ireland in 2009 and estimated for 2010

	Gross Output	Direct Costs	Gross Margin	Fixed Costs	Net Margin
			cent per litre		
2009	23.3	12.68	10.6	9.83	0.8
2010e	30.12	11.92	18.2	9.16	9.04

Source: National Farm Survey (Various Years) and Authors' Estimates
See also Figure 15 in the main text
Note: e = estimate

Table A11: Gross output, Costs and Margins per hectare for Creamery Milk Producers in Ireland in 2009 and estimated for 2010

	Gross Output	Direct Costs	Gross Margin	Fixed Costs	Net Margin
	Euro per hectare				
2009	2,011	1,044	967	810	157
2010e	2,818	1,089	1,664	838	826

Source: National Farm Survey (Various Years) and Authors' Estimates
See also Figure 16 in the main text
Note: e = estimate

Table A12: Net Margin for Creamery Milk Producers in Ireland in 2006- 2009 with estimate for 2010 and forecasts for 2011

	2006	2007	2008	2009	2010e	2011 f1	2011 f2
	Cent Per Litre						
Input Costs	20.75	22.52	25.32	22.51	21.08	21.81	21.81
Net Margin	6.29	11.8	8.62	0.79	9.04	9.72	11.23

Source: National Farm Survey (Various Years) and Authors' Estimates
See also Figure 17 in the main text

Table A13: Net and Gross Margin per hectare for Creamery Milk Producers in Ireland

	2006	2007	2008	2009	2010e	2011 f1	2011 f2
	Euro per hectare						
Gross Margin	1,543	2,177	1,850	967	1,664	1,780	1,920
Net Margin	592	1,108	829	157	826	911	1,057

Source: National Farm Survey (Various Years) and Authors' Estimates
Note: e = estimate f = forecast
See also Figure 18 in the main text

SITUATION AND OUTLOOK FOR CATTLE 2010/11

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1. Introduction

This paper presents a review of the economic performance of cattle production in 2009 based on data provided by the National Farm Survey (Connolly et al. 2010). Estimated returns from cattle production in 2010 and the forecast outlook for 2011 are also presented.

Overall, cattle prices in 2010 were on average slightly higher than in 2009, and this has led to an increase in the value of cattle production on Irish farms. The impact of these higher output prices on margins was reinforced by lower concentrate feed and fertiliser prices that led to lower input expenditure. Average gross margins on cattle production enterprises are estimated to have increased in 2010 relative to 2009; however the prevalence of negative market-based net margins on Irish cattle production systems persisted in 2010. The outlook for cattle markets in 2011 is positive, the ongoing contraction in EU production and a recovery in demand due to the re-emergence of positive economic growth in Irish export markets is expected to lead to increased cattle prices in 2011.

Unless stated otherwise, all figures referred to in this paper are in nominal terms and all income and profit estimates exclude the value of decoupled income support payments.

2. Review of the Economic Performance of Beef Farms in 2009

In total 93,000 farms or 90 percent of the NFS population have a cattle enterprise on their farm, making cattle production by far the most prevalent agricultural enterprise on Irish farms. Given the large number of Irish farms with a cattle enterprise and the large variation that exists between the cattle systems operated, a high degree of variation in output values and production costs between farms can be expected.

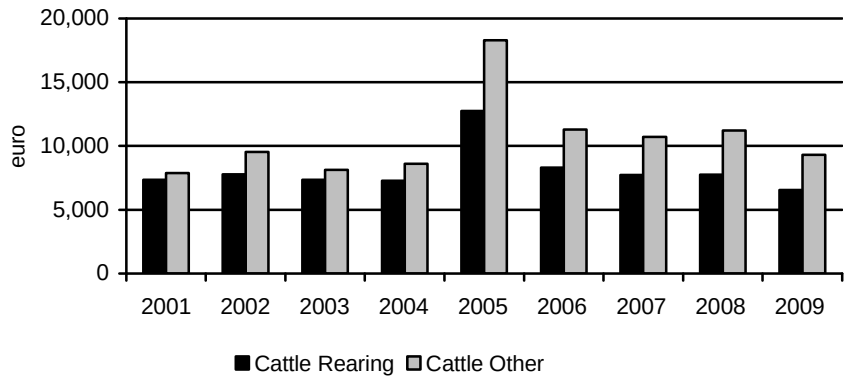
There is considerable heterogeneity in Irish beef production systems. However, as noted earlier, many farms that are not classified as cattle farms under the NFS farm typology have a beef enterprise. All farms, both specialist cattle and non-specialist cattle farms, with greater than 5 cattle livestock units are included in this analysis. In Section 2 we analyse the economic performance of Irish cattle production in 2009 by classifying

these farms on the basis of their dominant cattle system. In sections 3 and 4 we present the estimated net margin performance of Irish cattle farms in 2010 and the forecasted net margin performance for 2011 respectively. Net margin is calculated as gross margin less overhead costs. The allocation of overhead costs (sometimes referred to as fixed costs) to the various enterprises on a farm is done on the basis of the enterprise shares of farm gross output.

The trends in average family farm income (FFI) for the two main classifications of cattle farms in the Teagasc National Farm Survey (NFS) over the period 2001 to 2009 are shown in Figure 1. In 2009 the average FFI on cattle rearing and cattle other farms decreased significantly when compared with 2008. FFI on the *Cattle Rearing* farms declined by over 15 percent when compared with the 2008 level, while FFI on *Cattle Other* farms, at €9,302, was almost 17 percent lower than in 2008.

Figure 1 also illustrates that the divergence between the average FFI earned on farms in the cattle rearing system and the average income earned on the cattle other system that emerged post decoupling has been maintained. In 2001 the difference in average FFI between cattle rearing and cattle other farms was €500. By 2009 the difference in average family farm incomes earned on these two cattle farm types was over €2,700. As noted in Breen and Hanrahan (2010) this divergence is a consequence of the decoupling of direct payments and the negative impact of this decision on the prices of weanlings and store animals sold by cattle rearing enterprises and the positive impact of this change on the income of those farms purchasing and finishing these animals.

Figure 1: Family Farm Income on Cattle Rearing and Cattle Other Farm Systems: 2001 to 2009



Source: National Farm Survey (various years).

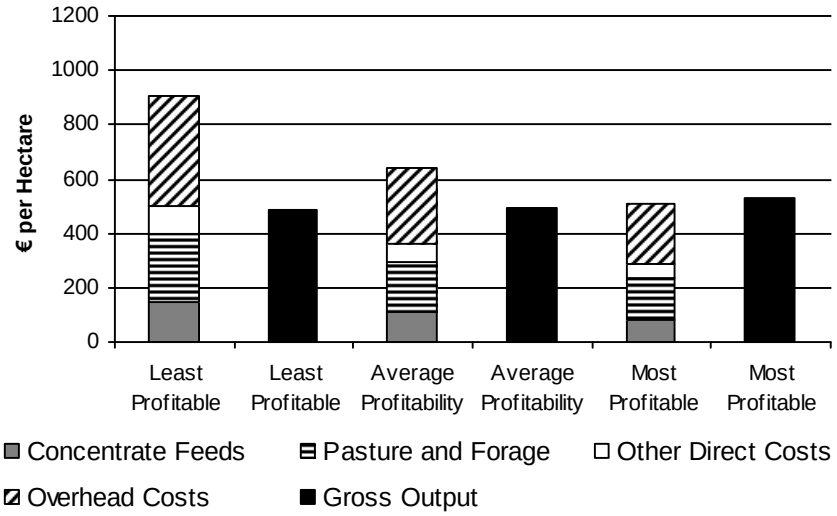
Specialist cattle farms, as defined by the NFS farm typology, account for approximately 56,200 farms or just over 55 percent of the NFS farm population. However, there were a further 36,700 non-specialist cattle farms that also had a cattle enterprise in 2009.

2.1 Comparison of Alternative Beef Production Systems in 2009

This section discusses the cost structure for four of the more common categories of beef production systems prevalent in Irish agriculture: single suckling (SS), cattle born to dairy cows and reared on dairy farms (RD), weanling to store/finish (WF) and store to finish (SF). We have categorised each of the four cattle enterprises analysed on the basis of net margin per hectare and broken these sets of farms into three equally sized groups which we have termed farms with *least, average* and *most* profitability.

Single Suckling (SS): In 2009 the average direct cost of production per hectare (ha) for SS beef systems ranged from €497 per hectare on the least profitable farms to €290 per hectare on the most profitable farms (see Figure 2 below). This large variation in direct cost expenditure occurred in the absence of variation of any significant magnitude in the value of average gross output per hectare or stocking rate across the least, most and average profitability farms. The cost of concentrate feed along with the cost of pasture and winter forage accounted for 80 percent of the direct costs of production on SS farms. The average expenditure on concentrate feed varied from €144 per hectare on the low profitability farms to only €80 per hectare on the high profitability farms. As shown in Figure 2, considerable variability in the other overhead cost category also exists between farms, with the level of overhead costs per hectare varying from €409 on the least profitable farms to €218 per hectare on the most profitable third of single suckling farms. The most profitable one-third of SS farms earned an average gross output of €527 per hectare in 2009.

Figure 2: Variation in Gross Output and Total Production Costs on Single Suckling Beef farms in 2009



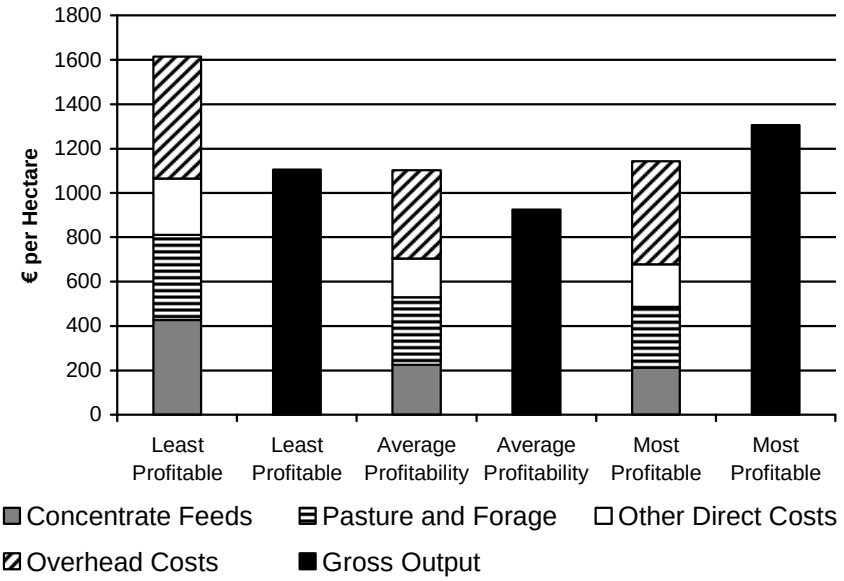
Source: 2009 National Farm Survey Data (2010).

Cattle Reared on Dairy Farms (RD): The second production system analysed involves the rearing of cattle born from the farm's dairy herd. There are a number of points to note when comparing the RD production system with the SS system. First, while the average gross output earned on RD farms is significantly larger than that earned on SS farms, this is associated with higher average direct costs of production. These higher gross output and costs of production per hectare on RD farms are largely due to the higher stocking rate on these farms when compared with SS farms. The average stocking rate on the RD farms in 2009 was approximately 1.8 cattle livestock units per forage hectare compared with between 1.2 and 1.3 livestock units per forage hectare for the other three cattle systems examined.

Average direct costs on the three groups of RD farms range from €678 to €1,066 per hectare, see Figure 3. These higher costs are due to high levels of expenditure on concentrate feed and other direct costs. The high expenditure on concentrate feed is due to the earlier weaning of calves on dairy farms and the fact that, other things being equal, finishing dairy cross cattle generally requires higher volumes of concentrate feed per animal than would be required for non dairy cross animals. The high level of other direct costs on RD enterprises is due to the cost of milk and milk substitutes that are fed to calves. While the expenditure on concentrate feed and other direct costs on RD farms are double the level on SS farms, expenditure on

pasture and winter forage on RD farms is somewhat closer to the level of expenditure on SS enterprises. The most profitable one third of RD farms had a gross output of €1,307 per hectare compared with €1,105 per hectare on the least profitable farms.

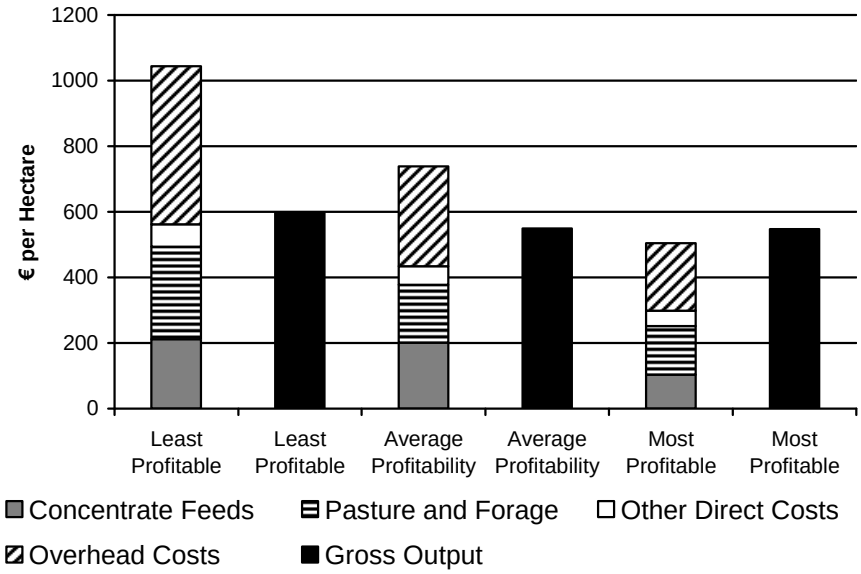
Figure 3: Variation in Total Production Costs and Gross Output on Cattle Reared on Dairy farms in 2009



Source: 2009 National Farm Survey Data (2010).

Weanling to Finish (WF): The direct costs of production on farms specialising in buying weanlings which are either sold as finished animals or sold as stores (WF), are in general more variable than those incurred on SS or RD enterprises. The direct costs of production on the weanling to store/finish system in 2009 ranged from €562 on the enterprises in the least profitable group, to €298 per hectare on the most profitable WF enterprise group. Most of the variability in these direct costs is due to differences in expenditure on concentrate feeds (see Figure 4). There is also a considerable degree of variability in the overhead cost category. The gross output per hectare on the least and the most profitable weanling to store/finish farms were quite similar at €596 and €547 per hectare respectively. However as is clear from Figure 4, the least profitable farms had substantially higher costs of production per hectare.

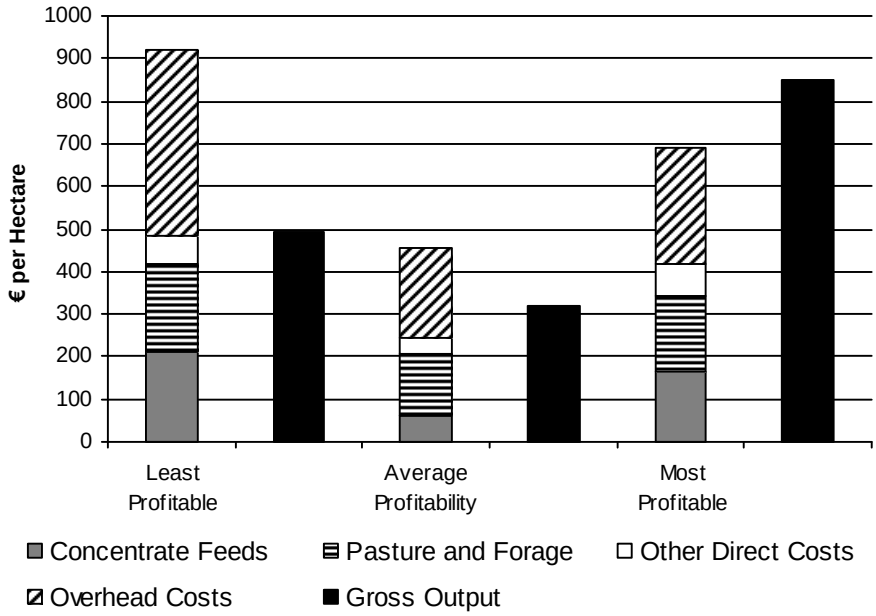
Figure 4: Variation in Total Production Costs and Gross Output on Weanling to Store/Finish Beef farms in 2009



Source: 2009 National Farm Survey Data (2010).

Store to Finish (SF): The final system examined is the store to finish system (SF) (Figure 5), in which animals are purchased as stores and brought to finish. As with the WF farms, expenditure on concentrate feed on SF farms is more variable between farms operating this system than expenditure on pasture and winter forage. Concentrate feed expenditure on SF farms in 2009 ranged from an average of €212 per hectare on the least profitable farms, to less than €62 per hectare on the average profitability farms. There was also a large degree of variation in the average gross output per hectare on the three SF farm sub-groups. Average gross output per hectare on the high profit farms was €848, while gross output per hectare on the least profitable farms was €491 per hectare.

Figure 5: Variation in Total Production Costs and Gross Output on Store to Finish Beef farms in 2009



Source: 2009 National Farm Survey Data (2010).

The results presented highlight the large differences in costs per hectare on what we have termed *least*, *average* and *most* profitable farms. However, it is important to recall that for some systems there are also substantial variations in gross output across the least, average and most profitable farm sub-groups, and that high levels of gross output per hectare are often associated with high levels of direct and overhead costs of production. On the WF and SS farms there was comparatively little variation in the value of gross output per hectare with most of the difference in profitability explained by differences in costs per hectare. On the RD and SF farms there was significant variation in both the value of gross output per hectare and the level of costs per hectare between the least, average and most profitable farm sub-groups. The farms in the most profitable one third of SF and RD groups on average had higher costs per hectare but had sufficiently higher gross output per hectare to ensure an above average profitability performance.

Table 1 summarises the average direct costs, gross output and gross margin across each of the four production systems on a per hectare basis. The highest average gross margin per hectare in 2009 was earned on the RD farms, who earned an average market based gross margin of €390 per hectare. The SF farms had an average gross margin of €332 per hectare,

while the SS and WF farms had average gross margins of €256 and €229 per hectare respectively.

Table 1: Average Market Gross Margin per Hectare across Beef Production Systems in 2009

	Single Suckling	Dairy Beef	Weanling to Finish	Store to Finish
	Euro per ha			
Gross Output	502	1101	565	575
Direct Costs	377	803	437	380
Gross Margin	125	298	129	195

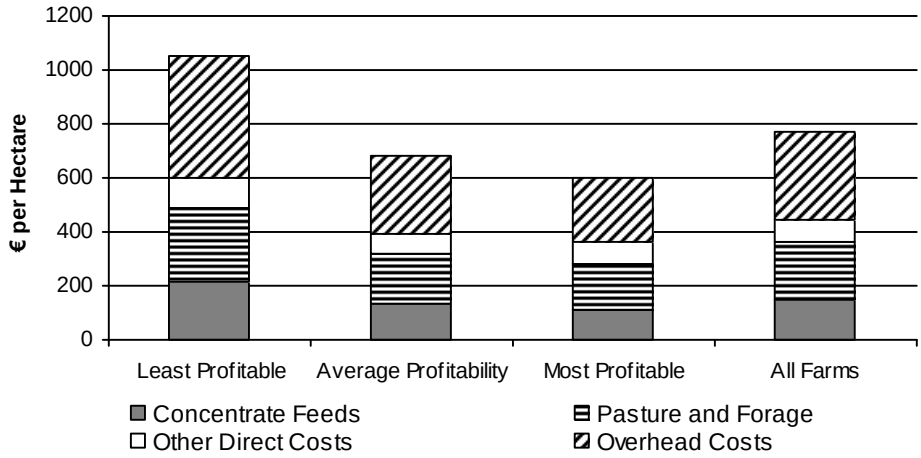
Source: 2009 National Farm Survey Data (2010).

