Situation and Outlook in Agriculture 2008/09

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FARM INCOMES 2007

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Overview of 2007

Family Farm Income (FFI) increased from €16,680 per farm in 2006 to €19,687 in 2007 – an increase of 18%. Gross output per farm increased by 9% with direct and overhead costs increasing by 2.9% and 5.4% respectively in 2007, resulting in an overall increase of 4.1% in total costs. The increase of 18% in FFI in 2007 following a decline of 26% in 2006 and an increase of 44% in 2005 show the volatility in farm incomes following decoupling of direct payments in 2005 compared to the relative stability, albeit at low income levels, in the previous decade of coupled payments and product price supports mechanisms (Table 1).

Changes in FFI ranged from minus 10% on the Mainly Sheep System to plus 42% on the Mainly Tillage farms and by plus 41% on Specialist Dairying farms. There was a decline of 7% and 5% in FFI respectively on the Cattle Rearing and Cattle Other Systems. Nationally average direct payments increased by 1% from €16,346 per farm in 2006 to €16,524 in 2007. Average direct payments remained stable across all systems of farming from 2006 to 2007. In 2007 direct payment and subsidies contributed 31% of Gross Farm Output and 84% of FFI. The decline in the contribution of direct payments to farm output and income in 2007, compared to previous years, was due mainly to the increase in market output in both the dairy and tillage sectors resulting from higher farm gate prices for milk and cereals.

Net new investment amounted to €9,937 per farm in 2007 – an increase of 66% on 2006 and accounted for 50% of FFI. This large increase in on-farm investment in 2007 had been forecasted in late 2006, when a survey on the NFS sample showed an 88% increase in planned investment for 2007. Obviously not all the planned investment was undertaken but the increase of 66% in actual investment in 2007 resulted in farmers investing on average 50% of their FFI. Average investment on specialist dairy farms increased from €11,796 per farm in 2006 to €23,524 in 2007 i.e. by 100% resulting mainly from investment to comply with environmental regulations and slurry control and storage. Investment on tillage farms increased from €7,747 in 2006 to €18,735 in 2007, an increase of 142%. The incidence of off-farm employment of holder and/or spouse was the same in both 2006

and 2007 at 58%, with the holder having an off-farm job on 41% of all farms nationally.

Trends in Farm Income

In the Teagasc National Farm Survey (NFS), the principal measure of the income which arises from the year's farming activities, is Family Farm Income per Farm (FFI). This is calculated by deducting all the farm costs (direct and overhead) from the value of farm gross output.

Table 1 shows average Family Farm Income (FFI) per farm over the period 2000 to 2007.

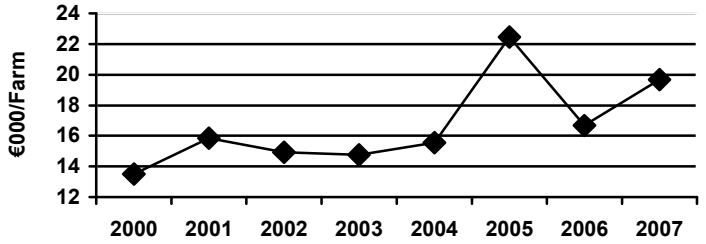
Table 1: Family Farm Income (FFI) € per farm 2000-2007

Year	FFI (€/Farm)
2000	13,499
2001	15,840
2002	14.917
2003	14,765
2004	15,557
2005	22,459
2006	16,680
2007	19,687

Source: National Farm Survey

The data shows farm income in 2007 was 46% above that for 2000 in current terms. The trend in FFI is shown in Fig 1. The main reason for the increase shown from 2004 to 2005 years is the once-off carryover of arrears of direct payments from 2004. However this increase was reversed in 2006 as shown in Fig. 1, with incomes increasing again in 2007.

Figure 1: Family Farm Income per Farm (€) 2000- 2007



Source: National Farm Survey

Average Family Farm Income

Income discussed so far relates to average farm income and it is important to point out that the average national FFI figure conceals the wide range of variation that exists across the different farm systems and sizes. The data in Table 2 summarises the average levels of Family Farm Income per farm, which were achieved in 2007 across the range of farming systems and size groups. When evaluated in conjunction with other NFS data, the following conclusions can be drawn.

- The results show that there is a positive relationship between farm size and FFI. On many farms, particularly in the intermediate size groups, income per hectare also increases with farm size. However, smaller farms cannot compensate for their lack of scale and therefore with the exception of the Specialist Dairy system, farms under 20 ha had extremely low incomes.

- Similar to previous year's results, the average FFI on the dairy and tillage systems are far higher than those on cattle and sheep systems of farming. Average farm income on the larger Cattle Rearing and Cattle Other Systems was €48,367 and €50,135 respectively per farm, compared to €116,500 on the largest tillage farms and €100,094 on the largest Specialist Dairying System.

- The average FFI for many sub-groups, especially in the Cattle and Sheep systems is below the average agricultural wage rate of €17,542 for 2007, so that those farm families do not receive a full return for their labour and no return on management or investment.

Table 2: Family Farm Income by System and Farm Size (UAA) – 2007

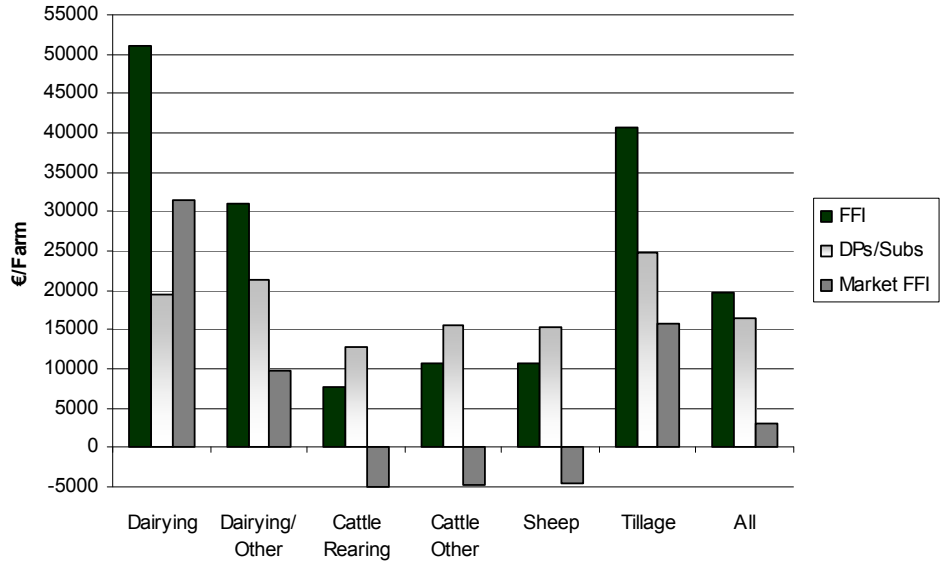
Size (ha)	<10	10-20	20-30	30-50	50-100	>100	Hill Farms	All
	€/Farm							
Dairying	-	18100	29000	54000	75600	100100	36500	51000
Dairying/ Other	-	-	-	18000	57800	87100	-	31100
Cattle rearing	-	4900	5800	11200	19600	48400	4600	7700
Cattle other	2600	4100	6900	16800	25800	50100	8900	10700
Mainly sheep	-	5100	8900	15000	19200	47800	9100	10700

Mainly tillage	-	-	-	28000	52600	116500	-	40600
All	2600	5900	10600	25300	46600	81500	10800	19700

Source: National Farm Survey 2007

The dependency of each system on direct payments is shown by excluding direct payments from FFI, resulting in a market based FFI (Fig. 2) by farm system. It is clearly evident that market output for the drystock systems is not sufficient to cover production costs and that a major contribution of direct payments is needed to make up the shortfall. In the current decoupled situation farmers need to seriously examine their production systems in an effort to cut costs and at a minimum retain their direct payments and subsidies

Figure 2: FFI, Direct Payments and Market FFI by Farm System – 2007



Source: National Farm Survey 2007

Gross Output and Costs

The efficiency and competitiveness of Irish agriculture can be examined by calculating the costs of production for the main products. On a national basis 63% of gross output was absorbed by total costs in 2007. If direct payments are excluded from gross output, then costs as a percentage of the market based value of gross output in 2006 was 91%. This has declined from 99% and 96% in 2006 and 2005 respectively; due mainly to the increase in market based output.

In 2007 only 23% of farms were capable of keeping total costs below 50% of output, similar to that of 2006 (22%), whereas 39% of farms had costs which were above 70% of output.

Analysis by Farming System

- The 2007 year was one of the best years on record for dairy farmers. Following years of relatively static milk prices, the increase in farmgate price of milk in 2007 resulted in record profit margins for the sector. Average FFI per farm on the Specialist Dairy farms increased by approximately 41% in 2007 to €51,017. Total output increased by 19% with milk output increasing by 29%. Direct and overhead costs both increased by 6% and 10%, respectively, resulting in total costs increasing by 8%.

- Farmers in the Dairy/Other System also saw increased incomes in 2007 with FFI per farm increasing by 25% to €31,068. This increase was due to higher milk prices as total costs increased by 1%.

- The 2007 year was difficult financially for suckler farmers with incomes on the Cattle Rearing System declining to €7,702 per farm in 2007, a decline of 7% on 2006 figure of €8,291. Gross output increased by just over 1%, but there was an increase of 4% and 7% respectively in direct costs and overhead costs. This was the main reason for the reduced FFI. Direct payments per farm for this system increased by 3% in 2007.

- Income on the Cattle Other System declined by 5%, mainly as a result of direct and overhead costs increasing by 5% and 4% respectively. Direct payments increased by almost 2% to €15,492 per farm resulting in gross output increasing by 1% giving an FFI per farm of €10,710. FFI on both the Cattle Rearing System and the Cattle Other System was still only 24% and 33% respectively of the Average Industrial Wage in the 2007 year (€32,014).

- Income on the Mainly Sheep System declined from €11,902 in 2006 to €10,682 in 2007, a decline of 10%. Total farm output for this system declined by 7% while market based gross output declined by 9%. There was a 5% decline in direct payments for the Sheep System, with direct costs declining by 7% and overhead costs also declining by over 3%. This was the only system that managed to contain both the direct and overhead costs during 2007 but as a result of the decline in gross output. Resulting from the decline in direct payments and market output, sheep farmers were unable to retain their FFI at 2006 levels.

- 2007 was a good year financially for tillage farmers as average FFI for the Mainly Tillage System increased by 42% in 2007 to €40,611 in comparison to €28,536 in 2006. The Mainly Tillage System includes farms which can have a high proportion of output from livestock, as well as from crops, as described in Appendices B and C. Direct and overhead costs on tillage farms increased by 4% and 6% respectively in 2007. For the previous three consecutive years both direct and overhead costs declined on Tillage farms so that 2007 broke this trend.

The above summary in relation to farming systems refer to changes in per farm output, costs and incomes and does not allow for year to year changes in farm size. However the effect of differences in farm size is shown in Table 3, which shows average FFI per hectare of land farmed across the different farming systems. Average FFI/Ha for all systems in 2007 at €553 showed an increase of 18% on 2006 figure of €470/Ha. As in previous years dairying yielded the highest FFI/ha, followed by Tillage with Cattle Rearing System yielding the lowest returns.