2.2 Comparison of Returns to Cattle Production in 2009

When comparing the costs of cattle production between groups of farms organised on the basis of farm profitability there is a considerable degree of variability between the least profitable one third of cattle farms and the other two thirds of cattle farms. The average total cost of production on the least profitable one third of cattle farms in 2009 was €1,054 per hectare, which was 63 percent higher than the costs of production per hectare on the other two thirds of cattle farms. As we can see from Figure 6, expenditure on concentrate feed accounts for a large share of the difference in total costs between Irish cattle farms. The least profitable farms on average spent €214 per hectare on concentrate feeds in 2009, which is more than 75 percent higher than the average expenditure on the other two thirds of cattle farms. Average expenditure on pasture and winter forage on the least profitable cattle farms was also higher than on the farms with average and above average levels of profit per hectare. The other major difference in costs between the least profitable third of cattle farms and other cattle farms arises in the level of overhead or fixed costs. On the least profitable farms these costs amounted to €456 per hectare, almost 80 percent higher than on the most profitable one third of beef farms.

While the costs of production on the average and most profitable cattle farms are similar, the difference in their profitability is explained by differences in the value of gross output. The average gross output on the most profitable one third of cattle farms in 2009 was €677 per hectare, which is 31 percent higher than the €518 of output per hectare on the farm of average profitability.

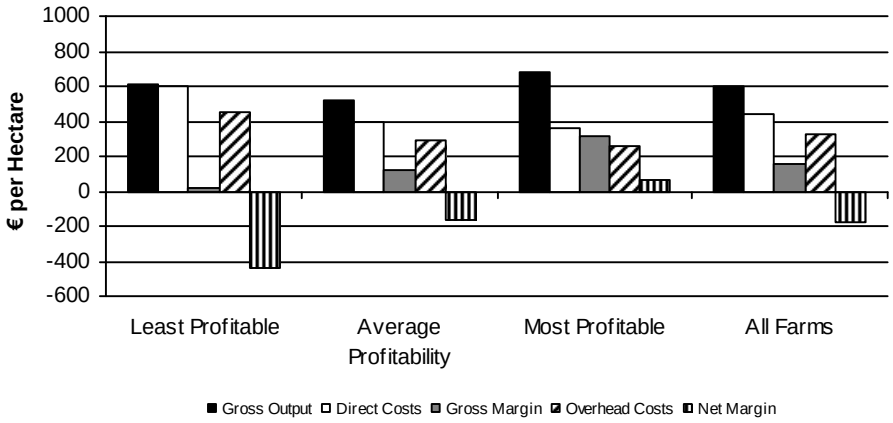
Figure 6: Variation in Total Production Costs for all Cattle farms in 2009



Source: 2009 National Farm Survey Data (2010).

The average gross margin on the most profitable farms was €318 per hectare, while the average gross margin on the least profitable one third of Irish cattle farms was €13 per hectare. Only the most profitable third of farms earned a positive average net margin from cattle production, with a net margin of €64 per hectare. The least profitable one third of Irish cattle farms in 2009 earned a negative net margin of €442 on average. It should be noted that these figures do not include the value of decoupled payments.

Figure 7: Variation in Net Market Margin per Hectare for all Cattle farms in 2009



Source: 2009 National Farm Survey Data (2010).

3. Estimated Performance of Irish Cattle Farms in 2010

This section of the paper presents a review of the economic performance of Irish cattle farms in 2010. A discussion of the estimated changes in input usage and input costs is first presented and a discussion of estimated changes in output value in 2010 follows. The estimates of margins earned by the different cattle enterprises in 2010 are then presented.

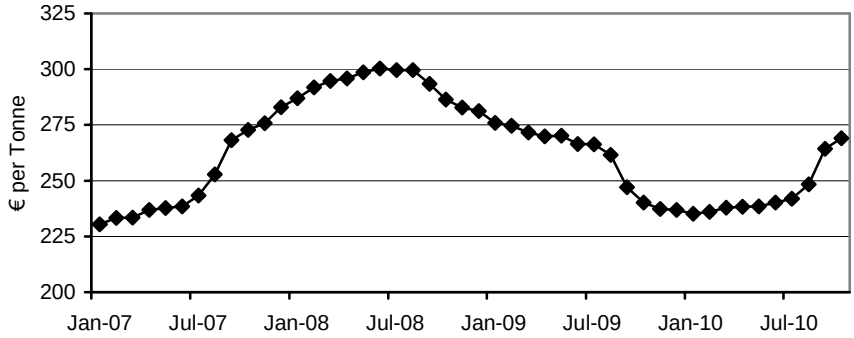
3.1 Estimated Input Usage and Price 2010

3.1.1 Feedstuffs

At the time of writing (December 2010), three quarterly bulletins of official Department of Agriculture, Fisheries and Food (DAFF) data on the quantity of beef compound feed sold were available for 2010. For the first nine months total compound beef feed sales was approximately 7 percent higher than for the equivalent period in 2009. The very cold weather in the final quarter of 2010 may have led to some increased feeding of concentrates, but it is unlikely that the change in that quarter relative to 2009 will dramatically alter the picture for 2010 as a whole. The volume of feed purchased in 2009 is estimated to have increased by 8 percent on the 2009 level.

Figure 8 illustrates the evolution of monthly beef feed prices over the period January 2007 to October 2010. Cattle feed prices were relatively stable in the first 6 months of 2010, and were over 12 percent lower than for the equivalent period in 2009. Feed prices increased in the third quarter and increased further following the main cereal harvest period. Nevertheless over the first 10 months of 2010 the average price level was over 7 percent lower than in 2009. Feed prices continued to rise through the final quarter of 2010 and taking a weighted average for the entire year, a decline of 5 percent in the price of beef concentrate feed is estimated.

Figure 8: Monthly Price of Cattle Fattening Nuts and Cubes (13-15% Protein) in Ireland for 2007 to 2010



Source: CSO.

With volumes fed anticipated to have increased by 8 percent and the average feed prices down 5 percent, this is indicative of a small increase in total expenditure on feed by beef farmers in 2010 compared with 2009.

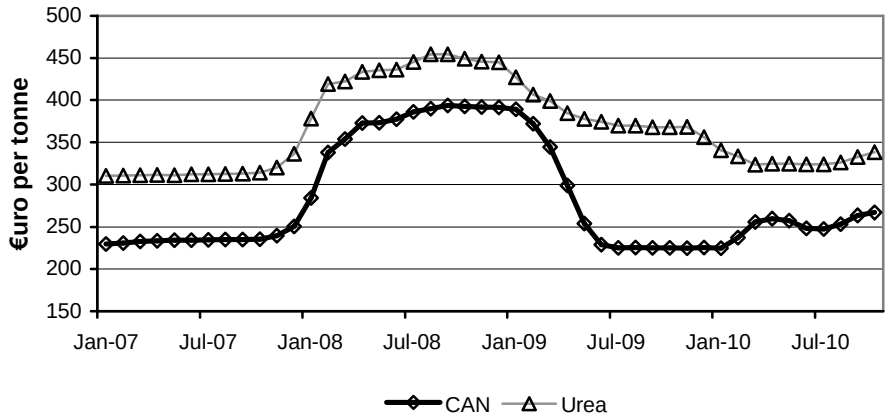
3.1.2 Fertiliser – usage and price 2010

Data from the DAFF indicate that total sales of nitrogen, phosphorous and potassium in 2010 were significantly higher than in 2009. Sales of nitrogen in 2010 were 18 percent higher than in 2009, while sales of phosphorous and potassium were 45 percent and 35 percent higher respectively. Most of the increased use of fertilisers is expected to have occurred on dairy and cereals farms. In 2010 recovering milk prices drove an increase in milk output and this was reflected in increased applications of fertiliser. The only marginal improvement in cattle output prices in 2010 means that, despite lower fertiliser prices, usage of fertiliser on Irish cattle farms is not estimated to have changed significantly in 2010. For 2010 we estimate that fertiliser usage by Irish cattle farms will be 5 percent higher than in 2009.

As can be seen from Figure 9, following the rapid decline in prices in the first two quarters of 2009, fertiliser prices have been relatively stable in 2010 at price levels close to those experienced prior to the dramatic increase in prices experienced in 2008. However, in the latter half of 2010 prices for CAN and Urea started to increase. Most fertiliser purchases made by Irish cattle farmers are likely to have occurred in the first half of the year, thus comparing spring 2009 and spring 2010 fertiliser prices gives a better idea of how Irish cattle farmers' fertiliser expenditure has developed in 2010. From such a comparison the price of CAN in 2010 is approximately 20 percent lower, while the price of urea is approximately 17

percent lower. Overall, we estimate that fertiliser expenditure by Irish cattle farmers in 2010 has declined by 13 percent relative to expenditure in 2009.

Figure 9: Monthly Price of CAN and Urea from 2007 to 2010



Source: CSO.

3.1.3 Energy and Fuel – usage and price 2010

2010 has seen global oil prices increase from $74 per barrel (pb) on average in Jan 2010 to reach $83 pb in December 2010. The average price for 2010 was €76 pb. Over the course of 2010 the euro weakened versus the US dollar which means that the extent of the percentage and absolute crude oil price increase relative to 2009 was larger when expressed in euro terms. The average crude oil price for 2010 in euro was €58, an increase of 32 percent on the 2009 value of €44 pb. A carbon tax was introduced by the Irish Government in mid 2010 and this also increased fuel prices in Ireland. Overall, as a result of rising crude oil prices, a weakening of the euro against the US dollar and the introduction of the carbon tax, fuel costs in Ireland have increased significantly, with diesel prices approximately 17 percent higher in 2010 than in 2009.

With the increase in diesel prices in 2009, it is anticipated that agricultural contracting charges will also have increased. We have estimated that contracting charges will be 5 percent higher in 2010 than in 2009. Given that most of the contractor work on cattle farms involves making silage and applying farmyard manure and artificial fertiliser, there is very little scope to reduce the "volume" of contractor services consumed if prices rise. Consequently, no further decline in expenditure as a result of a volume change is assumed and therefore the estimated 5 percent increase in price is reflected in an increase in expenditure on contract work.

Electricity costs change infrequently in Ireland due to price regulation. The most recent price change was a decrease in October 2009 and prices have been unchanged through 2010. On an annual average basis this means that prices have fallen by about 6 percent in 2010, relative to 2009. Given that no change in volume consumed is assumed to have occurred in 2010, expenditure on electricity on cattle farms is estimated to have decreased by 6 percent in 2010.

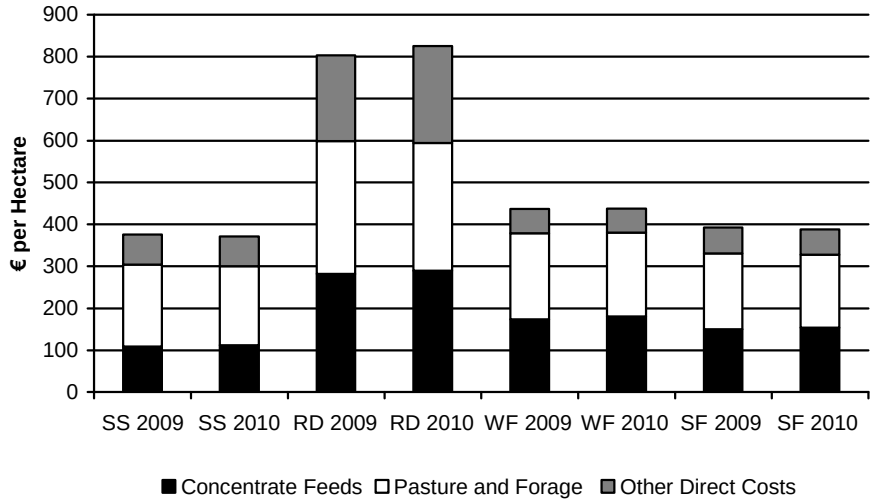
3.1.4 All Other Direct and Fixed Costs– usage and price 2010

With the continuing weakness of the Irish labour market in 2010 (reflected in rising unemployment and falling wages), agricultural wage inflation was unlikely. Despite increased availability of family labour (due to reduced off-farm opportunities) we estimate that the volume of hired labour used by Irish cattle farms will not decline relative to 2009 and that expenditure on labour on Irish cattle farms in 2010 will have been unchanged relative to 2009. Other direct costs include the value of milk and milk substitutes fed to calves and this cost is estimated to have increased significantly in line with the general improvement in milk prices seen in 2010. The cost of other overhead (fixed) costs is estimated to have decreased by 2 percent in 2010 compared with 2009, reflecting the general economy wide price deflation experienced in 2010. Given the largely fixed nature of overhead costs, there is little capacity for changes in volume used, and no change in volume or usage is assumed in 2010 compared to 2009.

3.1.5 Estimate of Direct Cost Expenditure for 2010

Figure 10 compares the average direct costs of production for the four featured production systems in 2009, with the estimated direct costs for 2010. Average direct costs on three of the four production systems are estimated to have declined slightly relative to their level in 2009. The decrease in direct costs of production on these farms in 2010 is estimated to have been driven primarily by lower fertiliser and feed costs. Direct costs on RD farms are estimated to have increased in 2010. This increase is partly the result of the strong recovery in milk prices that is estimated to have increased the cost of milk fed to calves on these dairy farms. Overall, the reduction in direct costs from 2009 to 2010 on the single suckling, weanling to store/finish and store to finish production systems is less than €6 per hectare.

Figure 10: Comparison of Actual 2009 Direct Costs and Estimated 2010 Direct Costs for main Cattle Systems



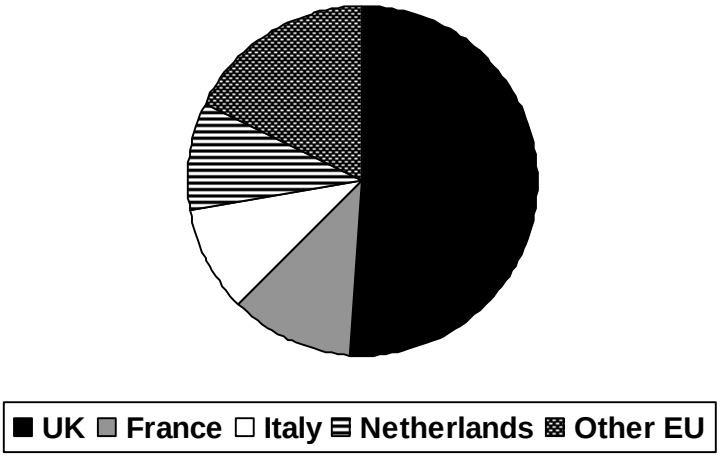
Source: National Farm Survey 2009 and Authors' Own Estimates 2010.

3.2 Estimated Output Values 2010

Ireland exports over 80 percent of its beef production and is the fifth largest exporter of beef in the world. The export dependence of the Irish beef industry means that external market developments largely determine Irish cattle prices. Thus, conditions in the particular overseas markets to which Irish beef and cattle are exported play an important role in determining Irish cattle prices.

The UK remains the largest market for Irish beef (see Figure 11). The end of the recession in the UK in Q1 2010 has led to some weak recovery in demand for beef in the UK. Since Irish beef exporters are price takers, this means that the appreciation of the pound sterling versus the euro over the course of 2010 was a factor in the slightly increased level of Irish cattle prices in 2010. Despite the stronger economic performance of most other EU Member States, cattle prices on most other EU markets were on average lower in 2010 than in 2009. The prospect of exports of beef to non-EU markets such as Turkey, which reduced the tariffs it places on imports of beef in response to large increases in internal prices in 2010, and the continuing restrictions on imports of beef from Brazil suggest that both EU and Irish cattle prices should improve in 2011.

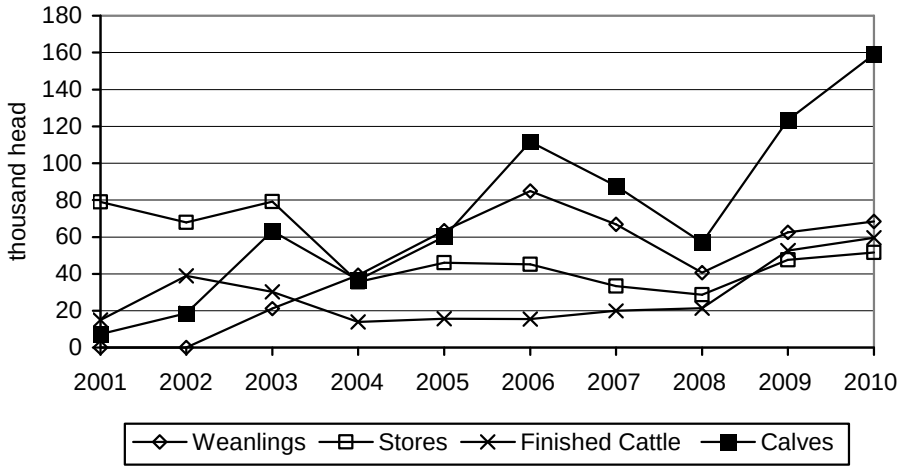
Figure 11: Composition of Irish Beef Export to EU (Volume) 2010



Source: Eurostat COMEXT, January to September.

In 2010 live exports of cattle from Ireland continued to increase, though the magnitude of the annual increase in 2010 (18 percent) was less than that observed in 2009. A buoyant live export trade continues to be an important source of demand for Irish cattle output. Most of the growth in live exports in 2010 was in calf exports, which increased by 35 percent in 2010 on the 2009 levels. This reflects the ongoing change in the composition of Irish live exports noted by Breen and Hanrahan (2010) and illustrated in Figure 12.

Figure 12: Irish live cattle Exports (2001 – 2010)



Source: Bord Bia

Trends in Irish cattle prices in recent years are presented in Figure 13. In 2010 Irish cattle prices increased relative to 2009. Finished cattle prices (R3 steer) increased by just under 2 percent to €291/100kg. The price of weanlings and store animals has also increased, with the Irish price of weanlings in 2010 approximately 2 percent higher than in 2009 and while the price of store bullocks was approximately 3 percent higher in 2010 than in 2009.

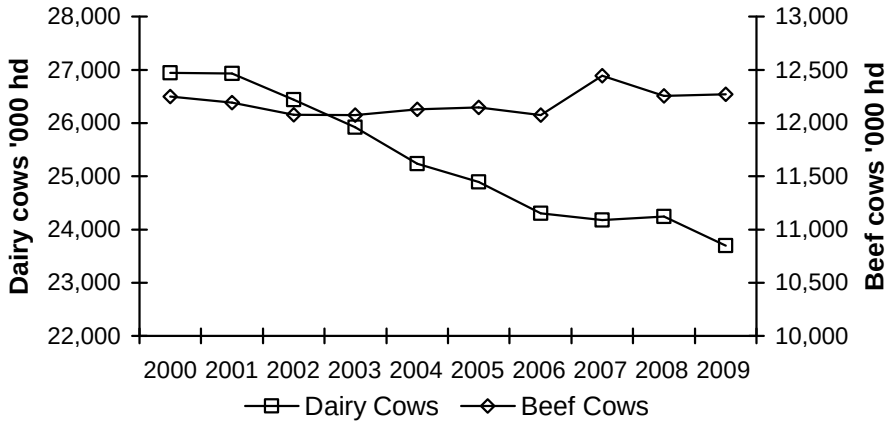
Figure 13: Irish Cattle Prices

Source: DG Agri and CSO.

3.2.1 Irish and EU Cattle Supply 2010

In the short term, some improvement in demand for beef is likely as the EU slowly recovers from the recent economic crisis. Indigenous EU supplies of beef are contracting due to the ongoing reductions in both the EU dairy and beef cow herds. In Figure 14, the recent trends in dairy and other cow stocks in the EU are presented. Over two-thirds of EU beef production is based on the offspring of dairy cows. In recent years the contraction in the dairy cow herd has exceeded that in the other (beef) cow herd, leading to a modest increase in the share of the EU cow herd that is non-dairy. Low returns from cattle production have led to some contraction in suckler cow numbers in the UK and Ireland and this contraction is expected to continue. In the absence of a policy reform that supports specialised beef production the decline in suckler cow numbers is expected to become more prevalent in the medium term in those EU Member States where the retention of coupled suckler cow premiums in has to this point supported beef cow numbers.

Figure 14: EU Cow Numbers (December) 2000 - 2009

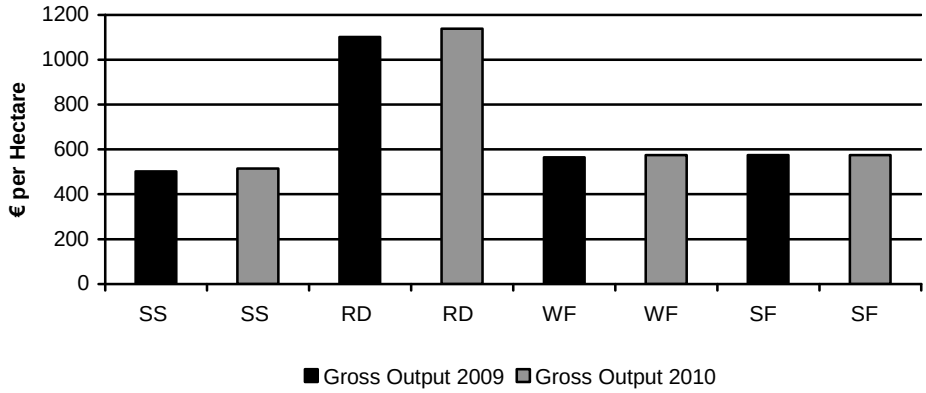


Source: Eurostat.

3.2 Beef System Net Margin Estimates for 2010

Average gross output on all four of the selected beef production systems is estimated to have increased in 2010, see Figure 15. This increase is due to the slightly higher prices for cattle in 2010. The largest increases in output occurred on single suckling (SS) and dairy beef (RD) farms where output is estimated to have risen by approximately €12 and €37 per hectare respectively in 2010. The larger increase output on the dairy beef farms larely reflects the greater level of output per hectare on these farms. The largely similar magnitude of the change in finished cattle and weanling and store prices, as shown in Figure 12, mean that the change in the value of output on weanling to finish (WF) and store to finish (SF) farms was much smaller since improvements in the price of cattle sold off of the farm were offset by increased prices paid for cattle purchased in as weanlings and stores. Output on WF farms is estimated to have increased by €9 per hectare, while output on SF farms is estimated to be largely unchanged on the 2009 level.

Figure 15: Comparison of Actual 2009 Gross Output and Estimated 2010 Gross Output for main Cattle Systems



Source: National Farm Survey 2009 and Authors' Own Estimates 2010.

The small increases in the average gross output on cattle farms when combined with reductions in the direct costs of production is estimated to lead to improvements in the average gross margin earned on each of the four farm types in 2010. The improvement in gross margins, despite a small increase in overhead costs, is sufficient to lead to smaller average negative net margins across all four of the farm types. The magnitude of the losses (negative net margins) is estimated to be largest on WF and SS farms.

Table 2: Estimated Gross and Net Margins in 2010 estimated for the main Beef Systems

	Single Suckling	Dairy Beef	Weanling to Finish	Store to Finish
		euro per hectare		
Gross Output 2009	502	1,101	565	575
Gross Output 2010	515	1,138	574	575
Gross Margin 2009	125	298	129	195
Gross Margin 2010	144	313	142	199
Net Margin 2009	-173	-167	-207	-105
Net Margin 2010	-157	-156	-198	-105

Source: National Farm Survey 2009 and Authors' Own Estimates 2010.

Table 3 breaks the cattle farm population into 3 equal parts on the basis of profitability (net margin) per hectare. For the least profitable one-third of

cattle farms the average negative net margin is estimated to have improved marginally from -€442 per hectare to -€434 per hectare. In 2009 the average net margin on the most profitable one-third of Irish cattle farms was €64 per hectare in 2009 this is estimated to increase to €78 per hectare in 2010.

Table 3: Estimated Financial Performance per hectare for All Cattle Farms 2010 and Actual for 2009

	Least Profitable	Average Profitability	Most Profitable	All
		euro per hectare		
Gross Output	633	517	700	614
Direct Costs	608	378	362	443
Gross Margin	25	139	337	171
Overhead Costs	459	290	260	332
Net Margin 2010	-434	-151	78	-161
Net Margin 2009	-442	-162	64	-172

Source: National Farm Survey 2009 and Authors' Own Estimates 2010.

4. Outlook for 2011

In this section we forecast the expenditure for various input items, the beef price that will prevail in 2011 and the likely income of beef farmers in 2011.

4.1. The Outlook for Input Expenditure

4.1.1 Feedstuffs

The 2010 harvest prices for cereals in Ireland were up by 59 percent on the 2009 harvest prices (CSO, 2010). This strong increase in grain prices is likely to lead to a strong increase in the cost of concentrate feed in 2011. The price of feed is also dependent on a number of other factors including the price of imported non-grain ingredients, as well as labour, processing and transport costs. The price of imported feed ingredients is projected to increase in 2011 compared with 2010, while the cost of energy is also likely to increase. On the basis of increasing grain prices and increased oilseed and maize prices we forecast that the price of feed in 2011 will be at least 20 percent higher than in 2010. Our analysis assumes that in response to the strong forecast price increase in feed prices that the volume of feed fed per hectare in 2011 will decline by 10 percent compared with 2010 and that expenditure on feedstuffs will be approximately 8 percent higher in 2011.

4.1.2 Fertiliser

As we move through 2011, increases in fertiliser prices are expected due to forecast increases in energy prices and the return to economic growth internationally which should push up international demand for fertiliser. Increasing commodity prices and extra demand for fertilisers when combined with increasing energy prices and a contraction in supply capacity in the international fertiliser industry all point to higher fertiliser prices in 2011. We forecast that the recent upward trend in fertiliser prices will continue into 2011 and that fertiliser prices paid by Irish cattle farmers in 2011 will be 20 percent higher than in 2010. In response to the increased price of fertilisers cattle farmers are forecast to reduce their usage of fertiliser by approximately 5 percent. Overall expenditure on fertilizers is forecast to be over 9 percent higher in 2011 than in 2010.

4.1.3 Energy and Fuel

Following the progressive increase in crude oil prices in 2010, and with natural gas prices also showing upward movement, an increase in energy expenditure on farms in 2011 is inevitable.

In December 2010 the average crude oil futures price for 2011 was $90 per barrel. This futures price, if fully reflected in spot prices in 2010, would represent an 18 percent increase on the 2010 level. Based on this 2011 futures price for crude oil and the further increase in the carbon tax announced in Budget 2010, we forecast that the annual average price of diesel will increase by 12 percent and that there will be a 5 percent increase in the cost of agricultural contracting. We forecast no change in the volume of diesel or contracting services consumed on Irish cattle farms.

The cost of electricity is also expected to increase on the back of the forecast higher oil and natural gas prices in 2011. Electricity prices are forecast to increase by 5 percent in 2011.

4.1.4 Other Direct and Fixed Costs

Increases in the cost of labour or general inflation are likely to be low given the ongoing weakness in the Irish economy. We forecast that other direct and other overhead (fixed) costs will remain unchanged relative to their 2010 level in 2011.

4.2. The Outlook for Cattle and Beef Markets 2011

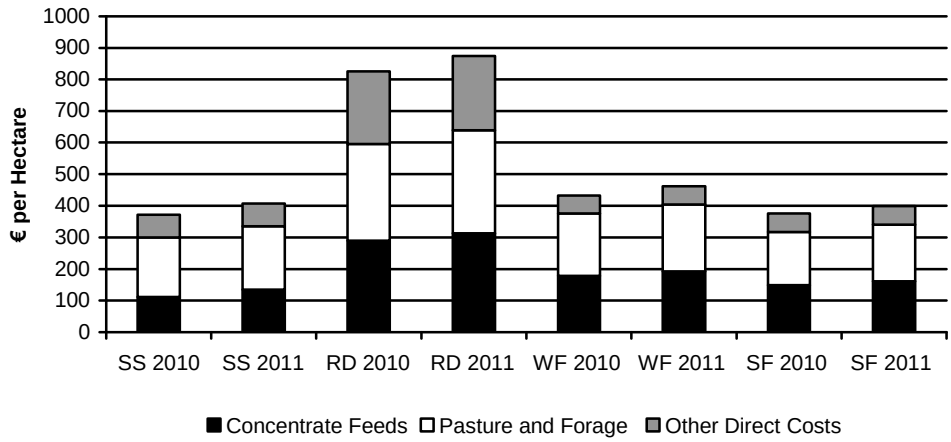
The price of Irish cattle and beef improved marginally in 2010 and this improvement is forecast to continue in 2011. Continued growth in the live export trade seen in 2010, along with a still declining EU cattle herd, a

continuation of the effective ban on Brazilian beef imports to the EU and increasing world prices for beef, will all have a positive impact on Irish cattle and beef prices in 2011. We estimate that Irish cattle prices in 2011 will be 4 percent higher than in 2010.

4.3.1 The Outlook for Beef System Net Margin in 2011

Figure 16 compares the estimated and forecast average direct costs per hectare in 2010 and 2011 for the four featured beef production systems. Given the estimated volume changes in input usage as well as the changes in input prices, it is expected that total direct input cost expenditure will be higher in 2011 than in 2010. The largest increase is expected to occur on the RD farms, where total direct costs are expected to increase by €53 per hectare. This larger increase in expenditure on feed reflects both the higher stocking rate on these farms and the importance of concentrates in direct costs of production. The increase in direct costs is expected to be lowest on SS farms, at approximately €23. Increases in direct costs of €24 and €28 per hectare are expected on WF and SF farms respectively.

Figure 16: Comparison of Estimated Direct Costs for Cattle Systems 2010 and Forecasted Direct Costs for 2011



Source: Authors' Own Estimates 2010 and Forecasts 2011

The average gross margin for each of the four cattle systems is forecast to decrease in 2011. Lower margins result from increases in input prices, principally those for feed and fertilisers that outstrip the forecast improvement in the price of cattle. The forecast reduction in the average gross margin across the four cattle systems ranges from €1 to €10 per hectare. The decline in gross margin is largest on RD farms. These typically have higher direct costs per hectare given their greater intensity of

production and so are likely to lose more on a per hectare basis from the forecast increase in the cost of concentrate feed and fertiliser.

Table 4: Forecast Gross and Net Margins in 2011 for the main Beef Systems

	Single Suckling	Dairy Beef	Weanling to Finish	Store to Finish
		euro per hectare		
Gross Output 2010	515	1138	574	575
Gross Output 2011	533	1176	596	597
Gross Margin 2010	144	313	142	199
Gross Margin 2011	140	303	136	198
Net Margin 2010	-157	-156	-198	-105
Net Margin 2011	-168	-175	-211	-112

Source: Authors' Own Estimates 2010 and Forecasts 2011

Despite the modest increase in cattle prices forecast for 2011, when combined with increased inputs prices, particularly for concentrate feed and fertiliser, a decline in cattle net margins in 2011 compared with 2010 is forecasted. As shown in Table 5 the net margin on the most profitable farms is forecasted to decrease from an estimated €78 per hectare in 2010 to €74 per hectare in 2011.

Table 5: Forecast Financial Performance per hectare for All Cattle Farms 2011 and Estimated for 2010

	Least Profitable	Average Profitability	Most Profitable	All
Gross Output 2011	660	529	725	614
Direct Costs 2011	650	397	384	443
Gross Margin 2011	10	132	341	171
Overhead Costs 2011	468	295	267	332
Net Margin 2011	-458	-162	74	-161
Net Margin 2010	-434	-151	78	-172

Source: Authors' Own Estimates 2010 and Forecasts 2011

5. Concluding Comments

Despite relatively buoyant world beef markets, the continued effective exclusion of Brazilian beef from the EU market and a decline in indigenous EU production, Irish beef prices only increased marginally in 2010 over the price levels observed in 2009. The weak improvement in Irish prices largely matches the pattern across EU markets and reflects the nascent but hesitant nature of the current economic recovery; consumer demand remains depressed and demand for beef in 2010 had not begun to recover sufficiently to generate significant improvements in prices during 2010. The decline in the value of the euro relative to sterling allowed for some improvement in Irish prices whereas prices in most other euro area markets declined in 2010 relative to 2009.

Costs of production in general declined in 2010 relative to 2009. Fertiliser and feed prices declined in 2010 relative to 2009 and these lower prices, though partially offset by greater volumes of input use, are estimated to have reduced total costs of production. The decline in the costs of production allowed for improvements in gross and net margins for Irish cattle farming. However, despite the improvement in margins due to slightly higher output prices and lower input costs the majority of Irish cattle farms still earned a negative net margin from cattle production.

In 2010 over four-fifths of Irish cattle farmers are estimated to have earned a negative net margin. Despite the forecast higher output prices for 2011, forecasts of increased costs of production are expected to lead to deterioration in the profitability of Irish cattle farming in 2011 relative to 2010. Those cattle farms which currently earn positive net margins can expect to see those margins increase in 2011, however on other cattle farms that are estimated to have earned a negative net margin in 2010 margins are forecast to further deteriorate in 2011.

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Appendix: Tables referring to Figures in the Text

Table A1: Family Farm Income on Cattle Rearing and Cattle Other Farm Systems: 2001 to 2009 (€/farm)

	2002	2003	2004	2005	2006	2007	2008	2009
Cattle Rearing	7,752	7,337	7,261	12,729	8,293	7,703	7,740	6,563
Cattle Other	9,521	8,106	8,586	18,283	11,290	10,709	11,208	9,302

Source: National Farm Survey (various years)
See Figure 1 in the main text

Table A2: Variation in Total Production Costs and Gross Output on Single Suckling Beef farms in 2009 (€/ha)

	Least Profitable	Average Profitability	Most Profitable
Concentrate Feeds	144	109	80
Pasture and Forage	256	184	155
Other Direct Costs	97	68	55
Other Fixed Costs	409	282	218
Gross Output	486	490	527

Source: National Farm Survey Data (2009).
See Figure 2 in the main text.

Table A3: Variation in Total Production Costs and Gross Output on Cattle Reared on Dairy farms in 2009 (€/ha)

	Least Profitable	Average Profitability	Most Profitable
Concentrate Feeds	427	227	214
Pasture and Forage	383	303	273
Other Direct Costs	256	175	191
Overhead Costs	549	398	465
Gross Output	1105	924	1307

Source: National Farm Survey Data (2009).
See Figure 3 in the main text.

Table A4: Variation in Total Production Costs and Gross Output on Weanling to Store/Finish Beef farms in 2009 (€/ha)

	Least Profitable	Average Profitability	Most Profitable
Concentrate Feeds	211	200	103
Pasture and Forage	283	178	148
Other Direct Costs	69	56	48
Overhead Costs	482	304	206
Gross Output	597	549	548

Source: National Farm Survey Data (2009).
See Figure 4 in the main text.

Table A5: Variation in Total Production Costs and Gross Output on Store to Finish Beef farms in 2009 (€/ha)

	Least Profitable	Average Profitability	Most Profitable
Concentrate Feeds	212	62	167
Pasture and Forage	207	146	175
Other Direct Costs	65	35	75
Overhead Costs	436	214	273
Gross Output	491	317	848

Source: National Farm Survey Data (2009).
See Figure 5 in the main text.

Table A6: Variation in Total Production Costs for all Cattle farms in 2009 (€/ha)

	Least Profitable	Average Profitability	Most Profitable	All Farms
Concentrate Feeds	214	131	114	151
Pasture and Forage	277	190	171	210
Other Direct Costs	108	71	75	84
Overhead Costs	456	288	239	328

Source: National Farm Survey Data (2009).
See Figure 6 in the main text.

Table A7: Variation in Net Market Margin per Hectare in 2009 (€/ha)

	Least Profitable	Average Profitability	Most Profitable	All Farms
Gross Output	612	518	677	601
Direct Costs	598	392	360	445
Gross Margin	13	126	318	156
Overhead Costs	456	288	254	328
Net Margin	-442	-162	64	-172

Source: National Farm Survey Data (2009).
See Figure 7 in the main text.

Table A8: Comparison of Actual 2009 Direct Costs and Estimated 2010 Direct Costs for main Cattle Systems (€/ha)

	SS	RD	WF	SF
Concentrate Feeds 2009	109	282	174	150
Pasture and Forage 2009	195	317	205	181
Other Direct Costs 2009	72	204	58	61
Concentrate Feeds 2010	112	290	181	154
Pasture and Forage 2010	188	305	199	174
Other Direct Costs 2010	71	231	58	60

Source: National Farm Survey 2009 and Authors Own Estimates 2010.
See Figure 10 in the main text.

Table A9: Comparison of Actual 2009 Gross Output and Estimated 2010 Gross Output for main Cattle Systems (€/ha)

	SS	RD	WF	SF
Gross Output 2009	502	1101	565	575
Gross Output 2010	515	1138	574	575

Source: National Farm Survey 2009 and Authors Own Estimates 2010.
See Figure 14 in the main text.

Table A10: Comparison of Estimated Direct Costs for 2010 and Forecasted Direct Costs for 2011 (€/ha)

	SS	RD	WF	SF
Concentrate Feeds 2010	112	290	178	149
Pasture and Forage 2010	188	305	197	168
Other Direct Costs 2010	71	231	57	58
Concentrate Feeds 2011	135	313	214	179
Pasture and Forage 2011	201	326	211	180
Other Direct Costs 2011	71	235	57	58

Source: Authors Own Estimates 2010 and Forecasts 2011.
*See Figure 15 in the main text***.**

SITUATION AND OUTLOOK FOR SHEEP 2010/11

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1. Introduction

For this paper data from farms in the National Farm Survey (NFS) which have a sheep enterprise are used, together with data from Bord Bia, the CSO, European Commission DG Agri and Eurostat, as the basis for an analysis of the financial and technical performance of Irish sheep farms. Since detailed NFS results for 2010 will not be available until mid 2011 our estimates of enterprise margins for 2010 are based on 2009 NFS data, preliminary CSO price indices for 2010, and input from Teagasc colleagues. Forecasts of sheep enterprise margins for 2011 are based on our estimates of margins for 2010, and forecasts of input and output price changes in 2011.