Table 3: Family Farm Income per Ha 2006/2007

	2006	2007	% Change 2006/07
	€/Ha		
Dairying	814	1,134	+ 39
Dairying/Other	511	647	+ 27
Cattle Rearing	300	277	- 8
Cattle Other	379	356	- 6
Mainly Sheep	353	316	- 10
Mainly Tillage	506	741	+ 46
All Systems	470	553	+ 18

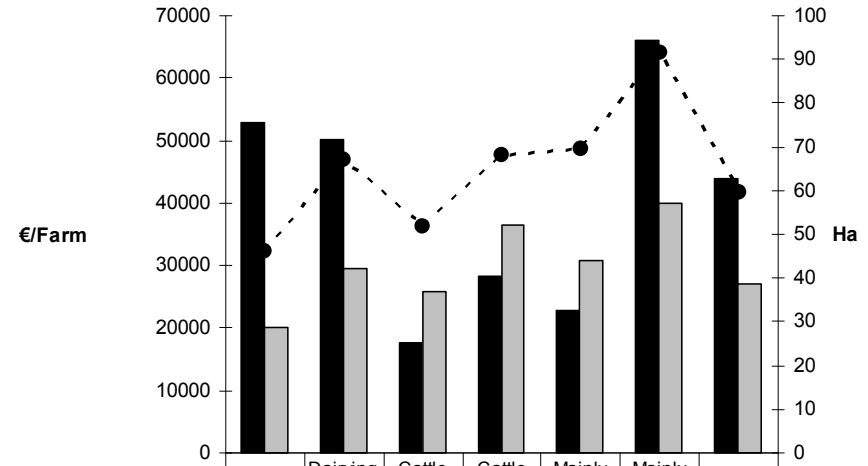
Source: National Farm Survey 2007

Full-time and Part-time Farms

A full-time farm in the National Farm Survey is defined as requiring at least 0.75 standard labour units to operate calculated on the basis of standard man day (SMD) requirements, whilst part-time farms require less than 0.75 labour units. The number of SMD required by an enterprise varies according to the standard of the farm facilities. Farms are therefore divided into full-time and part-time on the basis of the estimated labour required to operate their business as distinct from labour available which is often in excess of that required. Data are also collected on the actual hours of labour input by farming system, as estimated by the farm operator. The actual labour input compared to the labour required on the basis of SMD

provides an estimate of the degree of over or underemployment of labour for the main farming systems. The presence or absence of an off-farm job is not taken into consideration in the definition.

Figure 3: FFI, Direct Payments for Full-Time farms by farming system - 2007



	Dairying	Dairying /Other	Cattle Rearing	Cattle Other	Mainly Sheep	Mainly Tillage	All
FFI	52844	50209	17665	28361	22870	65960	43938
Direct Payments	20136	29476	25780	36592	30743	39927	27115
Farm Size (Ha)	46.2	67.0	51.9	68.1	69.5	91.5	59.5

Full-time farms therefore represent the larger more commercial sector of farming and in 2007 accounted for just under 32.5% (or 36,400) of all farms represented. Data in Fig. 3 details FFI, direct payments and farm size for the full-time farms by farming system. Fifty eight per cent of full-time farms were in the two dairying systems, with a further 9% in the Mainly Tillage System and the remaining 33% in the drystock systems.

The average FFI on full-time farms in 2007 was €43,938 compared to €34,486 in 2006– an increase of 27%. This FFI was even higher than the income figure of €40,485 in 2005 on full-time farms, which would also have included the carryover of payments following the changeover to the decoupled system. As the case in previous years, the Tillage and Dairying systems had the highest FFI per farm at €65,960 and €52,844 respectively (being €50,443 and €38,690 respectively in 2006), followed by Dairying/Other at €50,209.

On 19% of full-time farms, the farmer had an off-farm job, whilst on 42% of farms the spouse had an off-farm job. Overall on 52% of full-time farms either the spouse or holder had off-farm employment. This has increased from 49% in 2006 highlighting the growing importance of off-farm sources of income on the full-time farm sector.

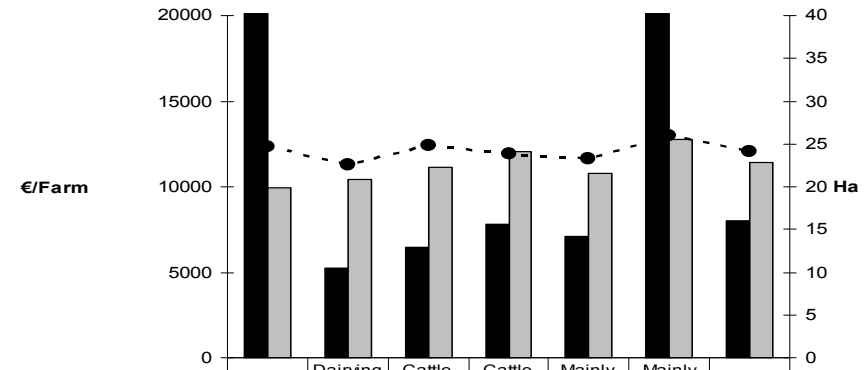
The total labour employed for all the full-time farms measured in actual labour units (on the basis of SMD) was 1.46, with 90% of this labour being family labour. The highest labour input was on the Dairying/Other system whilst the lowest was on the Cattle Rearing system, 1.55 and 1.27 respectively. The average farm size was 59.5 ha, ranging from 91.5 ha in the Tillage system to 46.2 ha in the Dairying system.

In 2007, 67.5% or 75,500 farms were part-time, with 88% in the drystock systems. The average FFI for all part-time farms was €7,993 (€7,899 in 2006) and this ranged from €21,380 on the Dairying System to €6,445 and €5,234 on the Cattle Rearing and Dairying/Other system respectively. The average cash income on part-time farms was €10,844 in 2007 compared to €11,214 in 2006. Average direct payments and subsidies were €11,417 in 2007, or 143% of FFI. This compares to 141% of FFI in 2006, reflecting the general situation on part-time drystock farms where output from the market place is insufficient to cover total production costs.

On 60% of these part-time farms, either the farmer or spouse had off farm employment (63% in 2006 and 58% in 2005). On 93% of farms there was another source of income – either from off farm job, pension or social assistance. The farmers on part-time farms were older (57 years) than those on full-time farms.

Details of FFI, direct payments and farm size for part-time farms are detailed graphically in Fig. 4.

Figure 4: FFI, Direct Payments on Part-Time farms by farming system - 2007



	Dairying	Dairying /Other	Cattle Rearing	Cattle Other	Mainly Sheep	Mainly Tillage	All
FFI	21380	5234	6445	7814	7109	20631	7993
Direct Payments	9923	10442	11120	12030	10810	12752	11417
Farm Size (Ha)	24.7	22.5	24.8	23.9	23.3	25.9	24.1

The total actual labour units for all the part-time farms was 0.88, with 99% of this labour being family labour. The highest labour input was on the Dairying/Other system while the lowest was on the Mainly Sheep system, 1.14 and 0.83 respectively. The average farm size was 24.1 ha, ranging from 25.9 ha in the Tillage system to 22.5 ha in the Dairying/Other system.

Income Distribution

The variation in incomes is further reflected in the income distribution shown in Table 4 for 2003 to 2007 and shows that percentages in each income category have remained almost static from 2003 to 2004 but changed considerably in 2005 due to the impact of direct payment carryover from the 2004 year. For the 2006 year the percentages in each category had reverted to their more traditional pattern while in 2007 there was an increase in the percentages in the over €40,000 income category from 12% to 16% with the lowest income grouping also increasing by 2%.

Table 4: Distribution of Family Farm Income 2003-2007 (%)

(€000)	< 6.5	6.5 – 13	13 – 20	20 – 25	25 – 40	> 40
			% Farms			
2003	39	22	14	6	10	9
2004	40	22	11	6	11	10
2005	24	24	15	7	12	18
2006	37	24	12	5	9	12
2007	39	19	11	5	9	16

Source: National Farm Survey 2007

- For 2007, the percentage of farms with under €6,500 income increased from 37% in 2006 to 39% in 2007. This is quite similar to figure of 40% for 2004 year, with the highest percentage of farms having income in the lowest income category.

- In the lowest income group, i.e. less than €6,500 per farm, 89% of farms were in the drystock systems. For this group, on 96% of farms, the farmer and/or spouse had other income from off-farm employment, pension or social assistance

- Also in the lowest income group, on 54% of farms the farmer held an off-farm job. The farmer and/or the spouse had an off-farm job on almost 60% of farms.

- 25% of farms had an income from farming greater than €25,000 in 2007 compared to 21% in the previous year. The average farm size for this group was 64.4 ha compared with the overall average size of 35.6

ha. The holder was younger than average at 51 years (overall average 56 years) and 79% were married compared with 67% in the overall farming population. The majority of farms in this group (58%) were in dairying systems.

Analysis of REPS Farms

REPS farms had an average FFI of €20,000 compared to €19,428 on Non-REPS in 2007. An estimated 45% of farms received REPS payments in 2007. As was the case in previous years, over 75% of farms which participate in REPS are in the three drystock systems, namely Cattle Rearing, Cattle Other and Mainly Sheep. 2007 saw a return to higher FFI on the Non-REPS Dairying system of €51,780 compared to FFI of €49,457 on the REPS dairying system. Income on Dairy and Other farms and Tillage farms was also higher on the non-REPS farms at €32,512 and €46,538 respectively compared to €28,232 and €34,359 per farm on the REPS farms. On REPS cattle farms (Cattle Rearing and Cattle Other) income was higher than on non-REPS farms with the REPS payment contributing up to 64% of the difference between FFI on REPS and Non-REPS farms in these systems. In 2007 income per farm for the Mainly Sheep system was higher on REPS farms than non-REPS farms, €15,153 as opposed to €4,721 on non-REPS. A more detailed analysis of 2007 REPS farm data will be compiled and published later in 2008.

The following tables present the key information in relation to farms participating in REPS (Table 5) and those not participating in REPS (Table 6).

Table 5: FFI, Direct Payments for REPS farms by farm system - 2007

	Dairying	Dairying/Other	Cattle Rearing	Cattle Other	Sheep	Tillage	All
	€/Farm						
FFI	49457	28323	12044	14011	15153	34359	19999
Direct Payments	23004	24399	18774	20340	20508	24692	20870
REPS Contribution	7368	7430	5959	5514	6637	6501	6270
Farm Size (Ha)	43.0	44.6	33.1	33.2	38.2	43.8	36.9

Table 6: FFI, Direct Payments for Non-REPS farms by farm system - 2007

	Dairying	Dairying/Other	Cattle Rearing	Cattle Other	Sheep	Tillage	All
	€/Farm						
FFI	51780	32512	4228	7690	4721	46538	19428
Direct Payments	17849	19785	7953	11057	8423	24766	12898
Farm Size (Ha)	45.9	49.8	23.6	27.3	27.9	65.4	34.5

[1]Regional Analysis

Farms in Region 2 (Dublin) have been excluded from this regional analysis owing to the small sample of farms for this region. There is quite an amount of variability between FFI, ranging from €11,463 in Region 1 (North-West) to €33,513 in Region 6 (Southeast). Only two of the regions (Region 1 and 8) have FFI below the national average of €19,687.