We begin the paper with a brief review of the family farm income (FFI) performance of all sheep farms in 2009. This is followed by an overview of the current short term outlook for European sheep markets and for Irish lamb prices in particular. A brief overview of medium term trends in European and Irish sheep markets is then presented. A detailed assessment of the 2009 sheep margins is then presented and this is followed by estimates and forecasts of margins for the main sheep enterprises in 2010 and 2011.

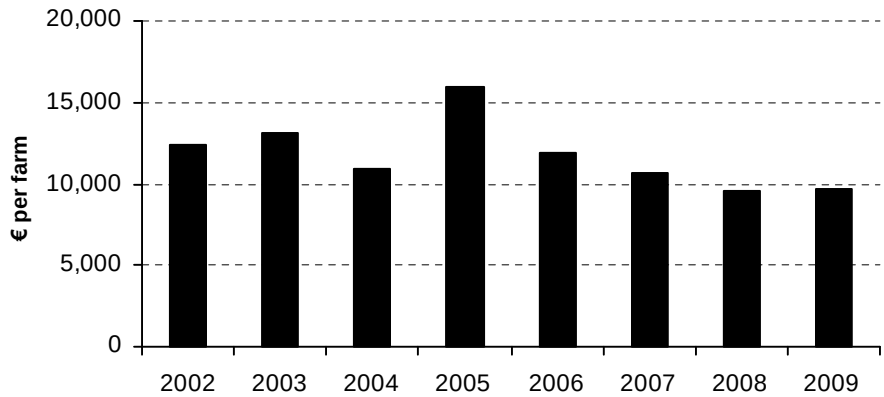
National policy in relation to the sheep sector has changed in 2010 with the announcement of the *Sheep Grassland Scheme,* which will have a €54 million budget over 3 years. Under this scheme both upland and lowland sheep farmers will be eligible for support on the basis of ewe numbers declared in the 2009 (and subsequent) sheep census. The planned introduction of this scheme before the end of 2010 was not possible, and we assume that payments under the scheme will be made in 2011 on the basis of the applications submitted in 2010. The Minister for Agriculture in 2010 also announced the allocation of €8 million from the revised National Rural Development programme to support the provision of sheep fencing and mobile handling facilities. The details of this scheme are not to hand (December 2010) and we have not attempted to incorporate any receipts under this scheme in our estimates for sheep farming output. We have incorporated the provisions of the Sheep Grassland Scheme on the

assumption that it will be operated as announced by the Minister for Agriculture.

2. Review of the Economic Performance of Sheep Farms in 2007

Family farm income (FFI)[4] on those farms classified by the NFS as *mainly sheep* farms has declined over the past years.[5] However, for the first time since 2005 FFI on mainly sheep farms increased in 2009, with the average income on sheep farms in 2009 at €9,688, 1 percent higher than the level in 2008. The average family farm income (FFI) earned on these farms for the period 2002 to 2009 are shown in Figure 1. The increase in FFI in 2009 was principally the result of changes in some elements of direct and overhead costs. Despite the fact that lamb prices were higher in 2009 than in 2008, the average value of gross output on *mainly sheep* farms declined. The reduced costs of production allowed the level of income earned to increase.

Figure 1: Income on Mainly Sheep Farms in Ireland: 2002 to 2009



Source: Teagasc National Farm Survey (various years)

In 2009, as in other years, those *mainly sheep* farms that participated in the Rural Environmental Protection Scheme (REPS) had higher FFI, on average, than those who choose not to participate in REPS. The REPS scheme is now closed to new entrants and the replacement agri-

[4] Family farm income represents the total return to the family labour, management and capital investment in the farm business. It is calculated as gross output less total net costs and includes direct payments/SFP (Connolly, Kinsella, Quinlan and Moran, 2009).

[5] The *Mainly Sheep* farm category within the NFS comprises farms where the sheep enterprise was the dominant enterprise in the farm's gross margin. These farms are dominated by farms operating hill sheep enterprises.

environmental schemes is unlikely to provide a means through which incomes on sheep farms can be significantly increased.

Given that direct payments receipts are either fixed or in some cases in decline, the prices farmers receive for their output, the costs that they incur in producing lamb and their levels of technical efficiency will be the key determinants of the profitability of Irish sheep enterprises. In the next section we review the short run outlook for Irish lamb prices. This is then followed by a brief synopsis of the longer term outlook for the Irish sheep sector.

2.1 *Sheep Margins – 2009*

Mid-season lamb is the predominant lowland sheep system in Ireland. Changes in the value of output, costs and gross margin per hectare for this system are shown in Table 1. The value of gross output on mid-season lamb enterprises in 2009 declined marginally. Total direct costs per hectare on the average mid-season lamb enterprise increased by 1 percent in 2009. This increase in costs was largely due to increased expenditure on fertiliser and winter forage and other direct costs. With slightly lower gross output per hectare and somewhat higher average direct costs, the gross margin on the average mid-season lowland lamb enterprise in 2009 was 2 percent lower than in 2008.

Table 1: Mid-Season Lamb Output, Direct Costs, Gross Margin and Technical Performance

	2008	2009
	€/ha	
Gross output	748	744
Direct Costs	374	379
Concentrates	164	148
Winter forage	36	39
Pasture costs	73	75
Other direct costs	101	117
Gross Margin	374	365
Ewes/ha	7.9	7.9
Weaning rate per ewe	1.38	1.37
Lambs/ha	10.9	10.9

Source: National Farm Survey (Various Years)

Between 2008 and 2009, the overhead costs that were allocated within the NFS to the mid-season enterprise, decreased by over 33 percent to €263 per hectare due largely to a reduction in the charge for depreciation of buildings. When this decline in overhead costs is allocated to the mid-season lamb enterprise it results in an average net margin per hectare of €102. This level is over 34 percent higher than that in 2008.

The large differences in the profitability of sheep farms operating the mid-season lamb system, that have been noted previously (Hanrahan and Kinsella, 2010), continued in 2009. For comparison purposes, in Table 2 mid-season lowland lamb enterprises are ranked on the basis of gross margin per hectare, and grouped into three categories, the top one-quarter, the middle half and the bottom one-quarter group of farms. The average levels of output, direct costs and gross margin per hectare across these three groups and indicators of technical performance can be compared.

Table 2: Mid-Season Lamb Output, Costs, Margins and Technical Performance – 2009

	Bottom 1/4	Middle 1/2	Top 1/4
		€/ha	
Gross Output	517	749	1267
Direct Costs	403	349	438
Concentrates	154.1	142.2	163.2
Winter Forage	36.9	36.5	57.2
Pasture	67.5	68.3	116.8
Other Direct Costs	139.3	94.8	100.8
Gross Margin	114	401	830
Ewe / ha	6.4	7.9	11.9
Weaning rate /ewe	1.25	1.41	1.42
Lamb carcass kg/ha	155	215	327
Dir. costs €/kg carcass	2.60	1.62	1.34

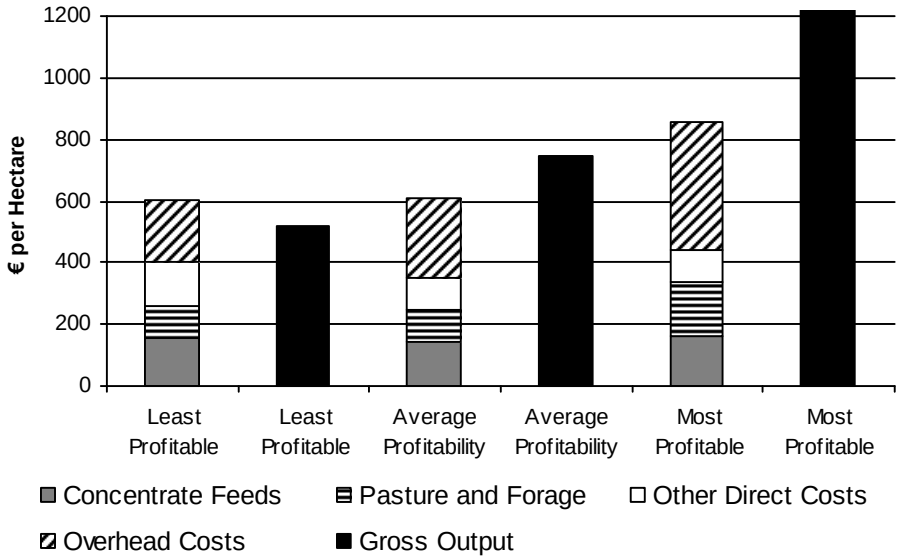
2009 National Farm Survey (2010); ranked on a gross margin per hectare basis.
Note: In calculating the volume of lamb carcass output per hectare an average carcass weight of 20 kg has been used (Hanrahan, 2006).

The top group earned an average gross margin of €830 per hectare in 2009; farms in the bottom group earned an average gross margin of only €114 per hectare. This means that the top producers earned, on average, over 7.2 times more per hectare than their counterparts in the bottom group. The gap between the top and bottom 25 percent of mid-season lowland lamb producer has been growing.

Direct costs per hectare also differ across the three groups (see Figure 2). Total direct costs per hectare are greatest on the group with the highest level of profitability reflecting the higher stocking rate on these farms. The

level of direct costs per hectare on the bottom 25 percent of farms is more than 15 percent higher than on the middle group of farms. The share of expenditure on concentrates in total direct costs is lowest on the top performing farms and highest on the bottom 25 percent of farms. The proportion of direct costs accounted for in the other direct costs (e.g. veterinary and medicines costs) is much higher on the bottom group of farms.

Figure 2: Variation in Gross Output and Total Production Costs on Mid-Season Lamb farms in 2009



Source: 2009 National Farm Survey Data (2010).

As is clear from Table 2, a high weaning and stocking rate and controlling costs per hectare, are essential in achieving higher returns. Improved technical performance, reflected in the average carcass output per hectare of 327 kilos on the top 25 percent of farms versus 155 kilos on the bottom 25 percent of farms, this higher level of lamb output per hectare combined with tighter control of direct costs is central to increasing enterprise profitability.

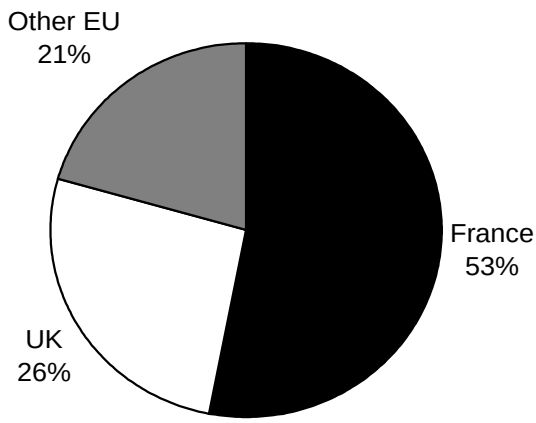
The large differences between the values of output per hectare between the three groups of farms (bottom, middle and top in terms of gross margin per hectare) are in part due to differences in weaning and stocking rates across the groupings. The early marketing of lambs is also a contributor to the higher gross output value and gross margin per hectare in 2009 on the top group of mid-season lamb enterprises. In 2009 22 percent of lambs from

the top one third of lowland mid-season enterprises were marketed before June 1st. Each year the top performing one-third of mid-season lamb enterprises market a larger proportion of lambs before June 1st than enterprises in the middle and bottom groups. Given the seasonal pattern of lamb prices, early marketing of lambs contributes to the achievement of higher levels of gross output per hectare.

2.2 *Sheep Meat Markets and Price: Short run outlook*

The bulk of Irish lamb output is destined for foreign markets and in 2009 over 80 percent of Irish lamb production was exported (CSO, 2010). This extreme export dependence means that developments on Ireland's export markets largely determine the prices that Irish sheep farmers receive for their output. Movement in the prices of competing meats (beef, pig and poultry meat) also have an impact on lamb demand and hence the market price for lamb.

Figure 3: Irish Sheep Meat Exports (Volume) by Destination in 2009



Source: Eurostat COMTRADE database (Eurostat, 2010b)

The continental EU market for Irish lamb has a strong impact on the prices received by Irish producers, with the majority of Irish lamb exports destined for euro-zone markets. Nevertheless the UK market, which took over 26 percent of Irish sheep meat exports in 2010, remains important. The decline in the value of the euro relative to the pound sterling in 2010 contributed to the much improved prices Irish sheep farmers received in 2010 and

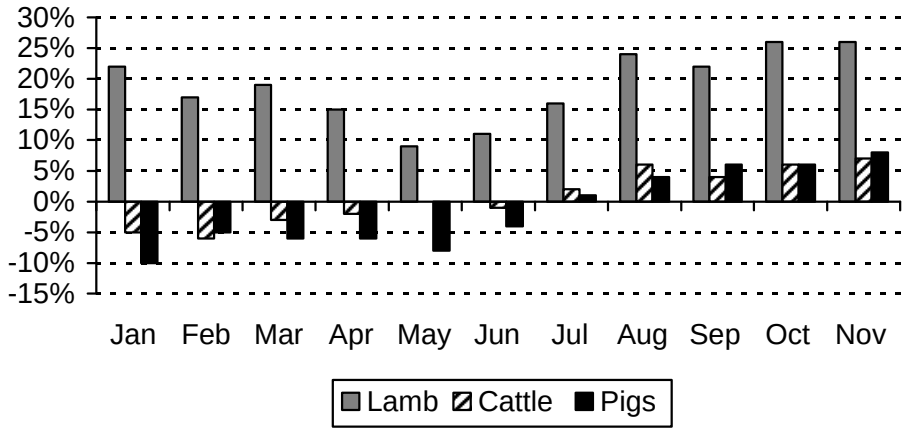
explains why the increase in lamb prices in Ireland in 2010 was much larger than that in any other heavy lamb market in the EU.

On the EU market, Irish lamb competes with lamb produced in other EU Member States as well as lamb produced in New Zealand and Australia. Aggregate EU demand for lamb has been largely stable in recent years with minor declines in EU per capita consumption being offset by increases in population. As the EU economy grows out of the recession, demand for lamb in the EU is expected to increase moderately in the medium term. Given the relatively stable outlook for demand on the European lamb markets, the short-run outlook for lamb price will continue to be driven by developments in supply, both within the EU and the world market.

The short run supply story within the EU continues to be characterised by contracting breeding flocks and falling levels of lamb slaughter and production. The volume of lambs slaughtered in the EU15 in the first 9 months of 2010 declined by over 5% percent when compared to the same period in 2009 (Eurostat, 2010a).

The overall contraction in EU lamb supplies that has occurred in 2010 and the depreciation of the euro against sterling are the main factors explaining the upward movement of Irish and EU lamb prices in a context of generally declining meat prices and stable demand. As Figure 4 shows, the substantial improvement in Irish lamb prices in 2010 was in marked contrast to developments in both cattle and pig prices.

Figure 4: Change in Irish Lamb, Cattle and Pig Prices (2010 vs. 2009)



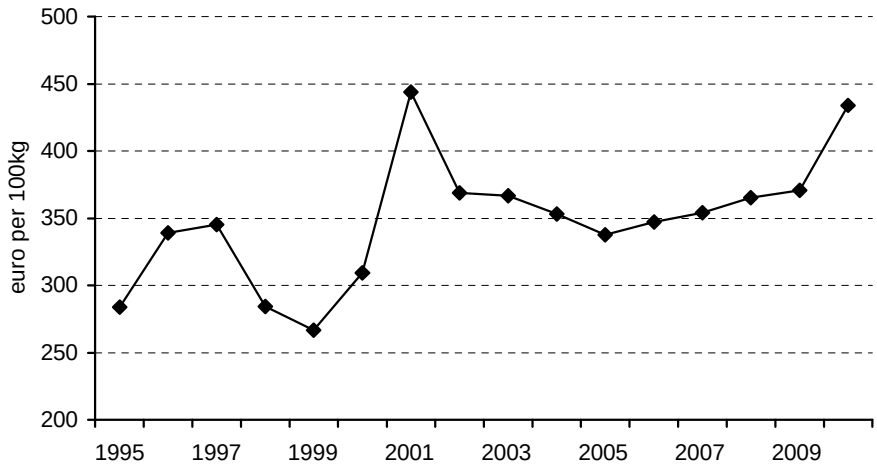
Source: DG Agri. Cattle (R3 Steer), Pig (E Grade Carcass), Lamb (Fat Lamb).

The indigenous production of lamb in the EU in 2011 will largely be a function of the 2010 ending inventory of breeding ewes. Overall EU breeding inventories in 2010 are likely to be lower than in 2009. Provisional June 2010 estimates from the CSO were not published in 2010 but we expect that the Irish sheep breeding flock at the end of 2010 will be higher than in 2009. The UK sheep breeding flock in June 2010 increased by almost 1 percent compared with June 2009 (DEFRA, 2010). The French ewe flock in December 2009 was over 2 percent lower than in 2008 (Eurostat, 2010a)

Lower volumes of indigenous EU lamb production in the past would have led to increased lamb imports from outside the EU. However, *Meat and Wool New Zealand* (M&WNZ) suggests that, in the short to medium term, this may not be the case. The M&WNZ (2010) forecast is that New Zealand production of lamb for export will decline by 2.5 percent in the 2010/11 production year. Thus, imports of NZ lamb into the EU are unlikely to increase to replace contracting indigenous European lamb production.

Lamb prices paid at export licensed abattoirs in Ireland have increased year on year since 2005. The trend in Irish lamb prices since 1995 is shown in Figure 5. The average weekly price in 2010 (when weighted by weekly throughput at export licensed abattoirs) is estimated to have been 17 percent higher than for the same period in 2009.

Figure 5: Irish Lamb Price, 1995 – 2010



Source: European Commission DG AGRI and Bord Bia.

The combination of contracting indigenous EU and southern hemisphere lamb exports, with stable to improving EU per capita demand for lamb, suggests that the prices of lamb on European (and wider international) markets in 2011 should further improve on the level observed in 2010 though a repeat of the very large price increase observed in 2010 is unlikely.