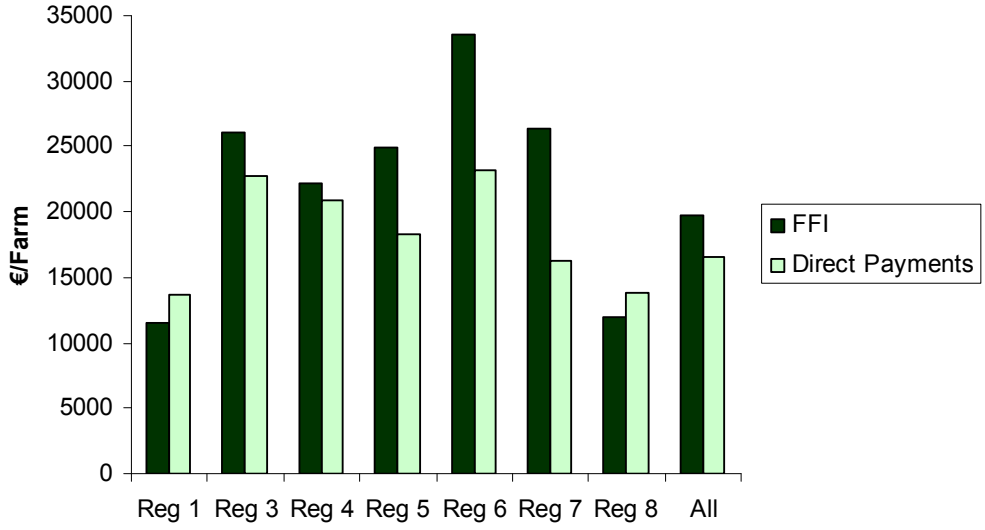
Analysing the demographic data by region produces some interesting details. The highest incidence of off-farm employment occurred on farms in the midlands region, Region 4 where the incidence of off-farm job for the farmer and/or the spouse was 66% compared to the national average of 58%. If we look specifically at the incidence of an off-farm job for the holder only, then Region 8 (Western) shows the highest level at 50% (compared to national average of 41%).

The average age of holder was highest in Region 1 at 58 years and youngest in Region 5 at 52 years. Eighty three per cent of households were classified as demographically viable in Region 6, while only 57% were classified as such in Region 1 (average for all farms was 69%).

1

Region 1 - Louth, Leitrim, Sligo, Cavan, Donegal, Monaghan
Region 3 - Kildare, Meath, Wicklow.
Region 4 - Laois, Longford, Offaly, Westmeath
Region 5 - Clare, Limerick, Tipp. N.R
Region 6 - Carlow, Kilkenny, Wexford, Tipp. S.R., Waterford.
Region 7 - Cork, Kerry
Region 8 - Galway, Mayo, Roscommon

Figure 5: FFI, Direct Payments/Subsidies by Region – 2007



The average farm size (UAA) for all farms was 35.6 ha. However within the regions the average farm size was higher in all regions except for Region 1 (North-West) and 8 (West), where it is only 30.5 ha and 27.4 ha respectively. Region 3 (East) has the highest average farm size, being 51.4 ha.

INVESTMENT IN AGRICULTURE 2008/09

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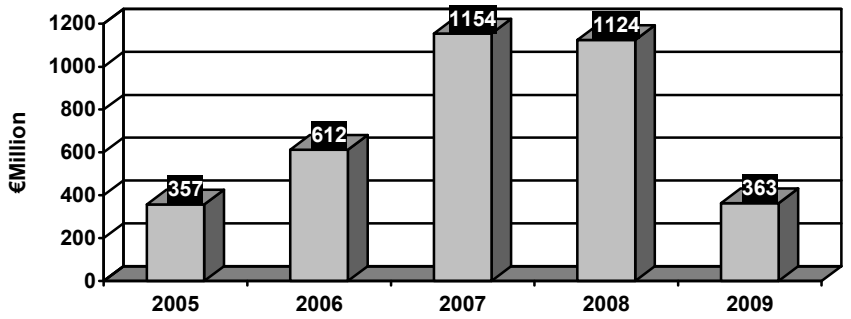
Teagasc carries out an annual survey each autumn to ascertain farmers planning intention for the coming year. The survey is conducted on farmers participating in the National Farm Survey by means of a single visit questionnaire. Farmers were asked for their plans for the 2009 year in relation to:

- Breeding stock numbers
- Arable crop planting
- Capital investment - actual investment in 2008
  - planned investment in 2009
- Attitude to policy changes

The following results are based on 850 questionnaires completed in the autumn of 2008. Data are weighted to represent 111,900 farmers nationally over the last 3 months.

Results are compared to investment plans at the same time last year i.e. **planned** investment for 2008 versus **planned** investment for 2009. In late 2008 over 17,700 farmers stated that they planned on investing an average of €20,480 per farm in 2009, giving a total investment of €363 m. This is in comparison to last years survey results showing 32,540 farmers planning an average investment of €34,500 per farm in 2008 giving a total planned investment of €1,124 m (Fig. 1).

Figure 1: Planned Farm Investment 2005 – 2009



Source: National Farm Survey

The results show that the decline of almost 70 percent in planned investment, from €1,124 M in 2008 to €363 m in 2009, has resulted in planned investment on farms returning to the 2005 level.

Type of Farm Investment
The breakdown of planned investment by category of investment is shown in Table 1 for 2009 and 2008.

Table 1: Farm investment planned for 2009 versus planned 2008 investment by investment type

	2009		2008		Change 2008/09	
	€m	%	€m	%	€m	%
Machinery	107	29	144	13	-37	-26
Buildings	155	43	912	81	-757	-83
Land	81	22	34	3	+47	+138
Milk quota	8	2	17	2	-9	-52
Other	12	3	17	2	-5	-30
Total	**363**	**100**	**1,124**	**100**	**-761**	**-68**

Source: National Farm Survey

Investment in farm buildings was responsible for the large and accelerated growth in on-farm investment from 1995 to 1998. The data in Table 1 show that the spectacular decline in total planned farm investment in 2009 was mainly due to a decline in farm building investment of €757 m. Planned investment in farm buildings in 2008 was €912 m or 81 percent of total investment, whilst in 2009 it was €155 m or 43 percent of the total. Planned investment in farm machinery accounted for a further 29 percent. Possible reasons for the increase in planned investment in farm buildings in 2007 and 2008 were the introduction of the Nitrates Directive, cross compliance, increased participation in REPS and the closure of the Farm Waste Management Scheme and the Farm Improvement Scheme. All the above have contributed to the increase in overall planned farm investment in 2007 and 2008, but the deadline for completing farm buildings for grant purposes closing at the end of December 2008, was a major factor in the decline in investment from 2008 to 2009.

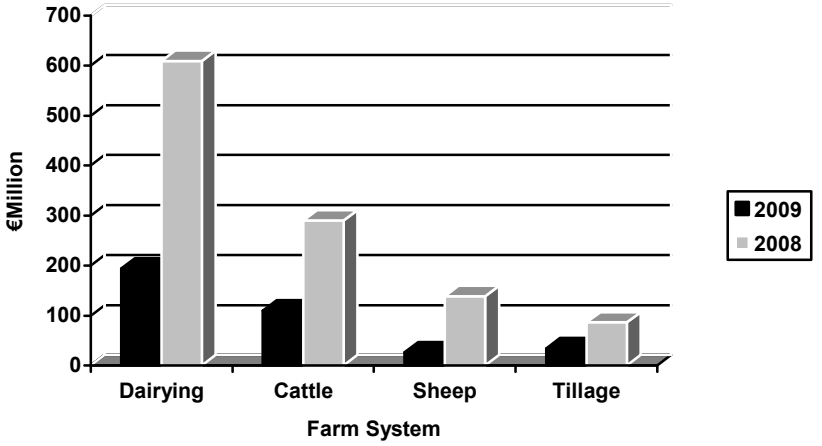
Farm Investment by Farm System
Dairy farmers accounted for the bulk of planned investment, 53 percent in 2009 and 54 percent in 2008, with the cattle systems accounting for 30 and 26 percent in 2009 and 2008 respectively (Table 2). Planned investment by system of farming is also illustrated in Figure 2, which shows a dramatic decline access all systems and clearly shows that the dairy system is responsible for the bulk of the decline.

Table 2: Planned farm investment by system of farming 2008 and 2009

	2009		2008	
	€m	%	€m	%
Dairying	194	53	609	54
Cattle	110	30	290	26
Sheep	26	7	139	12
Tillage	34	9	86	8
Total	**363**	**100**	**1,124**	**100**

Source: National Farm Survey

Figure 2: Planned Farm Investment by Farm System 2008 and 2009



Source: National Farm Survey

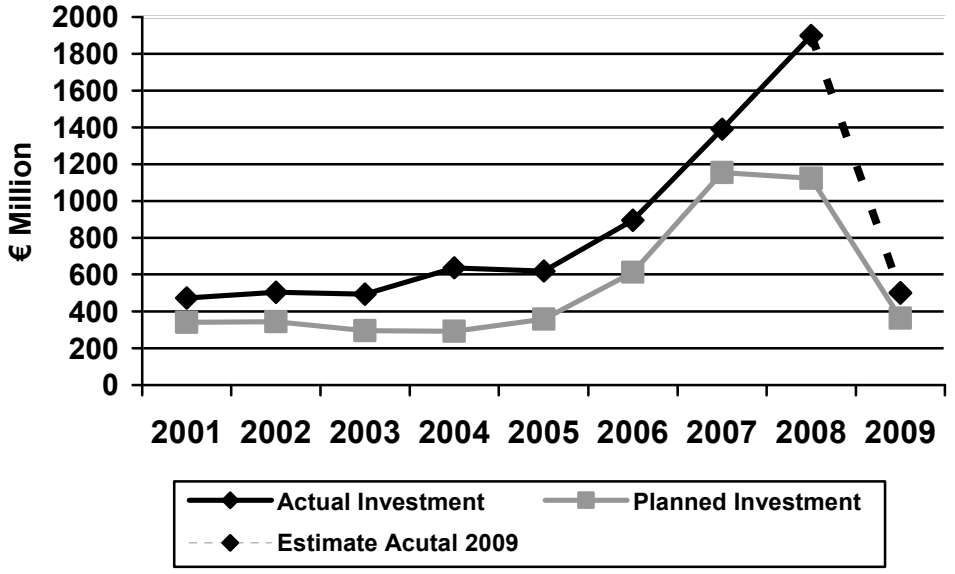
Actual Investment versus Planned Investment

The actual investment by farmers in 2008 was also determined in the autumn survey conducted on the NFS sample and was compared to their planned investment of the previous autumn. For many reasons actual farm investment seldom turns out as that planned and 2008 was no exception in that the actual investment by farmers in 2008 was much higher than that planned viz. 52,430 farmers actually invested a total of €1,900 m or €36,230 per farm, while planned investment for 2008 was €1,124 m. The actual gross on-farm investment of €1,900 million euros in 2008 was the largest ever recorded for the Irish agriculture sector and is equivalent to almost 100 percent of total national Family Farm Income. The large discrepancy between planned and actual was due to more farmers investing, and the average investment per farm was also higher at €36,230

compared to planned investment of €35,650 per farm, resulting in actual investment being over 70 percent higher than that planned.