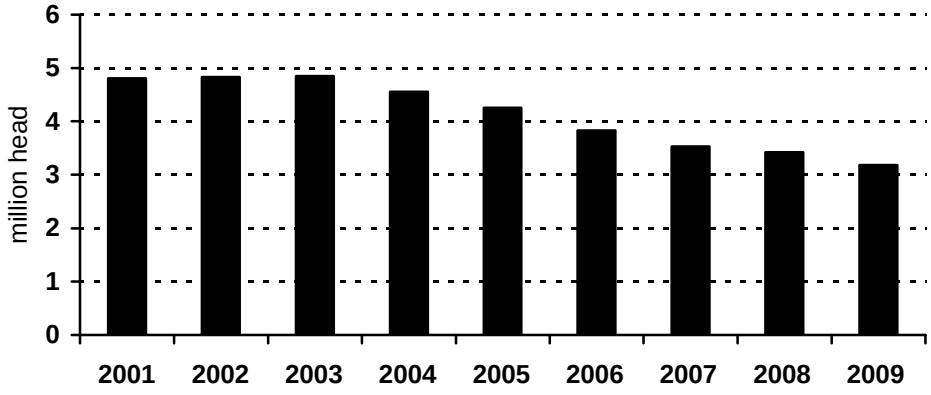
2.3 Sheep and Flock Numbers

The decline in the number of sheep flocks in Ireland that has been ongoing in recent years was arrested in 2009, with the number of registered flocks increasing by 1 percent. The number of sheep flocks recorded by the Department of Agriculture, Fisheries and Food in the 2009 Sheep and Goat Census was 32,232 (DAFF, 2010).

The national average flock size has decreased steadily since the early 1990s. The average flock size was 108 sheep in December 2005 and by December 2009 this had declined to 95 ewes per flock. Of the 32,232 sheep flocks in Ireland, approximately 46 percent have less than 50 sheep. The number of large flocks, i.e. those with greater than 200 sheep was 11.4 percent of the total in 2009. Despite the decline in the number of sheep flocks in Ireland there has not been a significant consolidation in the structure of the sheep sector, with the number of large flocks remaining largely unchanged.

The decline in the Irish sheep flock that has been ongoing since 1992 would appear to have halted and, as noted above, we expect that ending numbers of sheep in 2010 will be higher than in 2009. Figure 6 graphs the recent trends in sheep numbers in Ireland. The volume of production (slaughter plus live exports) in 2010 is estimated to have declined by over 14 percent relative to 2009. This decline in slaughter is due to both lower ewes and ewe lambs at the beginning of 2010 and the retention of ewe lambs as replacements and additions to the ewe breeding flock. With a stable or moderately expanding sheep flock in 2010 the outlook for lamb production in 2011 is likely to be stable.

Figure 6: Total Irish Sheep Numbers 2001-2009 (December)



Source: CSO December Livestock Survey

2.4 *Medium Term prospects for the Irish sheep sector*

Over the next 10 years the economic outlook for the Irish and EU lamb sectors, in the absence of any significant changes in agricultural policy and agricultural trade policy is likely to be stable.

Over the next 10 years there could be a WTO agreement that liberalises EU agricultural trade policy by lowering the tariff barriers that currently protect EU agricultural markets. The lowering of such tariff barriers will negatively affect the Irish lamb market by allowing imports of lamb and other meat products into the EU at lower prices. The magnitude of any price reduction that might arise from a WTO agreement will depend on the level of world prices. Most agencies producing medium projections of international lamb and sheep markets expect world market prices to grow over the medium term (FAPRI 2010; OECD 2010).

3. Estimated Sheep Gross Margins 2010

To obtain an estimate of farm profitability for 2010, it is necessary to estimate the volume and price of inputs likely to have been used in producing lambs, as well the volume and value of the lamb and other output produced. The introduction of the Sheep Grassland Scheme also needs to be accounted for in our estimates of gross output since this subsidy, described in more detail below, is coupled to production. We have assumed that the stocking rates per hectare and weaning rates in 2010 are unchanged on the 2009 level. Possible future short to medium term developments in the sheep markets and prices were discussed earlier in the paper and will affect the value of output farmers sell off of the farm.

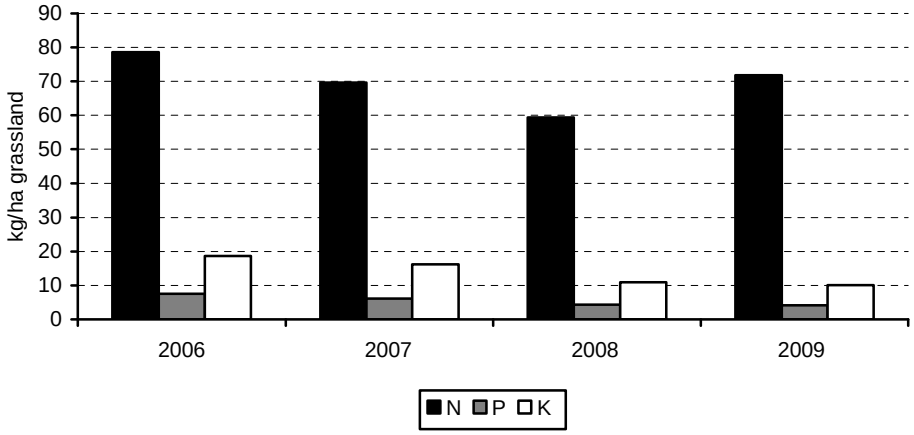
As noted earlier, the sheep and lamb market in 2010 was characterised by reduced supplies on the EU market (indigenous and imported), which, in the context of stable demand for lamb in the EU, led to increased Irish and EU lamb prices. Irish lamb prices in 2010 were almost 17 percent higher than in 2009. The value of output per hectare for the mid-season lamb system in 2010 is estimated to dramatically increase as a result of these much improved market prices.

The Irish Government announced the introduction of a three year Sheep Grassland Scheme in April of 2010. The scheme will, over its three years of operation (2010, 2011 and 2012), have a budget of €54 million. The 2010 payments under the scheme had by the end of 2010 still not been made but we have assumed in calculating the gross output per hectare for 2010 and 2011 that the scheme will operate as announced by the Minister for Agriculture. The payment per hectare to sheep farmers depends on whether the sheep farmer is farming in a hill or lowland area (or potentially a mixture of both). The payment per hectare in lowland areas is set at €30 euro per hectare (subject to a maximum area claim of 30 hectares). In upland areas the payment rate on the first 20 hectares is €30 per hectare and for all additional land the rate reduces to €25 per hectare up to a maximum claimable area of 84 hectares. The upland payment rate at a stocking rate of 2.5 ewes per hectare is equivalent to €10.47 per ewe.

Given our assumptions of unchanged stocking and weaning rates, the evolution of direct costs per hectare will determine the extent to which the significantly increased gross output translates into higher gross margins. The main costs for sheep farms are purchased feed, winter forage and pasture (fertiliser) costs.

Purchased feeds typically account for approximately 40 percent of total direct input expenditure on the average mid-season lowland lamb system. Over the course of 2010 purchased feeds have increased moderately in price and there is evidence from Department of Agriculture data that total sales of sheep feed increased in 2010 relative to 2009. Given the increase in the price of feed, and the evidence for an increase in volumes fed, expenditure on concentrates is estimated to have increased by 4 percent in 2010. It should be noted that levels of concentrate use and stocking rates per hectare are related. Other things equal lower stocking rates will lead to lower concentrate use. In our 2010 estimates we have assumed that stocking rates are unchanged relative to 2009.

Figure 7: Fertiliser use per hectare: Farms with a Mid-Season Lamb Enterprise



Source: National Farm Survey (Various Years)

Pasture and forage costs typically account for approximately 30 percent of total direct costs on the mid-season lowland lamb system. In 2009 the pattern of declining fertiliser applications on farms with sheep enterprises that has been observed since 2006, was reversed with applications of nitrogen in 2009 more than 20 percent higher than in 2008, though applications for phosphorous and potassium continued to decline (see Figure 7). The increase in nitrogen application rates may reflect the stabilisation in average stocking rates in 2009, but is also due to the decline in the average prices of fertilisers in 2009. Fertiliser prices have fallen over the course of most of 2010 by on average 17 percent and this is estimated to have led to a significant reduction in the level of fertiliser expenditure by Irish sheep farmers. Given our assumption that stocking rates on sheep farms will remain at their 2009 level in 2010, the volume of fertiliser applied per hectare in 2010 is estimated to increase by 5 percent. As a result, expenditure on fertilisers is estimated to decline by approximately 13 percent on sheep enterprises.

Lower direct costs, particularly fertiliser costs, combined with the large increase in the value of market based gross output and the addition to gross output of the recently introduced Sheep Grassland Payment are estimated to have led to a dramatic improvement in the gross margin earned from lowland mid-season lamb enterprise in 2010 (see Table 3). The estimated gross margin per hectare on the mid-season lamb enterprise in 2010 is €535 per hectare. This amounts to an increase of almost 47 percent on the 2009 level. The addition of €30 per hectare to gross output as a result of the Sheep Grassland scheme is obviously an important

contributor to the very positive outcome estimated for 2010. Market based gross margin (i.e. exclusive of the coupled direct payment) in 2010 is estimated to be 38% higher than in 2009.

Table 3: Mid-Season Lamb Enterprise Gross Margin, 2008 – 2010

	2008	2009	2010[1]
		€/ha	
Total Direct Costs	374	379.0	372.5
Concentrates	164	148.3	154.2
Pasture	73	74.5	64.9
Winter Forage	36	38.9	33.8
Other Direct Costs	101	117.3	119.7
Gross Output	748	744.0	907.9
Gross Margin	374	365.0	535.4
Overhead Costs	298	263.0	268.3
Net Margin	76.0	102.0	267.1

Source: National Farm Survey (Various Years)
[1]Estimate

4. The Outlook for Sheep Enterprise Gross Margin in 2011

The forecast contraction of New Zealand lamb exports and the ongoing contraction in production of lamb in the EU together with stable demand for lamb in the EU will mean that the price of lamb on European markets in 2011 is likely to remain close to or slightly above that for 2010.

The outlook for input prices in 2011 is largely unfavourable from the perspective of sheep farmers. The prices of most of the important inputs to sheep enterprises are forecast to increase, with feed, fertiliser and energy prices all forecast to increase in 2011 relative to 2010.

Concentrate costs are the largest direct cost item on all sheep systems and prices are forecast to increase by 20 percent in 2011 relative to 2010. The price of fertiliser is also forecast to increase over the course of 2011, with fertiliser prices forecast to be 15 percent higher than in 2010. Fuel costs are forecast to increase with the price of diesel forecast to increase by 12 percent in 2011.

With higher fertiliser costs, application rates are forecast to decrease by 5 percent even with an assumption that stocking rates are maintained at their 2009 levels. This leads to a forecast increase of almost 20 percent in expenditure on fertiliser. With prices of feed forecast to increase in 2011 overall feed use per hectare is expected to decline by 5 percent, with overall expenditure on feed increasing by 14 percent.

Table 4: Mid-Season Lamb Enterprise Gross Margins, 2008 – 2011

	2008	2009	2010[1]	2011[2]
		€/ha		
Total Direct Costs	374	379.0	372.5	404.8
Concentrates	164	148.3	154.2	166.6
Pasture	73	74.5	64.9	70.9
Winter Forage	36	38.9	33.8	36.9
Other Direct Costs	101	117.3	119.7	130.4
Gross Output	748	744.0	907.9	925.51
Gross Margin	374	365.0	535.4	520.7
Overhead Costs	298	263.0	268.3	273.6
Net Margin	76.0	102.0	267.1	247.1

Source: National Farm Survey (Various Years)
[1]Estimate, [2]Forecast

Table 4 summarises our forecast of output, costs and margins for the mid-season lamb enterprise for 2011. Given the moderately positive outlook for lamb prices in 2011 relative to 2010 and the increase in input costs that are forecast for 2011, gross margins earned from sheep farming are set to decline from the levels estimated for 2010. The gross margin per ewe for mid-season lamb system in 2011 is forecast to decrease almost 3 percent to €521.

5. Concluding Comments

In the post decoupling era the bottom line for sheep farmers has been determined by the price of lamb relative to the costs of production and by the technical performance and intensity of production of their enterprises. The introduction in 2010 of the Sheep Grassland Scheme has altered this equation for Irish sheep farmers. The large improvement in Irish sheep prices in 2010 dramatically improved the returns from the market place. In the absence of the Sheep Grassland Scheme payment we estimate that margins on the mid-season lowland lamb enterprise will have increased by 37 percent in 2010 relative to 2009.

The analysis of margins earned on farms operating a mid-season lamb system in this paper highlights the importance of high weaning rates and high stocking rates in achieving improved returns per hectare. In 2009 gross margins per hectare were higher on farms that were able to increase stocking and weaning rates and control costs.

The average gross margin earned by mid-season lamb producers in 2010 is estimated to have increased dramatically relative to that earned in 2009. The estimated improvement of 47 percent in gross margin on the mid-season lamb enterprise is based on lamb prices in 2010 that were on average 17 percent higher than in 2009 and on the assumed receipt of the

Sheep Grassland Scheme payment of €30 per hectare. The increase in lamb prices was higher in Ireland than elsewhere and in part this was due to the depreciation of the euro against sterling. The continued contraction in indigenous EU production of lamb and sheep meat and stable demand is likely to further increase Irish and EU lamb prices though a repeat of the improvement observed in 2010 is highly unlikely. Output prices in 2011 are likely to be a few percent up on those in 2010 but when combined with increased direct costs per hectare in 2011, we forecast that margins on all sheep enterprises will decline from the levels estimated for 2010. Underlying the estimates for 2010, and our forecast for 2011, are conservative assumptions concerning the development of stocking rates per hectare and weaning rates per ewe.

Over the medium term considerable policy uncertainty remains. CAP reform, the still ongoing WTO Doha Round of trade negotiations and the impact of climate change policy will affect the profitability of Irish farming. The imminent CAP reform process could reduce the Single Farm Payment cheques received by farmers but is unlikely to negatively affect the market based gross margins earned on sheep enterprises. A WTO reform remains a possibility and will, other things remaining equal, reduce the market price of lamb in EU.

The dramatic improvement of margins estimated to have been earned on Irish sheep enterprises in 2010 are due to a combination of market price and cost developments and the introduction of the sheep grassland scheme. The policy based element of this improvement in the economic fortunes of the Irish sheep sector, though welcomed by sheep farmers, is likely to be transitory. The scheme is based on unused Single Farm Payment funds. The availability of such funds in the aftermath of the 2013 CAP reform and the readiness of a future Minister for Agriculture to support the continuation of a scheme such as the Sheep Grassland Scheme are both uncertain. Producers should continue to focus on the market based component of their profits and cautiously consider the receipt of Grassland Scheme payments as a welcome windfall rather than something that should determine their production decisions on farm.

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Acknowledgements

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Appendix: Tables referring to Figures in the Text

Table A1: Variation in Production Costs, Output, Gross and Net Margin on Mid-Season Lamb Sheep Farms in 2009 (€/ha)

	Least Profitable (25%)	Average Profitability (50%)	Most Profitable (25%)
Concentrate Feeds	154	142	163
Pasture and Forage	104	105	174
Other Direct Costs	144	102	101
Total Direct Costs	403	349	438
Overhead Costs	204	261	415
Gross Output	517	749	1267
Gross Margin	114	400	830
Net Margin	-90	139	415

Source: National Farm Survey Data (2009)

SITUATION AND OUTLOOK FOR PIGS 2010/2011

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1. Introduction

Rapidly escalating feed prices combined with a delayed response to these increases in pig price are currently putting pig producers under severe financial pressure. This may not be resolved until well into 2011 when pig prices are expected to rise in response to reduced supplies. Pig producers and feed millers require access to additional credit for working capital to allow them to successfully work their way through this difficult period.

2. Input Costs

Feed Cost

Feed typically constitutes 70% of the cost of producing pig meat in Ireland. Feed ingredient prices have increased very significantly since the summer of 2010. There has been markedly increased volatility in feed ingredient prices since the start of the 2010/2011 production year due to a number of factors:

1. Export bans in Russia and Ukraine resulting in the loss of the world's largest source of cheap wheat
2. Price speculation on the financial markets
3. High import demand especially from China
4. Increased demand for non-feed uses especially bio-fuels
5. Decreased production including EU and Russia
6. Increased demand for grain-fed meat
7. Low world stocks

Since Ireland is not self-sufficient in relation to pig feed ingredients, feed prices in Britain and France are a useful indicator of trends. The volatility of pig feed ingredient prices is illustrated in Table 1.

Table 1: Pig feed ingredient prices in France and Great Britain 2007-2010 (€ per tonne)

	France				Great Britain	
Week 48	**Wheat**	**Barley**	**Maize**	**Soya**	**Wheat**	**Barley**
2007	232	225	208	307	205	204
2008	133	111	117	275	105	102
2009	122	106	128	303	120	95
2010	221	197	211	354	210	195
Week 1						
2011	246	223	230	368		

Sources: IFIP and HGCA

Not alone have cereal prices increased dramatically but soyabean meal prices are significantly higher than in the same week in 2008 or 2009. There have been substantial increases in the prices of purchased compound feed in Ireland since July 2010 (Table 2).

Table 2: Purchased Compound monthly feed prices 2010

Month	**Composite Feed Price € per Tonne**	**Feed Cost Cent per kg dead**
January	233	87
February	233	87
March	233	87
April	233	87
May	233	87
June	233	87
July	237	89
August	243	91
September	266	100
October	269	101
November	275	103
December	279	104
Average	247	93

Source: Teagasc Pig Development Department

The composite feed price has increased by €46 per tonne from June to December 2010. This increase has been ameliorated by the forward buying of ingredients until the end of 2010. However, compound feed prices have increased by a further €25 per tonne for January 2011 and another increase of €10-15 per tonne is expected for March. These increases are in line with the increases in ingredient prices. This would bring the composite

price to about €315-320 per tonne and would result in a feed cost per kg of about 118-120c.

Based on current pig feed ingredient prices and in the absence of significant quantities bought forward at lower prices, the outlook is for high pig feed prices until the harvest. In the absence of increased cereal and soya production worldwide feed prices are likely to remain high.

Feed Credit: About 30-33% of the feed used for pig production in Ireland is manufactured on the unit from purchased feed ingredients. These producers normally operate on 7 days credit. Increases in ingredient prices have an immediate financial impact on them.

The majority of the feed used is purchased from compound feed manufacturers on credit terms that usually are substantial - extending to a number of months. As a result, the impact of the increase in feed prices on these producers will have been delayed by typically about 3-4 months. It is in December / January that the impact of the sharp increase in feed prices in September is being felt.

Feed Price Trends: The average feed cost per kg dead weight in 2010 was 93c based on an average composite feed price of €247 per tonne. This was lower than in the previous 3 years

Table 3: Trends in annual pig feed prices and feed cost per kg dead weight (2005-2010)

Year	Average Composite Feed Price € per tonne	Feed Cost Cent per Kg Dead Weight
2005	208	80
2006	214	84
2007	254	97
2008	293	113
2009	252	94
2010	247	93

Source: Teagasc Pig Development Department

2.2 Non-Feed Costs

There are a number of costs that apply on all or at least the vast majority of pig units. These Common Costs represent the major component of non-feed costs. The data in relation to the common costs is from PigSys recorded herds (Table 4). These are herds that record, analyse and bench mark performance and are not necessarily representative of the entire pig sector.

Table 4: Common costs in Pigsys recorded herds (cent per kg dead weight)

Cost	2005-2009	2009
Healthcare	5.1	4.5
Heat. Power, Light	4.4	3.8
Transport	1.1	1.2
AI	1.5	1.5
Manure	2.9	1.8
Labour/Management	15.2	13.8
Repairs	2.4	1.8
Administration	0.5	0.4
Environment	0.7	1.4
Insurance	0.7	0.6
Stock Depreciation	0.5	0.3
Miscellaneous	2.0	2.1
Total	37.0	33.2

Source: Teagasc PigSys Report 2009

Common costs in 2009 were reduced significantly compared to a rolling 5 year average. This is partly explained by increases in slaughter weights and by improved herd health due to the use of effective vaccination programmes. Increased demand for pig manure as a substitute for expensive chemical fertilisers also contributed significantly.