In the past farmers have always understated planned investment in machinery and 2008 was no exception with an actual investment in machinery of €422 m compared to that planned of €144 m. For 2009, farmers plan to invest €107 m but again we anticipate increased machinery investment. Machinery investment on dairy farms include milking machines, water heaters, and milk cooling equipment etc. as well as tractors, jeeps and other non-power machines. The planned investment in farm buildings in 2008 was €912 m, whilst the actual investment was €1,276 m i.e. an increase of 40 percent, reflecting the necessity of completing by the December 2008 deadline to ensure receipt of investment grants. Also the increased financial returns to the main farm enterprises in the 2007 year could have contributed the increased investment activity in 2008. Actual investment in milk quota in 2008 was €21 m compared to that planned of €17 m. Actual farm investment is compared to planned investment from 2001 to 2009 in Figure 3.

Figure 3: Actual v Planned Farm Investment 2001-2009



Source: National Farm Survey

Farmers were also to identify the main source of funding the 2008 investment, excluding grants and VAT payments. The results show that 60 percent of net investment in 2008 was by farmers, whose main source of funding was borrowing, with the remaining 40 research of net investment on farms mainly funded from own savings and labour input.

In summary the survey shows that gross on-farm investment reached extremely high levels in 2006 and 2007 before peaking at €1.9 billion euros in 2008. However it is likely that investment levels will revert to more traditional levels of between €300 m and €400 m per annum from 2009 onwards.

Acknowledgements
The authors wish to thank the farmers participating in the National Farm Survey who co-operated in this study, Teagasc's farm recording staff who carried out the field work and all other Farm Survey staff involved in the survey.

Situation and Outlook for Dairying 2008/2009

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1. Introduction

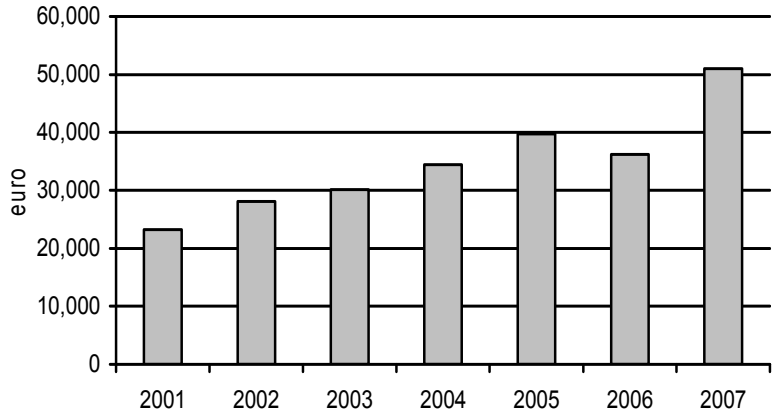
A declining milk price coupled with significant increases in fuel and fertiliser prices means that 2008 was a considerably tougher year for dairy farmers than 2007. While fuel and fertiliser prices are beginning to fall back closer to the average levels experienced in recent years, the outlook for dairy product markets is not positive over the short-term. This paper considers the situation on dairy farms in 2008 and the outlook for 2009.

Irish National Farm Survey (NFS) data (Connolly et al 2008) are used to conduct a review of the financial performance of dairy farms. The paper begins with a review of the dairy farm sector in 2007. Following this, the milk price and key input costs will be estimated for 2008 to produce an estimate of profit for the current year. In the concluding sections of the paper, the outlook for 2009 will be presented. Unless stated otherwise, all figures referred to are in nominal terms and all income and profit estimates exclude the value of decoupled compensation.

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

The year 2007 was an extraordinary one for the dairy sector both in Ireland and internationally. A number of factors, economic, policy and climate related, converged to produce price increases that surpassed expectations for the dairy sector. As result income on specialist dairy farms increased by 41 percent from 2006 to 2007 bringing the average income to €51,000 in 2007. Incomes on specialist dairy farms in recent years are illustrated in Figure 1.

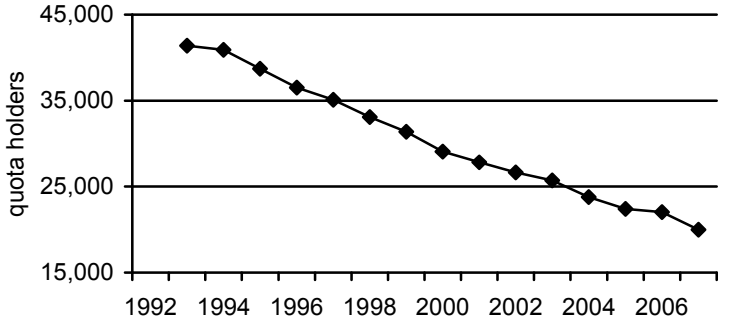
Figure 1: Income on Specialist Dairy Farms in Ireland: 2001 to 2007



Source: National Farm Survey (various years)

Despite the constraints of the milk quota system, declining dairy farm numbers have facilitated an increase in milk production per farm. According to Department of Agriculture Food and Fisheries (DAFF) figures (2007) there were approximately 20,000 active dairy producers in Ireland in 2007 compared to 28,000 in 2001 and 42,000 active suppliers 14 years earlier in 1993. Figure 2 presents DAFF data on dairy farm numbers.

Figure 2: Number of Active Milk Quota Holders in Ireland 1992 to 2007

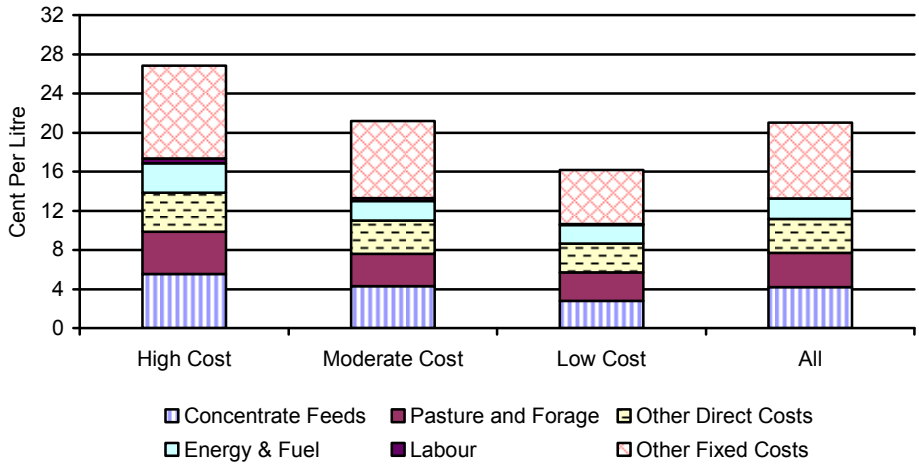


Source: Department of Agriculture (2007)

To place the economic performance of dairy farms in 2008 in context, we first review the financial performance of farms in 2007 using NFS data. Figure 3 disaggregates the total costs of production in 2007 for all creamery milk suppliers. To examine the variation in cost efficiency that exists in dairy

farming, the weighted sample of 19,716 creamery milk suppliers are classified into three groups. In 2007 the national average cost of production was approximately 21.5 cent per litre (CPL), which was about 12 percent higher than the 2006 level. 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 3. The average total cost of production on high cost farms in 2007 was 26.9 CPL, compared to 21 CPL on moderate cost farms and just 16 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 2007.

Figure 3: Variation in Total Costs of Milk Production across all Creamery Milk Producers in Ireland in 2007

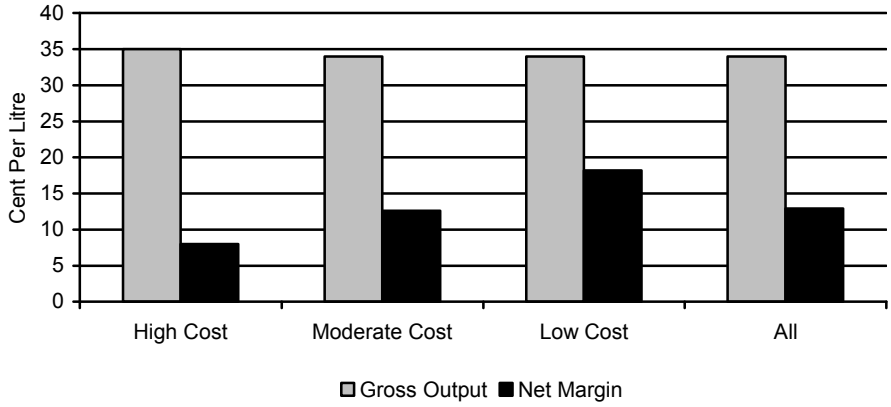


Source: National Farm Survey Data (2007)

Purchased *concentrate feeds* and *pasture and forage costs* represent between 33 and 35 percent of total costs of production on dairy farms, comprising a higher proportion on low cost farms. Purchased concentrate feed costs varied from 2.8 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 4.3 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 costs* (including depreciation and maintenance of machinery, buildings and land).

About 60 percent of the energy and fuel costs are car electricity and phone. In 2007 these averaged at 1.2 CPL while fuel costs averaged at just less than 0.7 CPL. The variation in these costs across farms is relatively low. Figure 4 presents gross output and net margin for these farm cost groupings.

Figure 4: Variation in Net Margin across all Creamery Milk Producers in Ireland in 2007



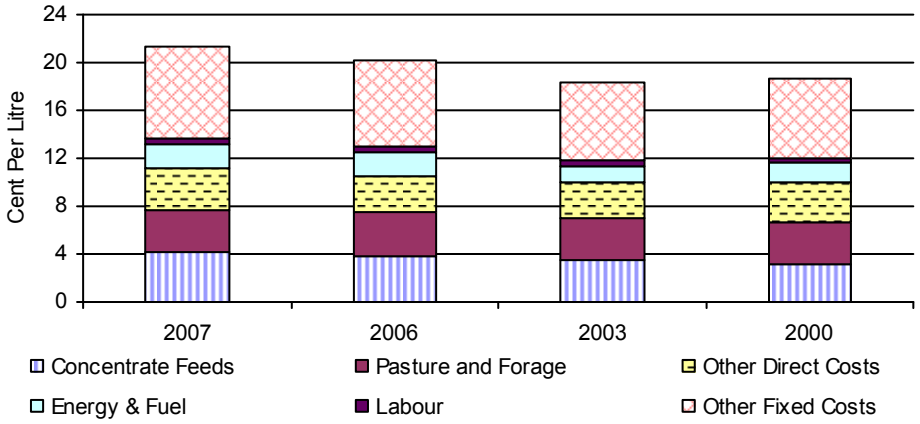
Source: National Farm Survey Data (2007)

Gross output includes the value of milk and calf sales less replacement costs. Calf sales are worth on average 3 cent per litre 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 is evident from Figure 4 the variation in gross output across farm groups is only marginal, with just a 3 percent difference between the cost groupings.

The variation in production costs has obvious implications for profit levels. The average net margin on low cost farms in 2007 was 18.2 CPL compared to the middle group of farmers at 12.6 CPL and the poorest performing farms at an average of just 8 CPL. This means that the difference in profit between the low and high cost groups for a typical 250,000 litre farm was €25,500 in 2007.

In terms of costs, it is interesting to establish whether 2007 was a typical year or a “high cost” year for dairy farmers. Figure 5 presents a review of costs of production in 2000, 2003, 2006 and 2007 for all creamery milk suppliers.

Figure 5: Variation in Total Costs of Milk Production across all Creamery Milk Producers in Ireland in 2000, 2003, 2006 and 2007

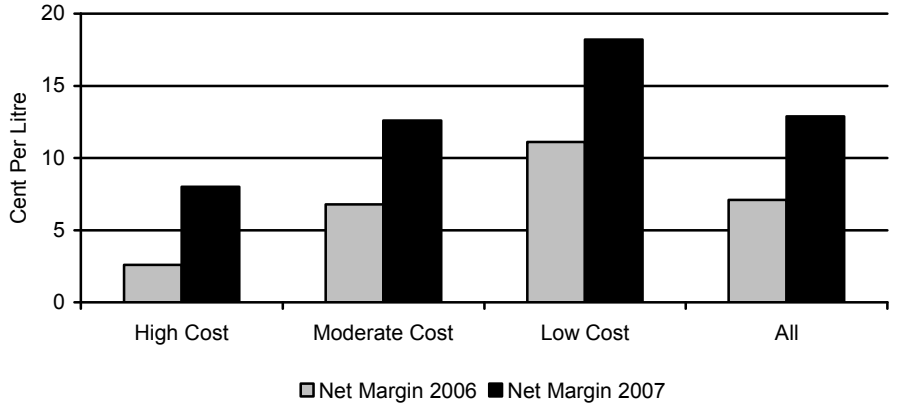


Source: National Farm Survey Data Various Years

The average total costs of production in 2007 were about 6 percent higher than the 2006 level. Although the volume of concentrates fed in 2007 was lower than 2006, the increase in dairy meal prices in 2007 meant that expenditure on concentrate feed was approximately 10 percent higher in 2007 relative to 2006. Pasture and forage costs remained more or less constant in 2007 but other direct costs increased by 9 percent. Labour and energy and fuel costs increased by about 8 percent each, while all other fixed costs increased by 6 percent relative to the 2006 level.

Figure 6 compares the net margin from milk production in 2006 and 2007. As can be seen the average net margin earned across all producers increased by over 80 percent, from 7 CPL in 2006 to almost 13 CPL in 2007. The increases are even more pronounced for the high cost farms. On high cost farms the net margin per litre increased three fold from 2006 to 2007, going from 2.6 CPL to 8CPL.

Figure 6: Variation in Net Margin of Milk Production across all Creamery Milk Producers in Ireland in 2006 and 2007



Source: National Farm Survey Data (2006 and 2007)

Table 1 provides a breakdown of some basic characteristics of dairy farms in 2007, stratified by soil type. The bottom line in the table presents the difference in margins per hectare across the three soil categories. It is notable that the margins achieved on the *widest use range soils* are over 75 percent higher than the margins achieved on the *limited use range soils*. The data in the table also indicates that unless you are operating on *wide use range soils*, you will either compromise on output volume or production costs.

Those on wide use soils produce almost as much milk per kg of concentrates fed as those on the widest use range soils, but the level of concentrates fed by those on wide use soils is considerably higher than in the case of the widest use soils. This contributes to the higher production cost on farms with wide use soils relative to farms with widest use soils.

Those on limited use range soils feed a level of concentrates per cow which is similar to those on widest use soils, and despite their lower stocking rate the yields achieved by farms on limited use range soils are quite low, obtaining just 5.7 litres of milk per kg of concentrates fed. In the case of those on limited use range soils, it is the low level of output produced rather than the size of the feed bill which erodes margins.

Table 1: Summary Statistics by Soil Groups for All Creamery Milk Suppliers in Ireland in 2007

N=344	Widest use Soils	Wide use Soil	Limited use Soil	All Soils
Percentage of Farms	48	45	7	100
Percentage of Production	50	46	4	100
Production Costs (CPL)	20.4	22.5	23.6	21.5
Concentrates per Cow (kg)	826	1030	800	920
Milk per kg of concentrates (Litres)	7	6.8	5.7	6.9
Stocking Rate (Lu/Ha)	2	1.9	1.6	1.9
Production (Litres/Ha)	9,400	8,600	6,400	8,850
Net Margin (€/ha)	1,365	1,153	775	1,229

Source: National Farm Survey Data 2007

3. Estimated Review of 2008 Performance

This section of the paper presents a review of the dairy farm sector in 2008. To provide an estimate of farm 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 as the volume and value of outputs. The ensuing sections of the paper first discuss the movements in input prices and usage in the current year and following that the development on dairy product markets is detailed.

3.1 Estimated Input Usage and Price 2007

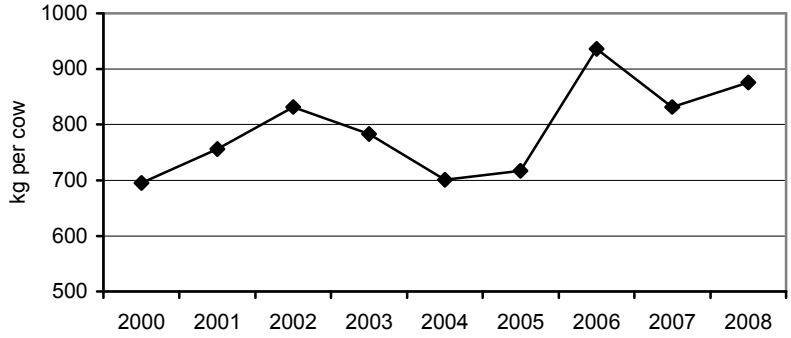
3.1.1 Feedstuffs

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 concentrate feed per cow. This is derived by the authors from Department of Agriculture (DAFF) figures on feed sales and from Central Statistic Office (CSO) data on animal numbers.

As is evident from the graph, there is appreciable variability in the amount of feed used year on year. The variability in purchased feed illustrated in Figure 7, is largely weather related, and this variability is supported by the farm-level data from the NFS. The amount of concentrates fed per cow nationally increased significantly in 2006, approximately 15 percent higher than the 2005 levels. The quantity fed in 2007 only declined marginally following a very wet summer.

It is expected that the quantities of purchased feed in 2008 will be slightly higher than the 2007 level. Data for the first 6 months of 2008 provided by DAFF indicates that aggregate dairy feed purchases were up about 6 percent on the 2007 level. Poor weather conditions in the third quarter of 2008 may have pushed usage levels above the average of recent years. To some degree, the increased level of feed usage in the first half of 2008 may reflect a willingness by dairy farmers to ensure that milk was produced while milk prices were high.

Figure 7: Concentrate Feed Purchases per dairy cow in Ireland: National Average for 2000 to 2008*

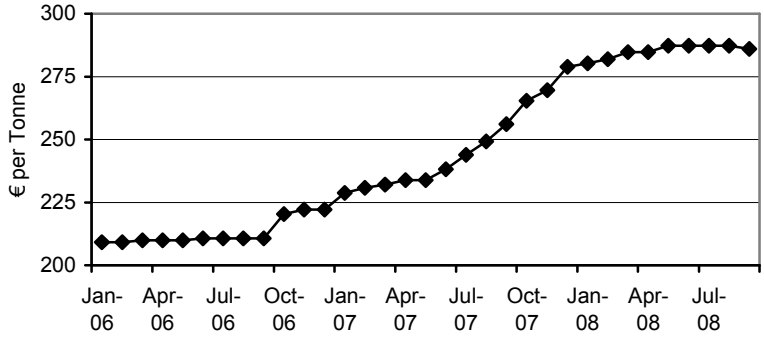


Source: Authors' estimates derived from DAFF and CSO data

** 2008 figure estimated by authors*

Relative to recent years, concentrate feed prices increased considerably in 2007 and again in 2008. The full extent of the rise in prices has been felt particularly in 2008 since prices were already at an elevated level in January 2008, whereas prices rose gradually through 2007 which meant that the annual price for 2007 was well below the price at the end of 2007. Figure 8 presents monthly prices for dairy meal from January 2006 to September 2008 (the most recent data available) compiled by the CSO. As can be seen for the period illustrated, prices for dairy meal were relatively static up to October 2006 but began to rise towards the end of 2006 and continued to increase through 2007 and 2008.

Figure 8: Monthly Price Index of Dairy Meal (16-18% Protein) in Ireland for 2006 and 2007



Source: Central Statistics Office Data for 2000 to 2006.

Internationally, increased planting rates, improved harvests and pressure from the financial markets have dampened cereal prices and this should provide the circumstances for a decline in cereal prices globally from the extremes observed in 2007 and early 2008. However, the high level of cereal prices in 2007 effectively locked in the high feed prices observed through much of 2008 in Ireland. There has been a very pronounced drop in cereal prices in Ireland in 2008 but this will take time to work itself through to the feed market and it can be expected that the feed bill for 2008 will be at record levels.

As can be seen from Figure 8, feed prices increased steadily from €210 per tonne in September of 2006 to €290 per tonne in August of 2008. The average price in 2007 was €246 per tonne. Based on the data available to date and consultations with industry representatives, farm advisors and farmers, the annual average price for 2008 is estimated to be about €285, an approximate 15 percent price increase.

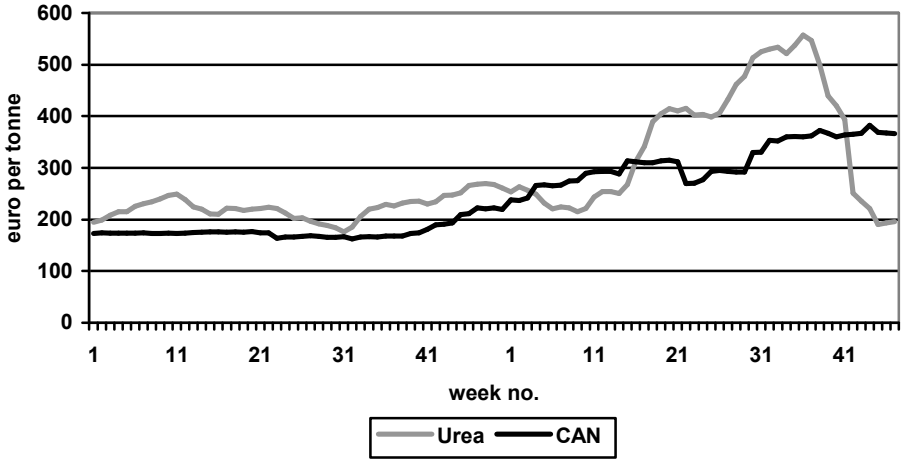
The 15 percent increase in feed prices in 2008, combined with the 6 percent increase in dairy feed volume, suggest that total expenditure on dairy feed in 2008 will be up 22 percent on the 2007 level.