Transport costs include herds where the cost is paid by the slaughter plant as well as herds which pay for transport. A delivered cost of 3c would be typical bringing the total to 35c for pigs delivered to the slaughter plant.

2.3 Herd Specific Costs

These include Interest Payments as well as Building Depreciation. These costs vary greatly from unit to unit.

Table 5: Herd Specific Costs in PigSys recorded herds (cent per kg dead weight)

Cost	2005-2009	2009
Interest	2.8	2.7
Building Depreciation	4.8	4.3
Total	**7.6**	**7.0**

Source: Teagasc PigSys Report 2009

2.4 Total Cost of Production

The estimated cost of production in 2010 was 133 c for pigs delivered to the slaughter plant. By January 2011 this has increased to about 158c per kg dead weight.

3. Pig Price

The average price per kg dead weight in 2010 was 140c.This is significantly lower than in recent years (Table 6)

Table 6: Irish Finisher pig price per kg dead weight (2005-2010)

Year	Pig Price cent per kg dead
2005	135
2006	147
2007	139
2008	152
2009	145
2010	140

Source: Teagasc Pig Development Department

Slaughter pig disposals in 2010 increased significantly compared to 2009 when about 200,000 pigs were lost due to the dioxin feed contamination problem.

Table 7: Slaughter pig disposals from the Republic of Ireland (2005-2010) millions

Year	Republic Licensed Export Plants	Exports to Northern Ireland	Total
2005	2.618	0.519	3.137
2006	2.619	0.478	3.097
2007	2.570	0.512	3.082
2008	2.511	0.457	2.968
2009	2.363	0.482	2.845
2010	2.601	0.551*	3.152

**50 weeks*
Source: DAFF and DARDNI

It is estimated that less than 1500 pigs per week are slaughtered in local authority approved plants and that about 75,000 weaner pigs are exported annually.

Disposal of slaughter pigs in 2010 showed an increase of about 6% on the 2006-2008 level of about 3.1 million head. Live exports of slaughter pigs were at the highest level in the last 8 years.

4. Sow Numbers

The provisional results of the most recent Teagasc survey of commercial pig production units indicate that there were 150,000 sows in commercial pig herds in the country at the beginning of 2011. This represents a slight increase compared with the previous such survey (Table 8).

Table 8: Sow Numbers in commercial Irish pig herds 2001-2011

Year	Sow Numbers (000)
2001	166.1
2003	160.4
2005	154.3
2007	153.0
2009	148.7
2011	150.0

Source: Teagasc Pig Development Department

Ireland is a net exporter of pig meat. EU prices and EU supplies exert an influence on pig prices in Ireland. Sow numbers have been declining in key EU pig producing countries (Table 9).

Table 9: Trends in sow numbers in selected EU member states

Country	Herd Survey Date	Sow Numbers Million head	Change on year earlier %
Netherlands	April / May 2010	1.222	-2.1
Denmark	October 2010	1.053	-5.2
Germany	May 2010	2.240	-2.9
France	May 2010	1.160	-2.4
Spain	December 2009	2.416	-4.0
Poland	July 2010	1.396	1.6
United Kingdom	June 2010	0.351	0
Average of 7		9.838	**-3.0**

Sows in Table 10 are defined as gilts from first service. These countries represent about 88% of EU sow numbers. This data refers mainly to censuses carried out before the effect of the increase in feed prices.

Data from the European Commission May/June 2010 pig survey shows a 0.8% reduction in total pig numbers and a 0.6% reduction in sow numbers

compared to 2009. Sow slaughterings in Germany have increased in the last two quarters of 2010 (Table 10).

Table 10: Average sow slaughterings per week in Germany 2009-2010

Quarter	1	2	3	4
2009	20,257	19,299	20,674	19,791
2010	20,641	20,044	21,780	22,174

Source: ISN

There are significant live exports of cull sows from both Denmark and the Netherlands to Germany. The German sow kill is an important barometer of trends in these three countries. EU sow numbers are in decline but the decline in pig meat supply will be somewhat less as it is the less efficient producers who tend to discontinue or reduce production as margins tighten.

5. Profitability

The Margin over Feed costs per kg deadweight fluctuates widely and has done so in recent years (Table 11).

Table 11: Average Margin over Feed Costs in herds purchasing compound feed (2005-2010) cent per kg

Year	Pig Price (delivered)	Feed Cost	Margin over Feed
2005	135	80	54
2006	147	84	63
2007	139	97	42
2008	152	113	39
2009	145	94	51
2010	140	93	47

Source: Teagasc Pig Development Department

The Margin over Feed costs have, on average, been under 50c over the last 6 years while non-feed costs have been close to 47c per kg for pigs delivered to the slaughter plant. This leads to a rather low return on investment in what are likely to have been the better performing herds.

6. Prospects for 2011

Feed Costs: Further increases in pig feed prices after January 2011 are anticipated due to the high prices of ingredients and as purchasers have significantly reduced quantities bought forward at lower prices. It appears

increasingly likely that feed prices will continue to be higher than they have been in the past.

Pig Prices: From the time a sow is mated, it takes about 42-44 weeks before these pigs are slaughtered. When increased feed prices cause a reduction in pig production, initiated by fewer sows being served, the effect on pig meat supplies is delayed by 10-11 months. It was only in July of 2008 that pig prices reached a level (162c per kg) sufficient to compensate pig producers for the increase in feed prices from the harvest of 2007. A similar pattern in 2011 is not unlikely. Pig meat futures prices appear to support this view with a price increase of 18c from January to July 2011 (Eurex).

Demand for pig meat will affect price prospects. In addition to the impact of the economic recession the demand from third countries export markets has to be considered.

Margins: Increasing feed prices allied to a delayed increase in pig meat prices is expected to put further financial pressure on an already financially hard-pressed production sector. The prospects for the early part of 2011 are difficult but margins are expected to recover towards mid-year. Many producers are facing serious challenges in the coming months.

The welcome extension and then gradual phasing out of the transitional arrangements in the Code of Good Practice Protection of Waters regulations, in relation to the use of pig manure as a fertiliser, will be of benefit to pig producers. However, very substantial capital investment is required over the next two years to have units in compliance with the regulations in relation to the loose housing of sows by 1st January 2013.

SITUATION AND OUTLOOK FOR TILLAGE FARMS 2010/2011

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1. Introduction

The 2010 harvest year was welcomed by the tillage farming sector in Ireland. After the unprecedented highs experienced for cereal prices at harvest 2007, the following twenty four months witnessed a number of factors, economic, political and weather related, which resulted in a significant cost price squeeze for tillage farmers in 2008 and 2009. However, during the second half of 2010 significant increases in international cereal prices resulted in a large increase in Irish harvest farm gate cereal prices compared to the previous two years.

The upward movements of prices since mid 2010 was associated with several factors, the most important of which was a decrease in the production estimates for crops in key producing countries, which resulted in a draw downs of stocks and tighter global supply and demand balances in 2010/1. As production forecasts were revised downwards, policy responses in the form of export restrictions by some countries also contributed to anxiety in world markets. International prices surged rapidly, renewing worries over the tightening cereal supply and demand balance. Another leading factor has been the weakening of the United States Dollar (US Dollar) from mid-September, which continues to sustain the prices of nearly all agricultural and non-agricultural traded commodities in euro terms.

The increase in cereal price, coupled with relatively low moisture levels recorded at harvest had a significant effect on the farm gate value of cereal products in Ireland in 2010. In addition to increases in output value, Irish cereal farmers also experienced price decrease in key inputs, such as fertiliser and seed.

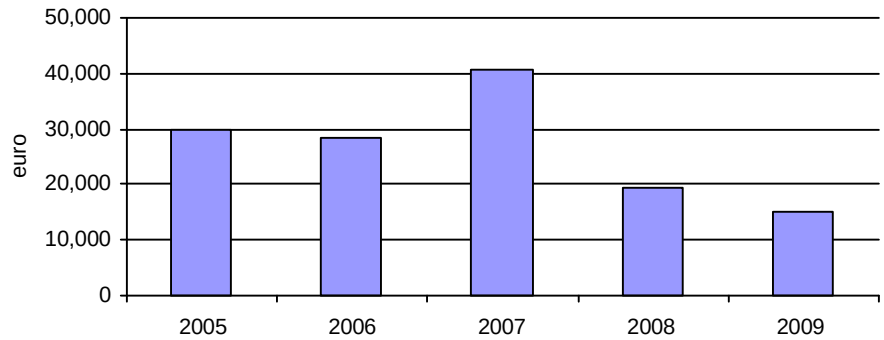
This paper will consider whether the price increases of the 2010 harvest can be considered atypical or whether prices will continue at elevated levels into the 2011 harvest. The costs of production on tillage farms in Ireland will also be considered to arrive at an estimate of tillage enterprise profit for 2010 and a forecast for 2011. This paper uses Irish National Farm Survey (NFS) data (Connolly *et al* 2010) to conduct a review of the financial

performance of tillage farms in 2009. Following this, price and costs are estimated for 2010 to produce an estimate of profit for the 2010 harvest year. In the concluding sections of the paper, the outlook for 2011 is presented.

2. Review of the Economic Performance of Tillage Farms in 2009

Income on specialist tillage farms decreased in 2009 compared to the previous four years as shown in Figure 1 below. Relatively low cereal yields coupled with low farm gate cereal prices and increased costs resulted in an average family farm income (FFI) in 2009 of just over €15,000 which is equivalent to a 50 percent decrease on the average of the previous four years.

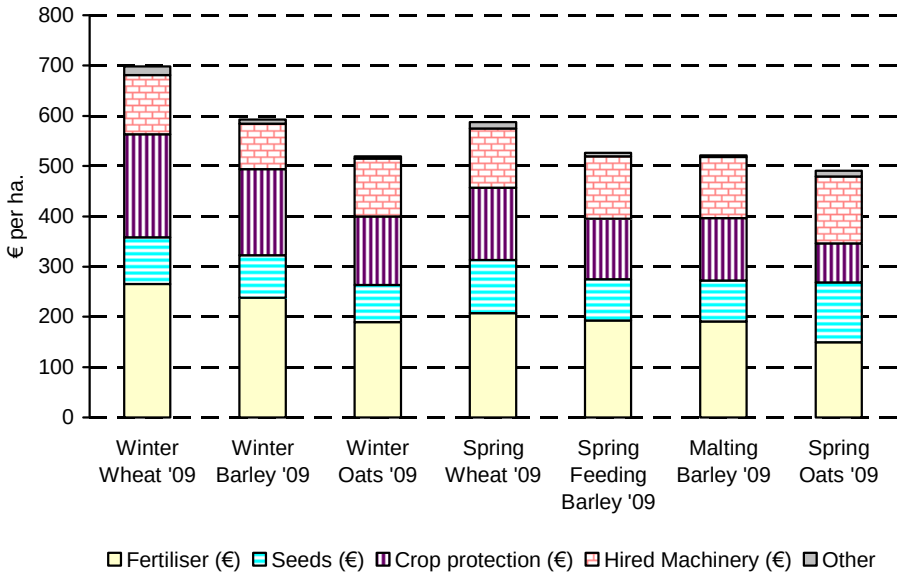
Figure 1: FFI on Specialist Tillage Farms in Ireland: 2005 to 2009



Source: National Farm Survey (various years)

To understand the economic performance of tillage farms in 2009, we begin with a review of the cost and return structure of the main cereal crops using NFS data. Figure 2 disaggregates the direct costs of production for cereal crops in 2009.

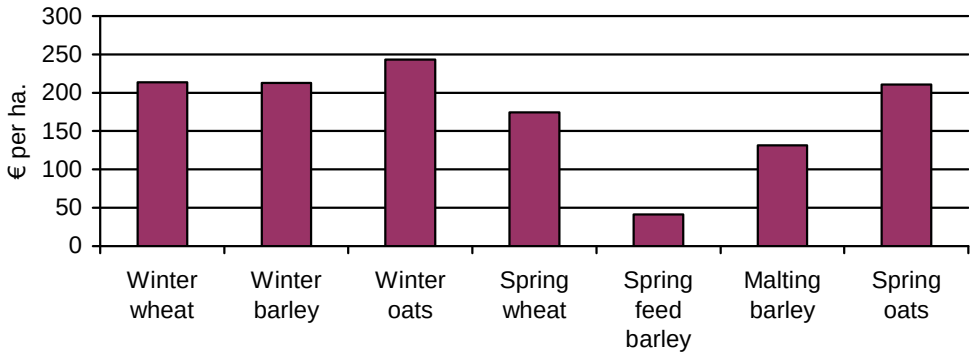
Figure 2: Composition of Direct Costs for Irish Cereal Crops, 2009



Source: National Farm Survey (2010)

Figure 2 shows that in general, direct costs are higher in winter sown crops compared to spring sown crops, which is due to higher fertiliser and crop protection costs in winter crops. However, given that yields are generally higher in winter sown crops the more appropriate comparative economic indicator is gross margin which is shown in Figure 3.

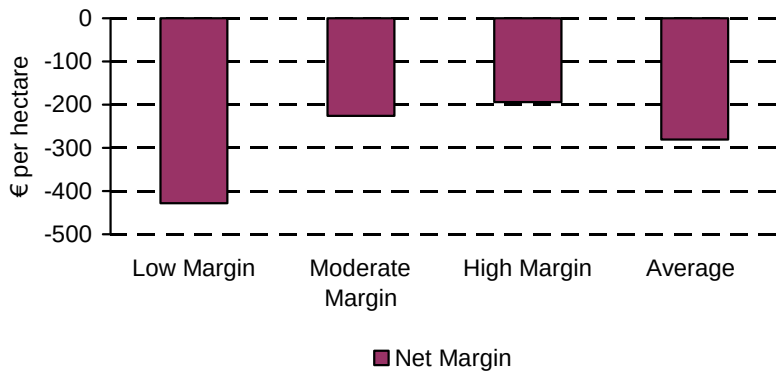
Figure 3: Gross Margins per Ha for Irish Cereal Crops, 2009



Source: National Farm Survey (2010)

Figure 3 shows that the average gross margin per hectare for all winter crops is generally higher than the gross margin for spring sown crops. Winter oats recorded the highest margin of all crops in 2009, closely followed by Winter wheat, winter barley and spring oats. The relatively good performance of the oats crop in 2009 can be attributed to relatively high oat yields attained in 2009 compared to the performance of other crops. The gross margin for all cereal crops was significantly lower in 2009 compared to the average of the previous 5 years. The gross margin for Winter wheat and spring barley in 2009 was 75 percent and 90 percent lower than the previous five year average respectively. While gross margin estimates are useful for comparative purposes, it is also worthwhile to examine the shift in net margin over time. However for cereal crops it is difficult to allocate overhead costs to individual crops within the NFS. For this reason, net margin of the entire specialist tillage farming population within the NFS is examined, shown in Figure 4 below.

Figure 4: Cereal Enterprise on Specialist Tillage System Farms: Net Margin Distributions, 2009



Source: National Farm Survey (2010)

To examine the variation in margin that exists on tillage farms, the sample which was weighted to represent the population of 7,500 specialist tillage farms, was classified into three groups. Farms were classified on the basis of gross margins; the best performing one third of farms are labelled high margin, the middle one third are moderate margin and the poorest performing one third of tillage farms are classified as low margin. The variation in margins across farms is apparent from Figure 4. The net margin for the cereal enterprise per hectare on high margin farms in 2009 was -€194 per hectare compared to -€226 on moderate margin farms and -€428 per hectare on low margin farms. It is important to remember that these margins include production output only; hence by definition the Single Farm

Payment (SFP), which is decoupled from production, is not included in these figures.

3. Estimated Review of 2010 Performance

This section of the paper presents a review of the cereal sector in 2010. To provide an estimate of enterprise profitability for the current year, it is necessary to estimate the volume and price of inputs that are likely to have been used as well the volume and value of outputs. The ensuing sections of the paper discuss first, the movements in input prices and usage in 2010 and second, the cereal market conditions, harvest yields, and production in 2010.

3.1 Estimated Input Usage and Price 2010

3.1.1 Fertiliser – Usage and Price 2010

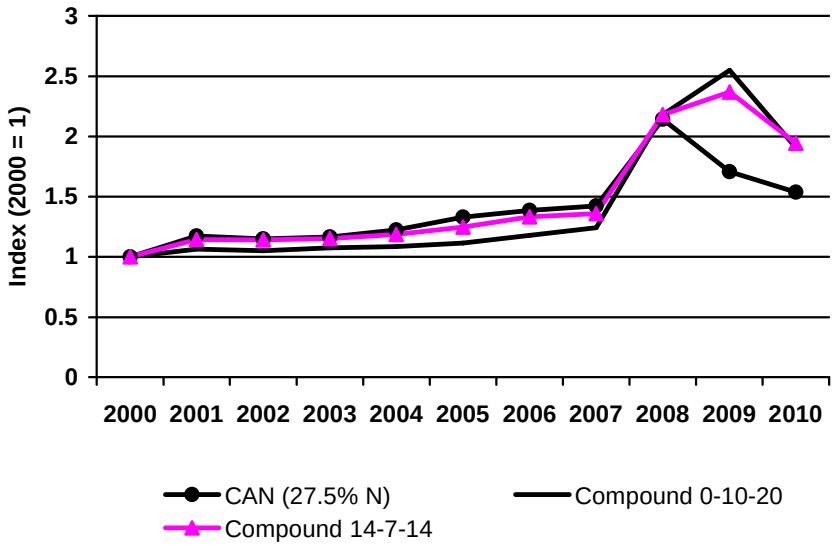
In the early half of the decade fertiliser costs typically comprised about 25 percent of direct costs and just over 10 percent of total costs on tillage farms. However, as illustrated in Figure 5, fertiliser types commonly used on tillage farms have increased substantially in price since 2000, with a very considerable increase occurring during 2008 and 2009. The Central Statistics Office (CSO) recorded price in 2008 for CAN was approximately 120 percent higher than 2000 levels and in 2009 for the compounds 0-10-20 and 14-7-14 in 2009 was approximately 120 percent higher than 2000 levels. Increased energy prices, in particular the price of natural gas which is a key determinant of fertiliser price, was the major driving force behind the upward trend for fertiliser prices throughout the early 2000s. However, since 2008 in the case of CAN, and since 2009 in the case of compound fertilisers, the pressure on fertiliser prices has eased and the 2010 harvest year witnessed a reduction in fertiliser prices. In the 2009/10 harvest year it is estimated that straight nitrogen products decreased by approximately 30 percent over the peak price in 2008, whilst the decrease for compound fertilisers with significant P and K components is estimated to be down between 20 and 25 percent on peak price levels It is important to note however, that these prices are still ahead of the prices recorded in the early part of the decade gone by. Furthermore, the monthly price statistics for the third and later quarter of 2010 once again shows an upward movement in straight nitrogen and compound fertilisers.