3.1.2 Fertiliser – usage and price 2008

Pasture and forage costs typically comprise about 18 percent of total production costs on dairy farms. Fertiliser purchases comprise about half of the pasture and forage input costs. The other half is comprised mostly of contractor costs. Strong fertiliser demand, increased energy prices, in

particular the price of natural gas, which is a key determinant of the nitrogen price, have been the major driving forces behind the upward trend for fertiliser prices. Changes in the fertiliser export tax in China have also been a factor, since it has reduced the amount of fertiliser available on international markets. Figure 9 charts weekly fertiliser prices over the course of 2007 and 2008.

Figure 9: Weekly fertiliser manufacturer prices for 2007 and 2008



Source: Yara

Fertiliser prices tracked upwards month by month for much of 2008 but there has been a sharp decrease in the manufacturers' price of urea since the beginning of October 2008 and this is now beginning to feed through to the price paid by farmers. To date at least, CAN prices have remained strong and have not followed urea prices downward in the 4th quarter of 2008.

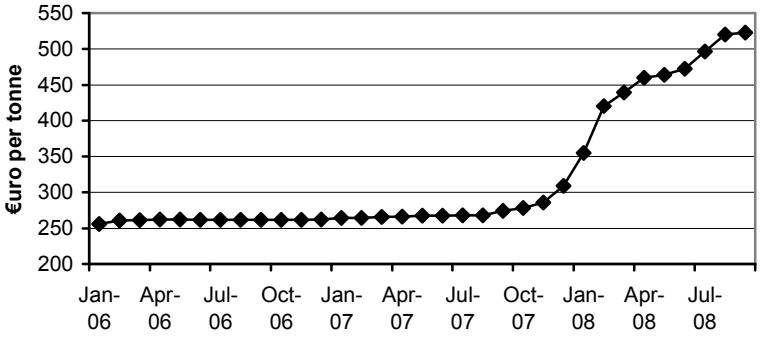
Overall for 2008 urea prices will be up about 40 percent on the 2007 level, while the increase in CAN prices in 2008 relative to 2007 is estimated at 60 percent. The reason for the sharper increase in CAN prices in 2008 compared with urea is that CAN prices were slower to move upward in 2007, whereas urea prices had already strengthened in 2007.

Urea demand from Brazil, India and Thailand has been stronger in 2008 than in previous years, while Chinese net exports of Urea have stagnated as the year progressed. China now has announced a cut in the export tax of a number of fertiliser products including nitrate fertiliser and phosphate fertiliser. The new tax rates will be effective from December 1 to the end of

2009. This is the fifth time in 2008 that China has adjusted the export tax for fertilizer products to encourage exports.

Figure 10 charts the monthly index of fertiliser prices in Ireland for the period 2006 to 2008. Fertiliser prices have increased substantially since October 2007. The CSO recorded price in September 2008 was 75 percent higher than the July 2007 price. The increase in nitrogen based fertilisers has not has been as pronounced as the increase in the case of potassium and phosphate. Early estimates from the 2008 NFS results suggest that the average price paid by farmers in 2008 was 55 percent higher than the average 2007 price.

Figure 10: Monthly Price Index of fertiliser (average of all compounds) in Ireland for 2006 to 2008



Source: Central Statistics Office Data

On the usage side, DAFF figures indicate that fertiliser purchases in the 2008 fertiliser year (October 2007/September 2008) have declined for nitrogen, potassium and phosphate relative to the corresponding 2007 levels.

However, the extent of the decrease in potassium and phosphate sales in 2008, which have each dropped by 18 percent on the 2007 level, is more pronounced than in the case of nitrogen, where the decrease is just 5 percent. However the sales figures relate to sales by fertiliser compounders. By contrast merchants report that they have significant stocks of unsold fertiliser, indicating that higher prices, and weather conditions unfavourable to fertiliser application, have led to a cut in the volume of fertiliser purchases by farmers in 2008. Thus the reduction in

actual usage levels, particularly in the case of nitrogen may be somewhat greater than the official figures indicate. Particularly in drystock areas, the anecdotal evidence is that fertiliser application may be down by as much as 15 percent in 2008. The decline in usage levels in dairying regions may have been smaller, due to the relatively high milk prices in the first half of the year.

The extent of the reported drop in potassium and phosphate sales may also reflect some substitution away from potassium and phosphate based compounds, towards nitrogen based compounds.

Early estimates from the 2008 NFS results suggest that the volume of fertiliser used on specialist dairy farms has declined by approximately 12 percent on the 2007 level.

The reduction in fertiliser usage will only partially offset the steep rise in fertiliser prices in 2008. A 12 percent decrease in use with a 55 percent increase in price leaves overall expenditure on fertiliser up 36 percent.

3.1.3 Contractor Costs

Fertiliser costs comprise about 50 percent to the total pasture and forage costs, with the remaining half made up of contractor costs. Due to increases in fuel and plastics costs it is estimated that silage cutting costs are up by about 20 percent in 2008 on the 2007 level, rising from €100 to €120 per hectare.

3.1.4 Pasture and Forage Costs

With fertiliser costs increasing by 36 percent and contracting costs increasing by 20 percent, the overall estimated increase in pasture and forage costs for 2008 is up 28 percent.

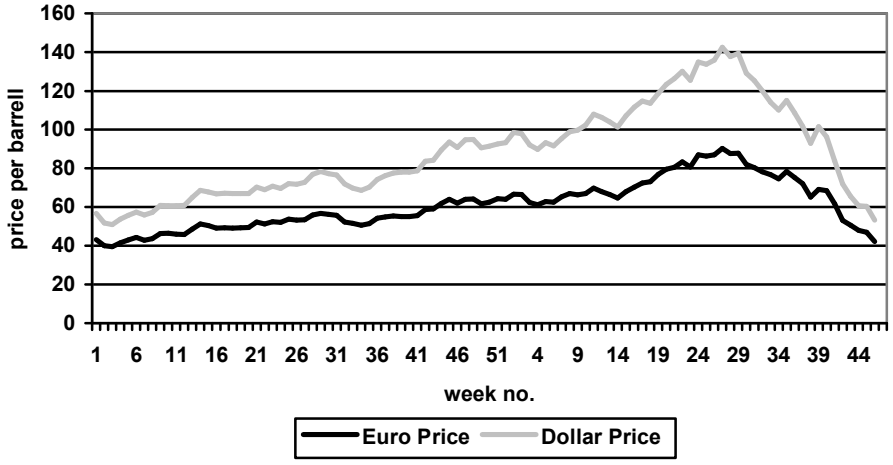
3.1.5 Energy and Fuel – usage and price 2008

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 fuel and energy on dairy farms with fuel accounting for the remaining 70 percent.

Crude oil prices are presented in Figure 11. Prices have risen from $72 per barrel (pb) on average in 2007, to a level over $106 pb on average in 2008, an increase of 46 percent. However, the eurozone has been partially insulated from this rise in prices by the strength in the value of the euro relative to the US dollar over the same period. The average crude oil price

for 2008 is likely to be €70 pb, about 33 percent up on the average 2007 level of € 52 pb. Nevertheless, fuel costs in Ireland have risen significantly in 2008, rising by about 25 percent according to CSO estimates.

Figure 11: Weekly crude oil prices in Euro and US dollar in 2007 and 2008



Source: St Louis Fed

Electricity costs change infrequently in Ireland due to price regulation. CSO data indicates that electricity price rose 17.5 percent in the month of August 2008. However, electricity prices were higher in the first half of 2007 than in the first half of 2008 and as a result the average annual electricity price for 2008 is likely to be unchanged from the 2007 level.

Demand for fuel and electricity from farms tends to be relatively inelastic with respect to price. Therefore it is assumed that usage in 2008 will be on a par with the 2007 level. Thus, in the absence of a price change, overall expenditure on electricity in 2008 is anticipated to have been unchanged on the 2007 level, while expenditure on fuel in 2008 is likely to have increased by 20 percent on the 2007 level. Overall expenditure on energy and fuel on dairy farms is up 13 percent in 2008.

3.1.6 All Other Direct and Fixed Costs– usage and price 2008

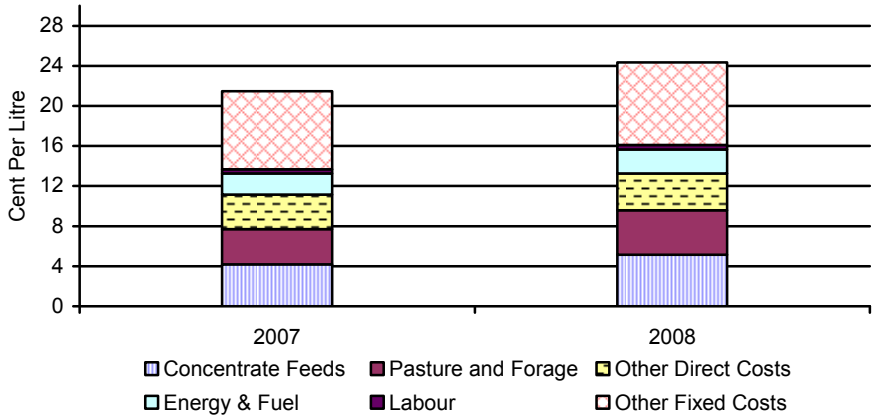
CSO estimates indicate that labour costs have risen in 2008 by about 6 percent relative to 2007. Again, it is assumed that the quantity of labour used on farms is relatively price inelastic and is likely to change little year on year. The cost of other input items is up about 6 percent in 2008 on the

preceding year. It is assumed that usage of these input items will be in line with 2007 levels and as a result the increase in prices in 2008 is reflected in a corresponding increase in expenditure on these items.

3.1.7 Estimate of Total Input expenditure for 2008

Figure 12 charts the average total costs of production for all creamery milk suppliers in 2007 and the corresponding estimates for 2008. It is estimated that total costs of production for the average creamery milk supplier in Ireland will be 13 percent higher in 2008 than 2007.

Figure 12: Total Costs of Milk Production across all Creamery Milk Producers in Ireland 2007 and Estimated for 2008



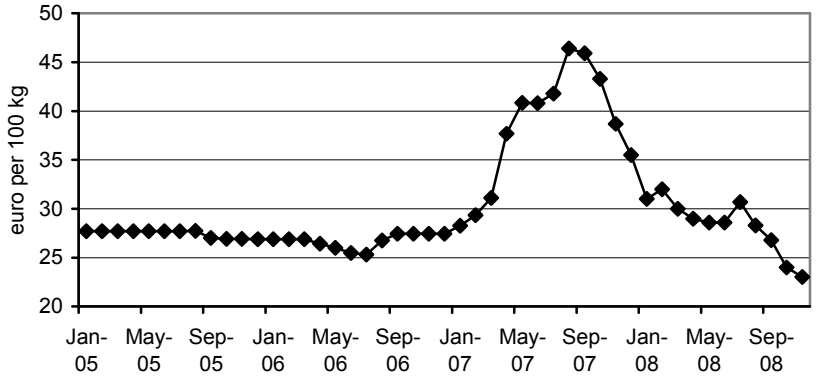
Source: National Farm Survey Data (2007) and Authors' Estimates (2008)

3.2 Estimated Output Values 2008

In Ireland the 2008 manufacturing milk price will be not be very different from 2007. Monthly milk prices have dropped sharply in the last couple of months of 2008, but all the pressure put on processors to hold price in the peak months will have paid off for Irish dairy farmers in 2008 at least, but it also merely delays the reduction in price and accelerates the rate of decline. Processors have paid farmers milk prices that are more than the market place was returning from commodity prices this year. At the moment the signs are that production will probably run below the 2% quota increase in 2008, due to poor weather and high feed prices.

Figure 13 shows the butter and skimmed milk powder equivalent milk price as estimated by the Irish Dairy Board (IDB) from January 2005 to November 2008.

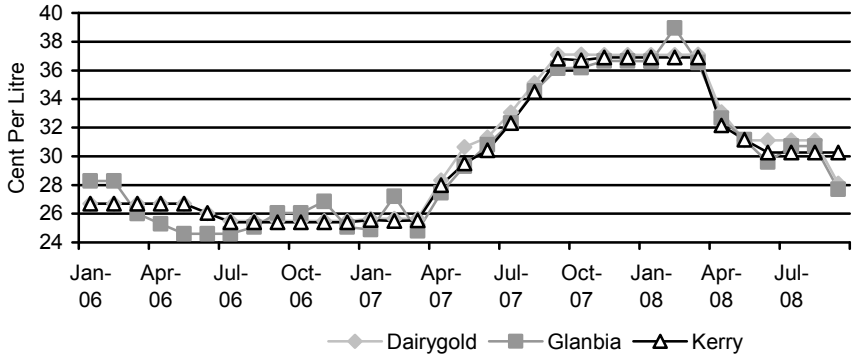
Figure 13: Irish Dairy Board Butter/SMP Equivalent Price from 2005 to 2008



Source: Irish Dairy Board

The weakening of international dairy commodity markets in 2008 was not reflected in the farm level milk price in Ireland. Figure 14 presents prices paid by the three largest dairy co-operatives (Glanbia, Kerry and Dairygold) .in 2006, 2007 and up to September 2008 These three co-operatives account for approximately two-thirds of the national milk pool and therefore provide a representative view of the milk price paid to the majority of farmers. The prices portrayed are exclusive of VAT and collection charges and are for standard 3.6 percent butterfat and 3.3 percent protein levels.

Figure 14: Farm Gate Milk Prices* from 2006 to 2008

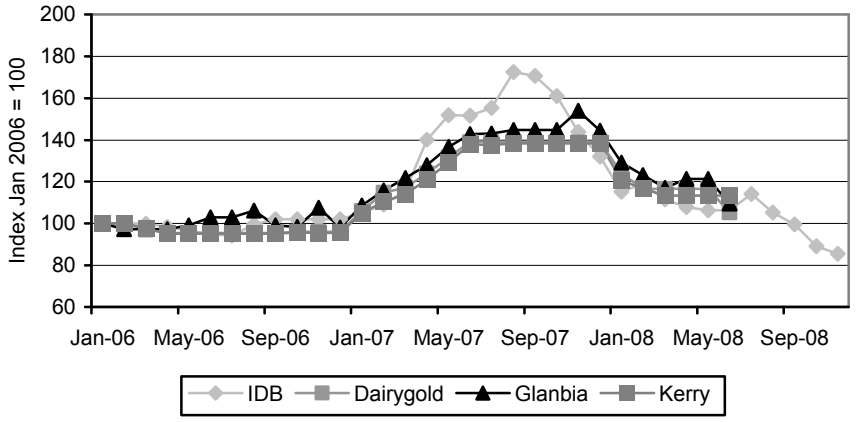


Source: Irish Farmers' Journal Milk League
Price excludes VAT and is for milk collected from farm 3.6% butterfat and 3.3% protein – excluding collection charges and bonuses

There will have been some regional variation in the evolution of milk price in 2008. Intervention commodity processors (with no cheese or higher value products in their portfolio) performed well in 2007 and early 2008, but they were worst affected in the latter half of 2008. Equally, processors with a higher exposure to the cheese market did not do as well over the period of the dairy commodity price boom, but their milk prices has been affected less in recent months by the evaporation of demand for basic commodities. This could mean that the annual 2008 milk price is down in some processor regions in 2008 versus 2007, but little changed in other regions.

Figure 15 charts the IDB price and the milk price paid by a number of processors. Note how the IDB price which is based exclusively on Butter and SMP, out performed the processor milk prices, which have a wider product base. Figure 15 illustrates that the price boom in 2007/2008 was at its more acute in the case of basic commodities and the extent of the increase in higher value added products was less pronounced.

Figure 15: Indices of Irish Dairy Board Butter/SMP Equivalent price from 2006 to 2008 and milk prices paid by selected processors



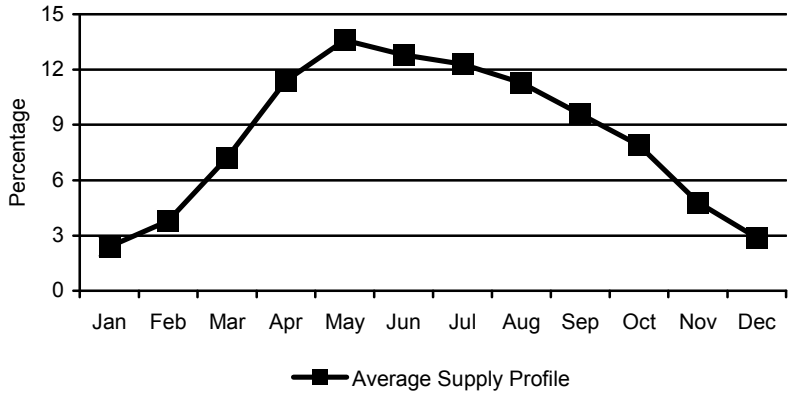
Source IDB and Farmers Journal

The price increases in the latter half of 2007 are evident from Figures 14 and 15. Prices increased from approximately 25 CPL in March 2007 to between 38 and 39 CPL in September 2007. Prices remained relatively high for the first few months of 2008 but began to decrease from April onwards. To arrive at an estimate of the average annual milk price, it is necessary to consider both the monthly milk price and the quantity of milk delivered in each month.

Figure 16 presents the average supply profile for the sector for the years 2005, 2006 and 2007. The supply profile does not change considerably from year to year, nor does the total quantity delivered due to the milk quota constraint.

Typically two-thirds of the national milk supply is delivered during the period between April and August meaning that the prices that are paid in these months are the most important for determining the annual average milk price.

Figure 16: Average Monthly Milk Deliveries in Ireland for 2005, 2006 and 2007



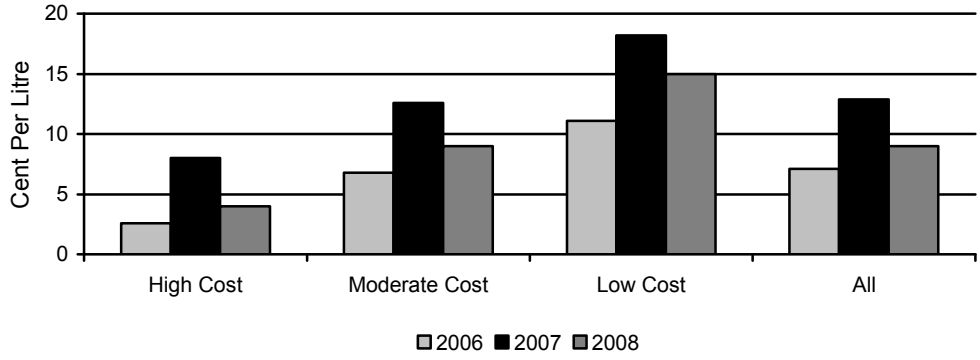
Source: CSO Data Various Years

Based on a weighted average of the three Co-operative milk prices and the annual supply profile, it is estimated that the average annual price for 2007 was 31.75 CPL. Assuming the price paid in September continues to year end, the average milk price for 2008 is estimated to be 31.2 CPL. Although prices fell considerably towards the end of 2008, the annual average price is similar to 2007 as lower prices prevailed in the early months of 2007.

3.3 Review of Dairy Enterprise Net Margins in 2008

The review of milk prices showed that the average milk price for 2008 was little changed on the average for 2007, while the review of input costs concluded that total production costs would be 13 percent higher in 2008 than in 2007. Figure 17 presents dairy enterprise net margin for 2006 and 2007 and an estimate for 2008, with the average net margin for all creamery milk suppliers as well the sample disaggregated into one-third groupings based on cost efficiency.

Figure 17: Net Margin for Creamery Milk Producers in Ireland in 2006, 2007 and Estimated for 2008



Source: National Farm Survey Data (2007) and Authors' Estimates (2008)

Gross output values are more or less unchanged from 2007 to 2008 and the major change between the two years is input cost inflation. It is estimated that average net margin per litre will decrease from 13 CPL in 2007 to 9 CPL in 2008, indicating a 28 percent decrease. Input cost inflation is likely to bring net margin closer to 2006 levels, especially for high cost farms where the 2008 net margin is estimated to be only 50 percent of the 2007 level.

Table 2 disaggregates profitability on a per hectare basis for 2007 and provides estimates for 2008. The average net margin per hectare across all creamery milk suppliers in 2007 was €1,229 and this is estimated to decrease to €895 in 2008. Table 2 disaggregates the groups into one-thirds based the net margin per hectare.

Table 2: Profitability per Hectare on Creamery Milk Suppliers 2007and Estimated for 2008

N=344	High Cost	Moderate Cost	Low Cost	All
Herd Size	44	48	48	47
Stocking Rate LU/Ha	1.8	1.95	1.9	1.9
Gross Output €/Ha	2,924	3,346	3,356	3,209
Gross Margin €/Ha 2007	1,765	2,270	2,498	2,177
Net Margin per Hectare 2007	**649**	**1,276**	**1,762**	**1,229**
Net Margin per Hectare 2008	**301**	**930**	**1489**	**895**

Source: National Farm Survey Data (2007) and Authors' Estimates (2008)

4. Outlook for 2009

In this section we estimate the expenditure for various input items in 2009, the milk price that will prevail and the likely profit margins on dairy farms in 2009.

4.1. The Outlook for Input Expenditure

4.1.1 Feedstuffs

Feed usage has been high in each of the last four years compared with the earlier years of the decade. Weather conditions have a strong impact on feed usage and it is not possible to predict whether 2009 will provide weather that allows for reduced volumes of feed usage. If we assume feed volumes revert to the average of the last five years then feed use in 2009 would be 812kg per cow, this representing a 7 percent decrease on the volumes used in 2008.