The pattern of fertiliser purchases on cereal farms is somewhat different from that of grassland farms, with application been spread throughout the sowing and growing season from September of one year to May or June in the following year, deepening on whether the crop is Spring or Winter sown. On this basis, cereal farmers generally will have benefited from lower

fertilisers prices in 2010. It is estimated that the fertiliser prices for cereal crops were down by approximately 25 to 30 percent in 2010 compared to 2009 depending on whether the crop was winter or spring sown.

On the usage side, DAFF figures indicate that fertiliser purchases in the 2010 fertiliser year (October 2009/September 2010) increased for all three elements, with larger increases recorded for P (up 47 percent) and K (up 44 percent) in comparison with N (up 23 percent). This overall increase in fertiliser usage in 2010 can be attributed to: relatively low prices compared to recent years, increased usage and nutrient deficits becoming apparent on certain farms due to declines in usage in recent years.

Figure 5: Irish Farm Gate Price Index of Straight Fertilisers 2000 to 2010



Source: Central Statistics Office Data for 2000 to 2007. Author's estimates for 2010.

Given that the DAFF figure on fertiliser purchases refers to all fertiliser purchases for grassland and cropland it was necessary to consult reports from farm advisors and industry sources to evaluate the change in fertiliser usage levels for crop farms. Reports from a number of sources seem to indicate that fertiliser usage per hectare was up approximately 5 percent on 2009 levels. However, overall usage on crop farms may not be suggestive of this increase given the decrease in crop area between 2009 and 2010. However in per hectare terms it is assumed that for 2010 usage was down approximately 5 percent. The minor increase in fertiliser usage on crop farms is not estimated to offset the reduction in fertiliser prices experienced

in 2010 leaving overall expenditure per hectare on fertiliser down on 2009 levels.

3.1.2 Seed – Usage and Price 2010

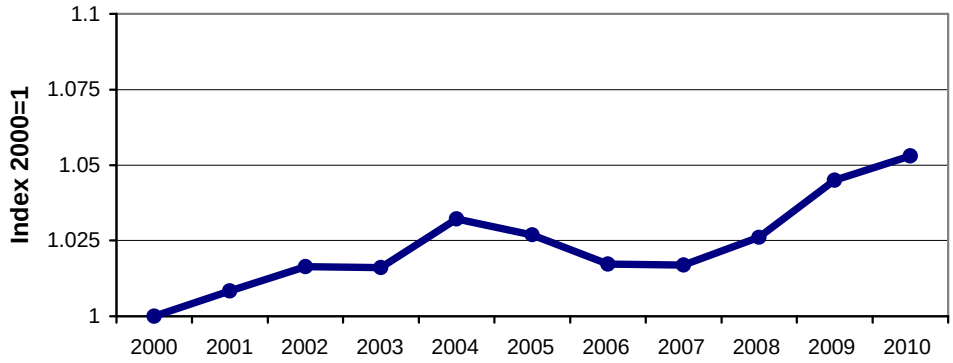
Purchased seed on crop farms is a less important input in expenditure terms in cereal production, comprising between 15 and 20 percent of direct costs for cereal production and just over 11 percent on average on all tillage farms in 2009. In terms of the composition of total costs, seed represented just over 5 percent of total costs in 2009. In 2010, cereal farmers experienced a considerable decrease in seed costs relative to the two previous years due to the significant downward movement in the cereal prices.. In autumn 2009 when seed supplies were purchased for the 2010 harvested winter crops, blue label seed cost decreased by approximately 25 percent, from €550 per tonne in 2008 to €410 per tonne in 2009. This cost decrease was also evident in 2010 for spring sown crops relative to the 2009 sown spring crops. The magnitude of this figure is similar to the seed price index provided by the CSO.

3.1.3 Crop Protection – Usage and Price 2010

The expenditure on crop protection by specialist tillage farms in 2009 accounted for 20 percent of direct costs and 10 percent of total costs. However the contribution of crop protection to the composition of costs can vary significantly depending on the crop, with the percentage spend on winter crops higher than on spring crops. For example on the winter wheat crop in 2009, crop protection costs accounted for 30 percent of direct costs, compared to of 25 percent for the average of all crops.

Compared to other significant costs on tillage farms, the increase in costs of crop protection has been limited over the recent past. Figure 6 shows the increase in costs of crop protection products from 2000 to 2010 was just over 5 percent and the increase in costs between 2009 and 2010 was just under 1 percent. Volume changes between 2009 and 2010 are estimated to be negligible.

Figure 6: Price Index of Plant Protection products in Ireland 2000 - 2010



Source: Central Statistics Office Data for 2000 to 2009. Author's estimates for 2010.

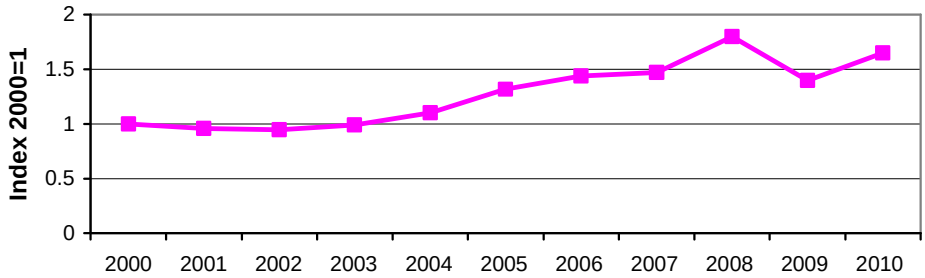
3.1.4 Energy and Fuel – Usage and Price 2010

Energy and fuel are important inputs in crop production. Given that a number of direct costs and overhead costs are directly influenced by energy and fuel prices the trend in energy prices is of significant importance for the average tillage farmer. In this analysis it is assumed that hired machinery and transport costs which are a component of direct costs and machinery operating expenses which are a component of overhead costs are directly influenced by energy inflation. These cost items represented just under 25 percent of total costs on tillage farms in 2009.

Based on the CSO estimates presented in Figure 7, the farm level price of fuel has increased by just under 80 percent between 2000 and 2010. The most significant increase occurred between 2007 and 2008 when the estimated rise in the cost of fuel was 22 percent. While there was a brief period of oil price decreases in 2009, fuel costs began to increase again in early 2010. Between 2009 and 2010 as a result of rising crude oil prices, a weakening of the euro against the US dollar and the introduction of the carbon tax in the middle of 2010, fuel costs in Ireland increased significantly. For winter sown crops the increase in energy prices is estimated at about 10 percent but the increase for spring sown crops is estimated to be larger at about 20 percent for 2010. The differential between the price increase for winter and spring sown crops is due to the relatively large increase in energy prices which took place in 2010 compared to the last quarter in 2009 when a slight moderation in fuel price was experienced when the winter crop was sown. This estimation is based on a comparison of the motor fuel index from the CSO for 2009 and the first

eight months of 2010. Demand for these input items tends to be relatively inelastic with respect to price and therefore it is assumed that usage in 2010 will be on a par with the 2009 level. Overall expenditure on fuel related items is likely to be 22 percent higher in 2010 relative to 2009.

Figure 7: Price Index of Fuel products in Ireland 2000 - 2010



Source: Central Statistics Office Data for 2000 to 2009. Author's estimates for 2010.

3.1.5 All other direct and overhead costs – Usage and Price 2010

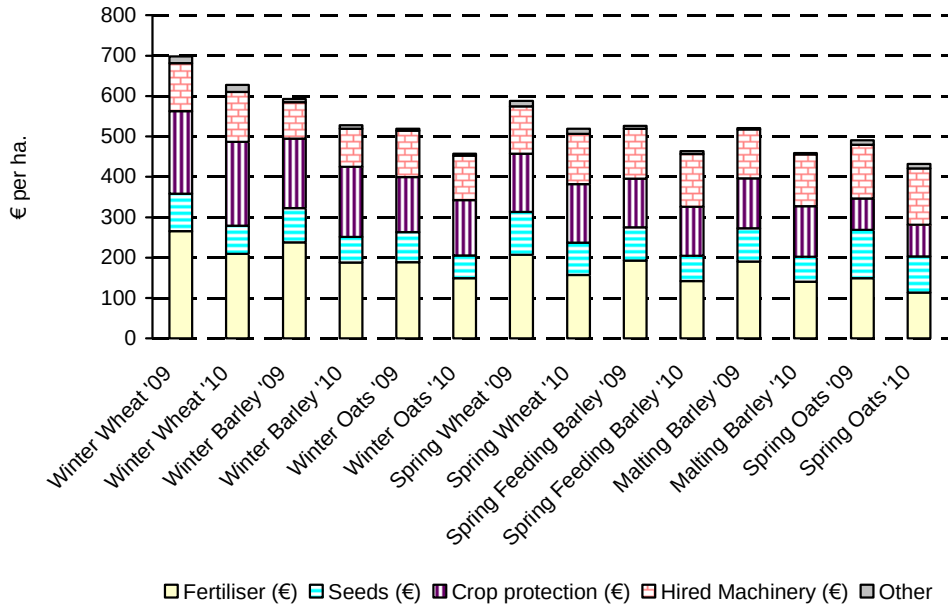
CSO estimates indicate that labour costs and agricultural 'other costs' within agriculture decreased by approximately 1 percent in 2010 relative to 2009.

The average cost of land rental in 2009 on specialist tillage farms was just under 7 percent of total costs. Given that farm gate cereal prices decreased significantly in 2009 there was a consequent decrease in land rental prices. It is estimated that land rental prices decreased by approximately 5 percent in 2010 relative to 2009. This estimate is based on observing historic NFS data on land rental prices. While the convention is to assume that land rental prices react to changes in cereal prices the data from the NFS does not show strong support of this cause and reaction effect. Hence, despite a significant drop in cereal prices and profitability in 2009, it is considered that a significant proportion of rental agreements were not adjusted downwards in 2010.

3.1.6 Estimate of Total Input expenditure for 2010

Total expenditure on all input items is estimated to have decreased in 2010 relative to 2009. The most significant decrease in expenditure occurred with fertiliser, which is estimated to have decreased by approximately 20 percent between 2009 and 2010, taking into account estimated volume and value changes. On average, the decrease in direct costs was approximately 12 percent in 2010 relative to the 2009 level.

Figure 8: Direct Costs on Cereal Production in Ireland 2009 and Estimates for 2010



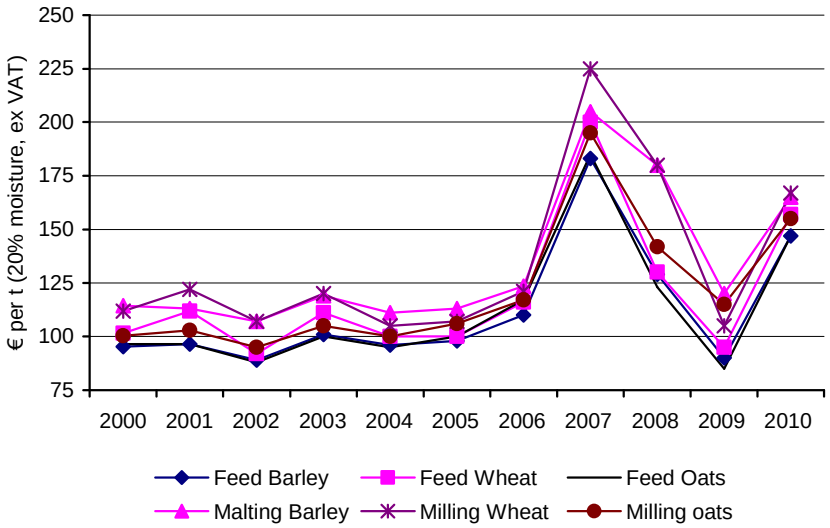
Source: National Farm Survey Data (2010) and Author's Estimates (2010)

3.2 Estimated Output Values 2010

3.2.1 Price, yield and moisture levels in 2010

Unprecedented volatility has been witnessed in cereal prices in Ireland since 2006, with prices reaching a historical high in nominal terms in 2007, followed by a significant drop in prices in 2008 and again in 2009. In 2010 farm gate cereal prices increased significantly but did not reach the levels seen in 2007. Figure 9 below shows that farm gate feed wheat, barley and oat prices at 20 percent moisture were up over 60 percent in 2010 relative to 2009, but were only 10 percent higher than the previous three year average.

Figure 9: Farm Gate Irish Cereal Prices, 20% Moisture, ex VAT, 2000-2010



Source: Author's own estimates

Given that the final farm gate cereal price is based on moisture differences above and below 20 percent, it is also important to consider the weather at harvest in 2010. Table 1 shows that the favourable conditions at harvest in 2010 resulted in moisture contents for all cereal crops well below those recorded in 2009.

The third variable which must be considered when output value is estimated is yield per hectare. Table 1 shows the average green yields obtained in 2009 and 2010. In general for the 2010 harvested crops, sowing conditions for winter crops were relatively poor but much improved for spring cereal crops. The weather conditions during the growing season were favourable with dry weather in the summer months having a positive impact on grain fill. Hence, on average crop yields in 2010 were described as slightly above 'average'. However, it must be remembered that these yields are green yields and not adjusted for moisture content.

Table 1: Average Yields and Moisture Levels, 2009 – 2010 Harvest

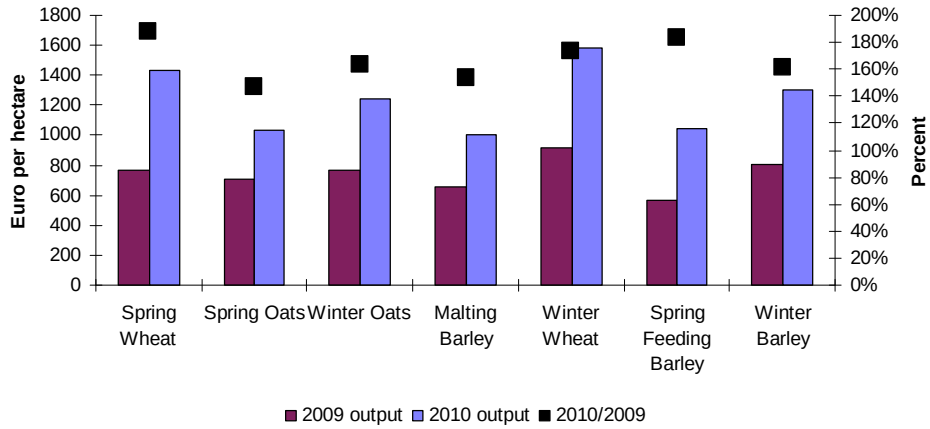
	Yield (tonne per ha.)		Moisture (%)	
	2009	**2010**	**2009**	**2010**
Winter Wheat	8.6	9.1	20	17.7
Winter Barley	8.5	8.6	18.8	18.5
Winter Oats	7.9	7.8	18.8	18.2
Spring Wheat	6.8	7.6	19.3	18.3
Spring Barley	6.0	6.7	18.5	17.5
Spring Oats	6.7	6.7	19	18.6

Source: CSO 2009 & Teagasc Harvest Report (2010)

3.2.2 Estimate of Total Output Value for 2010

Total output value per hectare for all cereal crops is estimated to have increased quite considerably in 2010 relative to 2009. Output was up at least 50 percent on 2009 levels.

Figure 10: Actual Gross Output per Hectare 2009 & Estimated Gross Output per Hectare 2010

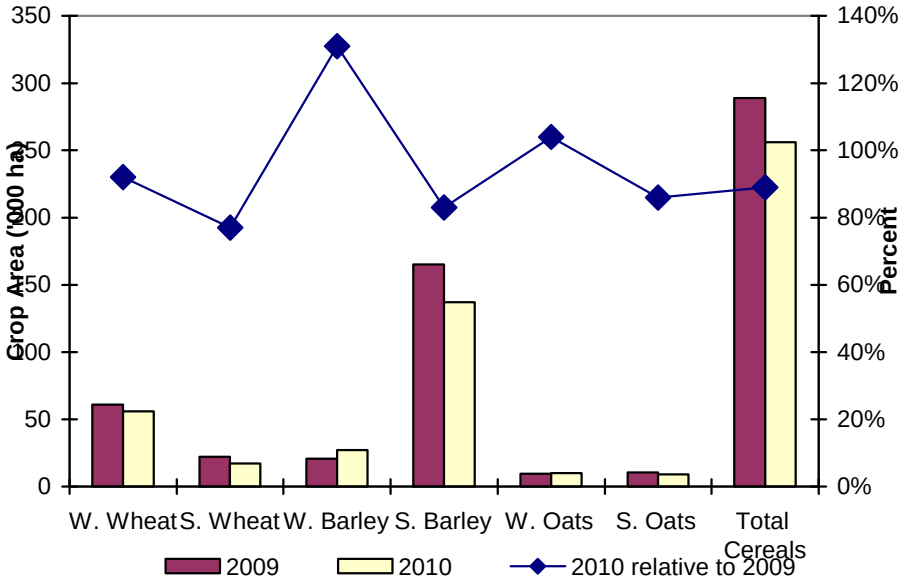


Source: National Farm Survey (2010) and Author's own estimates

3.2.3 Estimate of Total Production 2010

The figures presented in section 3.2.2 illustrate output value per hectare. However these estimates do not take into consideration the decrease in area devoted to cereal crops in 2010. Figure 11 shows the area estimates for 2010 based on Single Farm Payment (SFP) returns compared to CSO estimates of area for 2009.

Figure 11: Change in Irish Crop Area from 2008/09 to 2009/10 crop year in Ireland



Source: CSO and Teagasc Harvest Report (2010)

Figure 11 shows that the total area devoted to cereal production decreased by 11 percent in the 2009/10 crop year compared to the 2008/09 crop year. The largest decrease in area was witnessed in spring wheat, where total area devoted to the crop decreased by 23 percent year on year. Total wheat and barley area decreased by 12 percent and oats decreased by 11 percent year on year. The only two cereal crops which recorded an increase in area were winter oats and winter barley.

Table 2 combines actual total cereal production for 2009 as reported by the CSO with estimated total cereal production for 2010. The estimated 2010 production of wheat, barley and oats is based on 2010 yield estimates from the Teagasc harvest report and Single Farm Payment (SFP) return statistics for the 2010 area planted. The estimated production levels of all cereal crops except winter oats and winter barley are down for 2010 on their 2009 levels. Overall cereal production is estimated to be down 54,000 tonnes or 3 percent on 2009 levels.

Table 2: Actual and Estimated Cereal Production 2010 and 2009 (000 Tonnes)

	2010	2009	%Change
Wheat	639	674	-5%
Barley	1149	1167	-2%
Oats	145	147	-1%
Total	1933	1987	-3%

Source: CSO and Teagasc Harvest Report 2010

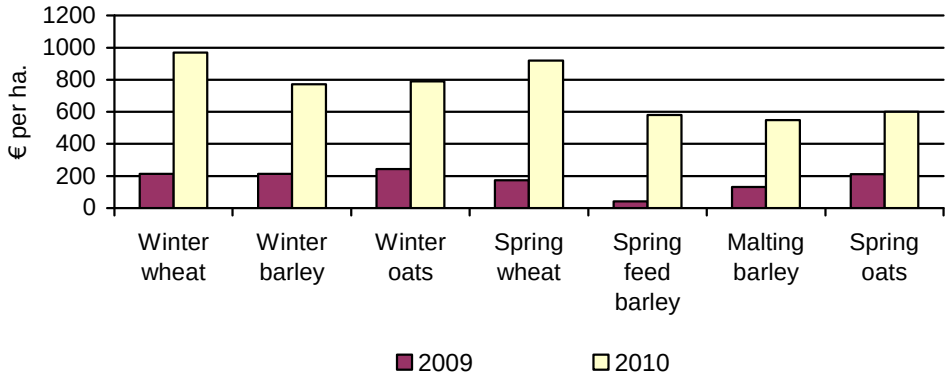
3.2.4 International Production Estimates for 2010

While production estimates for Irish cereals are important from a national supply, demand and balance sheet perspective, it is primarily developments in the international supply and use balance for cereals that affects price development. For this reason a review of the international end stocks for cereals is more informative when price developments for the coming harvest year is been estimated. The latest edition of Strategie Grains (December 2010) estimates that the total production of cereals within the EU for the marketing year 2010/11 was 250,8 million tonnes, with 8,2 million tonnes of carry out stocks. Carry out stocks are significantly down on the previous marketing year when 13,4 million tonnes of carry out stocks were available. The IGC estimates (Straregie Grains, December 2010) shows a similar situation for world cereal production in the 2010/11 marketing year relative to 2009/10. The estimates for world production of wheat and barley for 2010/11 relative to 2009/10 are for a 5 pre cent and 15 percent decrease in production respectively. Carry out stocks compared to carry in stocks in 2010/11 are estimated to be down 10 percent for wheat and 25 percent for barley.

3.3 Review of Tillage Enterprise Margins in 2010

The review of cereal output value showed that the average value of output received by farmers across all cereal crops was approximately 50 percent higher than the average in 2009, while the review of input costs concluded that total direct costs were approximately 12 percent lower in 2010 than 2009. Figure 12 presents the effect on gross margin for each of the main cereal crops.

Figure 12: Actual Gross Margin in 2009 & Estimated Gross Margin for 2010 for each of the Main Cereal Crops



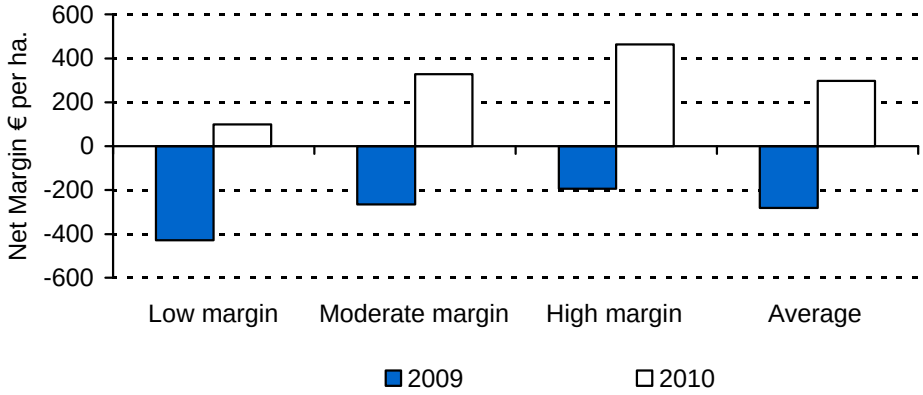
Source: National Farm Survey (2010) and Author's Own Estimates for 2010

Figure 12 shows a significant increase in gross margin for all cereal crops in 2010 relative to 2009 due to the increase in output value coupled with the estimated decrease in direct costs. For example, the gross margin for winter wheat is estimated to be up by approximately €750 per hectare, while the gross margin for spring barley is estimated to be up by approximately €530 per hectare on the 2009 level. It should be noted that the average gross margin figures presented above are market based gross margins and therefore exclude all decoupled payments.

Similar to the format used to present margins for 2009 earlier in the paper, the estimated net margins for 2010 are presented for the cereal enterprise on specialist tillage farms, as well as the population disaggregated into one-third groupings based on margins obtained.

Figure 13 shows the cereal enterprise net margin estimates for 2010 relative to 2009, for the average of the specialist tillage farming population, in addition to the margins for the disaggregated population.

Figure 13: Actual Net Margin 2009 and Estimated Net Margin for 2010 for the Cereal Enterprise on Specialist Tillage Farms



Source: National Farm Survey (2010) and Author's own estimates

The estimate for net margin in 2010 shows a significant improvement over the margins obtained in 2009. For the best performing one-third of tillage farmers the estimated net margin for 2010 was €463 per hectare, and for the average farmer was €297 per hectare. It is important to remember that these figures exclude the SFP.

4. Outlook for 2011

In this section forecasts are provided on the expenditure for various input items in 2011, the farm gate cereal price that will prevail at harvest 2011 and the likely net margin of tillage farmers in 2011.

4.1 The Outlook for Input Expenditure

4.1.1 Fertiliser – usage and price 2011

A number of factors need to be considered when price and volume changes for fertiliser on crop farms are forecast for 2011. While fertiliser prices have increased month on month over the last quarter of 2010, it is expected that nitrogen and P and K compounds will rise more dramatically in the first half of 2011. The upward trend in fertiliser prices can be attributed to a rise in oil prices, increase in commodity prices and uncertainty regarding supply capacity. Retail prices been quoted for CAN and P&K compounds (in January 2011) are up approximately 20 percent and 25 percent respectively on prices for the same period last year.

Fertiliser usage in 2011 is expected to be only slightly below 2010 levels, given that for agronomic reasons the scope for reduction in use in response to higher fertiliser prices is limited for cereal production. In addition, given that the forward prices for cereals are strong as of December 2010 the pressure at farm level to reduce costs might be somewhat less than in previous years. A reduction in fertiliser usage of approximately 5 percent (per hectare terms) is assumed for 2011. Overall, it can be expected that fertiliser expenditure will increase by about 20 percent in 2011. This expenditure increase is somewhat more than the expenditure increase expected on livestock farms due to (i) the significantly higher proportion of P and K in compounds for cereals relative to grassland and (ii) the proportionate reduction in usage for grassland is expected to be greater than that for cereals.

4.1.2 Seed – usage and price 2011

As mentioned previously in the paper, cereal farmers benefited from a decrease in seed costs in 2010 relative to the previous two years due to the significant downward movement in the cereal markets. However, given the recovery in cereal markets which occurred at harvest 2010, there has been a consequent increase in seed prices for 2011. At present blue label seed prices are up about 12 percent on 2010 levels.

4.1.3 Crop protection – usage and price 2011

The increase in costs between 2010 and 2011 is forecast to be of a similar magnitude to the changes seen in 2009 and 2010,, which was minimal at just under 1 percent. Volume changes between 2010 and 2011 are forecast to be negligible.

4.1.4 Energy and Fuel – usage and price 2011

Fuel costs in 2011 will depend mainly on the evolution of crude oil prices. Current crude oil futures prices suggest that prices will increase from the 2010 average during the course of 2011. For the purposes of this analysis it is assumed that fuel costs will increase by approximately 15 percent in 2011, due to increases in crude oil prices and the introduction of the carbon levy. Less than half of the increase in fuel costs is assumed to be translated to contractor charges in 2011. Assuming that usage is unchanged, expenditure on fuel and contractor charges are estimated to reflect the assumed price increase.

4.1.5 All other direct costs and overhead costs2011

Given the continued weaknesses in the wider economy the outlook for labour costs and other agricultural costs are forecast to remain at 2010 levels in 2011. While this is currently come uncertainty regarding the

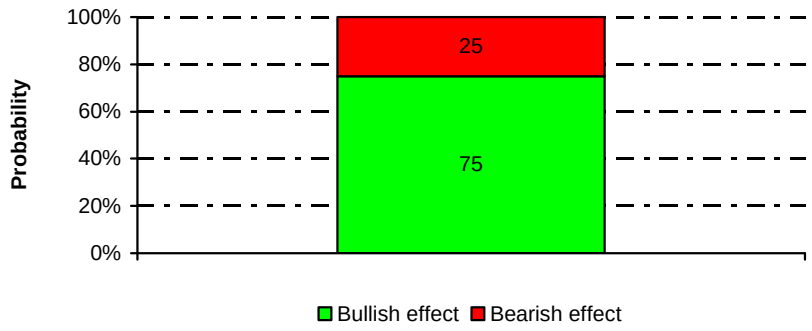
direction of the agricultural wage rate for 2011 for the purpose of this analysis, it is assumed that expenditure will remain constant.

Given that farm gate cereal prices increased significantly in 2010 there is significant speculation regarding land rental prices for 2011. Based on NFS data, on average land rental prices have historically not reacted very strongly to changes in cereal farm profitability. Hence, for 2011 it is assumed that land rental prices will increase by about 10 percent despite a significant increase in cereal prices at harvest 2010.

4.2 The Outlook for Markets 2011

The cereals market has encountered significant volatility in recent years. Planting decisions will be based on expected farm gate cereal price in 2011. A number of factors must be taken into consideration when price forecasts for the coming harvest are being evaluated. To formally evaluate the risk associated with predicting the 2011 harvest price an econometric analysis was conducted to predict the probability that the 2011 farm gate price will be higher or lower than the 2010 price. This analysis was based on the December 2010 LIFE futures price for September 2011. The regression analysis examined the historic relationship between (i) predicted futures price for the following harvest, made from the previous December when planting decisions were been made, and (ii) the actual farm gate price paid at harvest one year hence. This regression analysis enabled a forecast to be made of the 2011 Irish farm gate cereal price for wheat taking into consideration the differences between the historic predicted values and the actual outcome.

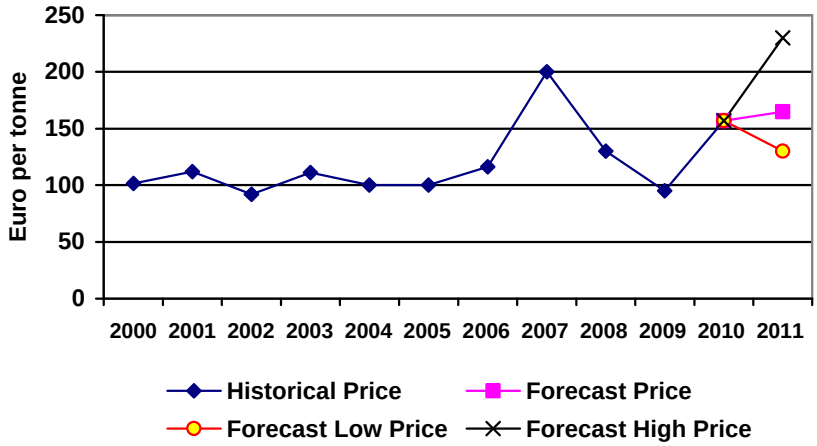
Figure 14: Probability that the 2011 Irish Cereal Price will be lower/higher than €150



Source: Author's own estimates

Figure 14 shows that there is significant volatility around the forecast for the 2011 harvest price. There is a 75 percent probability that the wheat price at harvest 2011 will be higher than the €150. However there is also a 25 percent probability that the 2011 price will be lower than €150 per tonne. Based on these probabilities the average predicted value from the model for the farm gate wheat price is €165 per tonne at 20 percent moisture. However, there is significant variation surrounding this figure and based on a 90 percent confidence interval it is forecast that the figure could be as low as €130 per tonne or as high as €230 per tonne (Figure 15).

Figure 15: Historic, Estimated and Forecasted Farm Gate Feed Wheat Price (2000 – 2011)



Source: Author's own estimates, 2011 forecast, at 90% confidence interval

The latest estimates for planted area in the EU would seem to indicate that there will be modest downward pressure on cereal markets in 2011 compared to the rise in cereal prices witnessed in the last quarter of 2010 and forecast to continue into the first half of 2011. The latest edition of Strategie Grains (December 2010) has forecast a 2 per cent increase in planted area in the EU for the 2011 harvest. These area estimates, together with trend yield values, provide a first estimate of EU cereal production in 2011 of 291 Mt which is up 6% compared with 2010. This increase in production should ease the pressure on cereal markets which has been witnessed in recent months and is expected to continue into mid year based on latest futures price forecasts. The increase in production forecast for 2011 will reduce pressure on cereal prices at harvest 2011, but best

estimates at present are still for a slight increase in cereal prices over the 2010 harvest price level.

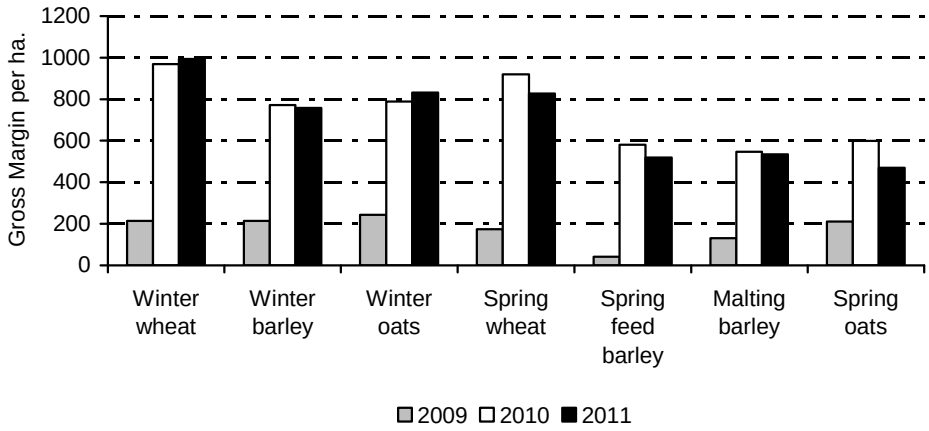
Based on the futures market forecast and the adjustments made in the regression analysis for predicted versus actual outcomes, it is assumed for this analysis that farm gate cereal prices will increase marginally in 2011, by about 5 per cent. In addition to farm gate cereal prices at 20 per cent moisture, account is also taken in the 2011 forecasted net margin for a return to average moisture levels in 2011, which would see a slight increase in moisture levels for some crops which were harvested at relatively low moistures in 2011.

4.3 The Outlook for Tillage Enterprise Margin in 2011

Increases in energy, fertiliser, rent, and contractor prices coupled with a static general inflation factor for other inputs, suggest that cereal production costs are likely to be higher in 2011 relative to 2010. In addition, output value is expected to increase marginally for some crops and decrease marginally for others over 2010 levels. The source of output changes is based on yield and price forecasts.

Figure 16 presents the actual gross margin for each of the main cereal crops in 2009, and the respective estimates and forecasts for 2010 and 2011. The net effect of input price, output price and volume movements is only slight movements in gross margin forecasts for 2011 for each of the main cereal crops. Some crops are forecast to have slightly higher margins and some are forecast to have slightly lower margins. While direct costs are forecast to increase across the board, based on trend yield forecasts, yields may be slightly lower than those achieved in 2010. For example, gross margins for winter wheat are forecast to increase by approximately €30 per hectare, while gross margins for spring barley are forecast to decrease by approximately €80 per hectare. The anticipated slight improvement for winter wheat relative to spring barley in 2011 is due to the above average barley yield achieved in 2010 and the expectation that this will not be repeated in 2011. Hence if average wheat yields are achieved in 2011, this will represent an increase relative to 2010. It should be noted that the average gross margin figures presented are market based gross margins.

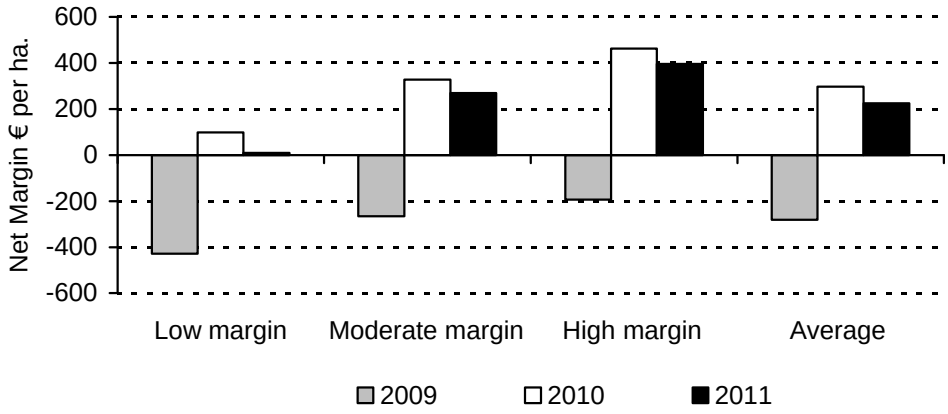
Figure 16: Actual 2009, Estimate 2010 and Forecast 2011 for Cereal Crop Gross Margins



Source: National Farm Survey (2010) and Author's own estimates

Similar to the format used to present margins in 2009 and 2010 earlier in the paper, the forecasted net margins for 2011, are presented for the cereal enterprise on specialist tillage farms, as well as the population disaggregated into one-third groupings based on margins obtained. Figure 17 shows the forecasted net margin for the cereal enterprise in 2011 which is slightly lower than the estimated margin in 2010, but substantially higher than the margin for 2009. The main reasons for the slightly lower net margin in 2011, of approximately €50 per hectare can be attributed to a rise in direct costs and some overhead cost components, coupled with a slight reduction in yields and moisture levels in 2011 relative to 2010. The forecasted rise in output price of around 5 percent is not enough to negate the rise in input costs. However, it is important to remember that while net margins in 2011 will be slightly below 2010 levels the forecast still remains significantly higher than the average of the previous three years.

Figure 17: Net Margin Actual 2009, Estimate 2010 and Forecast 2011 for the Cereal Enterprise on Specialist Tillage Farms



Source: National Farm Survey Data (2010) and Author's Estimates

4.4 Economic Analysis of Non Cereal Crops

At present the outlook for non cereal crops such as potatoes and other horticulture food and non food crops can not be examined in the same detail as cereals given the limited micro data for potatoes in the NFS. While data on potatoes is collected within the survey the sample size is not large enough to report statistically rigorous sample averages. In 2011 a new data collection process has been initiated to facilitate more in depth economic analysis of non cereal crops.

This new area of research involves collection of time series data to enable econometric analyses of price and production data for potatoes to better understand the relationship between supply and price in the national market. In addition, a new Teagasc profit monitor programme is planned for non food horticulture crops in 2011.

5. Concluding Comments

The 2009/2010 production year proved to be an improved year for tillage farmers. Reduction in global stocks, adverse weather in the Former Soviet Union, America and Europe led to a dramatic price increase for all cereals within Ireland and globally. Coupled with significant cost decreases in key input variables, the estimated gross and net margins for cereals crops were considerably higher in 2010 than the 2008 and 2009 returns. However it is anticipated that the price of key input variables such as fertiliser, land rent

and fuel will increase in 2011. There is considerable volatility in the cereals market but based on futures trading prices i9n December 2010, it is assumed that 2011 harvest prices will be slightly up on 2010 levels. The movements in input and output price variables are forecast to result in only slight downward pressure on gross and net margins in 2011. Relative to the volatility which has been witnessed in the margins on cereal farms over the past number of years, the forecast stabilisation of margins will be a welcome development for many cereal farmers in 2011. However, it must be remembered that world stock levels remain below preferred levels and any significant weather effects in the 2011 harvest year in key production areas will see the reintroduction of volatility to the markets. Finally, given that volatility will remain an issue over the medium term, without risk management strategies Irish cereal farmers will continue to see fluctuations in margins into the future.

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