The 2008 harvest prices for feed wheat and barley are 30 percent down on the 2007 harvest prices. Farmers purchasing feed in 2009 can expect to benefit from the fall in 2008 harvest prices. Just how much of that price decrease is going to be passed on to the farmers is not clear, but should at least be of the order of a 15 to 20 percent decrease on the 2008 level.

A 20 percent decrease in feed price, coupled with a 7 percent decrease in volume, would leave feed expenditure in 2009, 25 percent below the 2008 levels.

4.1.2 Fertiliser

The November 2008 manufacturers' prices of urea are now back down to the level which prevailed early in 2007 and if this price was to be maintained through 2009 then urea prices could be down by about 40 percent on the 2008 level. This would put urea prices back to 2007 average levels.

Falling energy prices, falling commodity prices and credit problems for farmers, all suggest that there will be reduced growth in fertiliser demand internationally in 2009. All of these factors should push fertiliser prices downward.

It would seem that downward adjustment in the CAN price can also be expected or, at the very least, that farmers will attempt to reduce their fertiliser bill by switching away from CAN use towards greater usage of urea. In the case of phosphorus and potassium demand is set to remain strong and this does not create an environment in which prices are likely to fall.

With price down 20 percent and usage up 10 percent, this would leave total expenditure on fertiliser down 12 percent in 2009. Factoring in a 10 percent reduction in contractor charges in 2009, would mean that total expenditure on pasture and forage would be down 11 percent in 2009 on the 2008 level.

4.1.3 Energy and Fuel

Electricity prices are regulated in Ireland and movements in price are discrete and tend to lag changes in price that occur on international energy markets. The electricity price in the first half of 2008 was down on the latter half of 2007, but prices rose again in the later half of 2008. At the time of writing, the ESB has made a request to the regulator for another price increase, but in a period of falling crude oil and natural gas prices, this request may not be accepted. Despite the recent decline in energy prices, a decrease in electricity prices is unlikely in the short term. If a substantial reduction in electricity prices emerges in 2009, then this would allow the possibility that the annual price in 2009 would be down on the 2008 level.

As of November 2008, the crude oil futures price on average for 2009 is about $55 pb, which is about €44 pb at current exchange rates. If the average crude oil price in 2009 is in the range of $50 to $60 then this would represent a decrease in the range of 30 to 40 percent on the 2008 level, if exchange rates remain unchanged.

Overall, a 15 percent reduction in fuel expenditure in 2009 relative to the 2008 average seems feasible, while a conservative projection would be that electricity prices remain unchanged. This leaves overall expenditure on energy and fuel down 10 percent in 2009 relative to the 2008 level.

4.1.4 Other Direct and Fixed Costs

A downturn in the macro economy is likely to lead to slower increases in labour costs and general inflation in 2009. Wage inflation is projected to be about 2 percent in 2009. The price of other direct inputs is projected to increase in line with general inflation which is likely to be about 2 percent.

4.2. The Outlook for Dairy Markets

The Irish milk price in 2009 is likely to be considerably lower than the average 2008 price. As is usual, the reasons for this are tied to events on international markets.

Dairy commodity prices have been dropping significantly since the financial crisis has taken hold. Demand for US treasury bills, boosted the value of the US dollar and other things being equal this would have made dairy products purchased on the international market more expensive in non US dollar economies. In turn this has had a depressing effect on world dairy prices in US dollar terms.

The high dairy product prices of 2007 and early 2008 has boosted global export capacity through both production growth and increased exports to the world market by the US in particular. In recent months international buyers began to hold off on purchases in the expectation that prices would decrease. Their actions were self-fulfilling and prices have dropped steeply in the latter half of 2008.

While wholesale prices have begun to decrease, retail prices are sticky and have remained firm so far in many markets so this will choke off demand further over the short term, until retail prices adjust downward.

Overall, the short term outlook will be characterised by a decrease in global production growth but the decrease will be more than matched by a reduction in consumption growth, which will keep prices depressed over the short term.

In the EU, intervention will not be available until March, so milk prices are unlikely to pick up before then. While feed prices are now falling they remain high internationally by historical standards. So as milk prices fall

back, the cost of feed could choke off the growth in supplies internationally, particularly in the US, where the recent rise in the dollar will also make US dairy exports less competitive.

On the other hand, the global economic downturn now seems more likely to impact on the emerging markets (important for dairy demand growth) than was originally thought, so this may mean that dairy consumption growth is also depressed. If the global financial crisis does not worsen then some upward price movement could take place before the end of the 2009. However, the immediate prospects are for low prices in the peak delivery months of 2009, which is in direct contrast to what was experienced in 2007 and 2008. Overall, it is difficult to see positive prospect for dairy prices in 2009 and it is estimated that milk prices will be down about 15 to 20 percent in 2009 on the 2008 level.

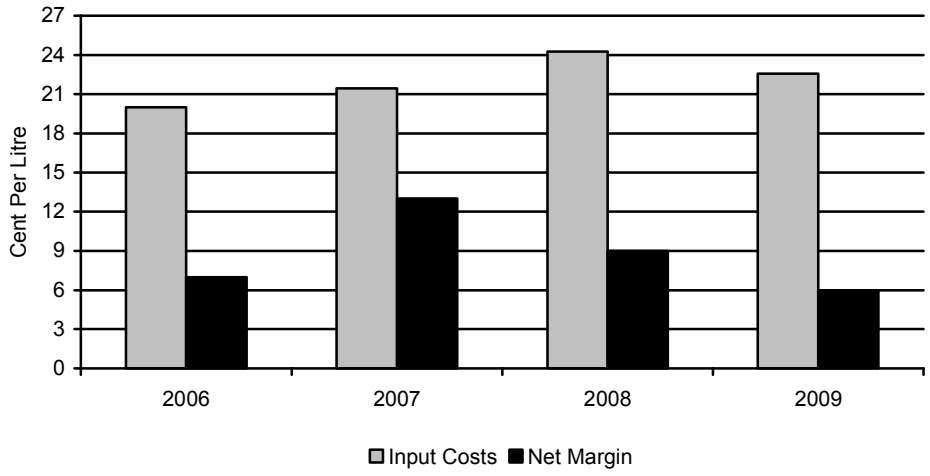
Overall, it is difficult to see positive prospect for dairy prices in 2009 and it is estimated that milk prices will be down about 15 to 20 percent in 2009 on the 2008 level.

Looking a little further ahead, the outlook is more positive. New Zealand will eventually run out of suitable dairying land and this will constrain its production growth unless New Zealand farmers begin to change their production system by increasing supplementary feeding. Growth in dairy exports from Brazil will be limited by supply chain problems. The recovery in production in Australia will continue, but growth over the longer term will be challenged by the affordability of irrigation. Argentina has good growth potential but this will continue to be challenged by government policy uncertainty with regard to export taxes and access to export markets.

4.3. The Outlook for Dairy Enterprise Net Margin in 2009

Although input prices are expected to decline slightly in 2009, the downward pressure on milk price leaves the average net margin considerably below that experienced in 2007 and 2008 and slightly below the 2006 level as illustrated in Figure 18.

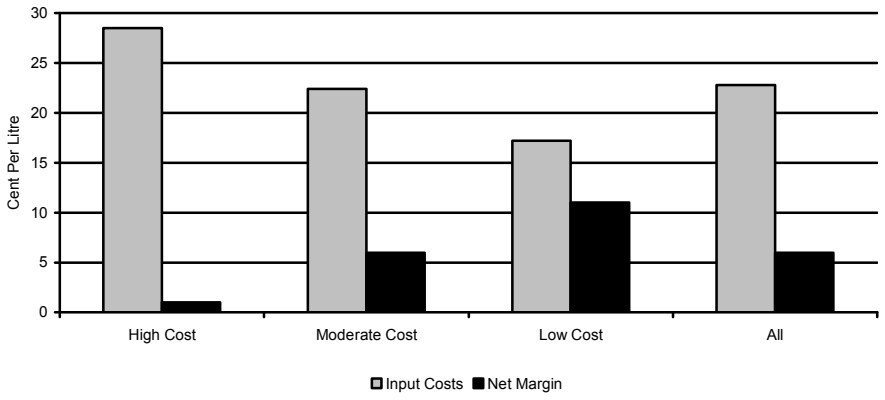
Figure 18 Net Margin for Creamery Milk Producers in Ireland in 2007, Estimated for 2008 and Forecast for 2009



Source: National Farm Survey Data (2007) and Authors' Estimates (2008 and 2009)

The average net margin for 2009 is estimated to be 6 CPL. This represents a 33 percent cut on the 2008 level and an almost 50 percent cut on the 2007 level. Figure 19 presents the input cost and net margin estimates for the three cost groupings.

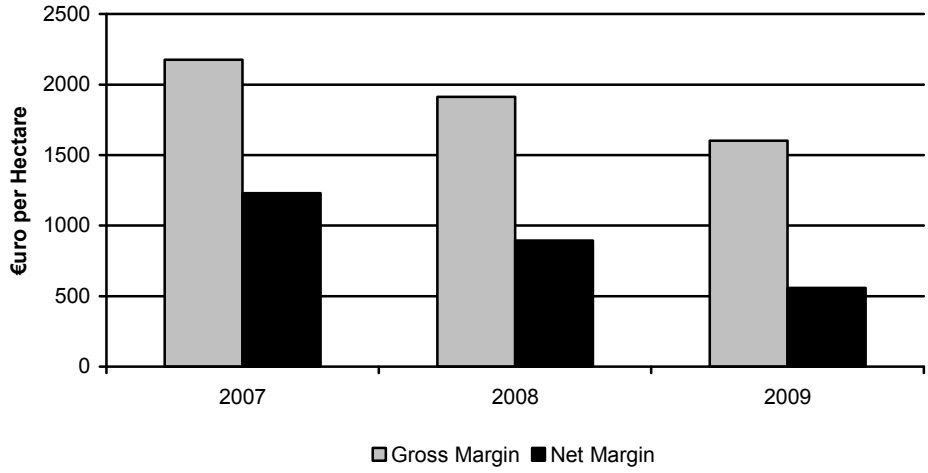
Figure 19: Net Margin for Creamery Milk Producers in Ireland Forecast for 2009



Source: Authors' Estimates

The analysis assumes that the projected changes to input and output prices affect all producers equally. This assessment is somewhat simplistic, as historical data has shown that low cost farmers tend to manage input cost inflation and price cost squeezes more efficiently. Nevertheless Figure 18 emphasises the point that net margins are already quite low on high cost farms in 2008. The downward pressure on milk prices in 2009 is likely to exacerbate this situation and almost completely erode margins on high cost farms. It is estimated that net margins on high cost farms will be just 1 CPL in 2009. Figure 20 presents margins on a per hectare basis.

Figure 20: Net and Gross Margin per hectare for Creamery Milk Producers in Ireland 2007, 2008 and Forecast for 2009



Source: National Farm Survey Data (2007) and Authors' Estimates (2008 and 2009)

The average net margin per hectare is estimated to decline from approximately €1,200 in 2007 to €550 in 2009. This is a 55 percent decrease in profit levels. This is mostly driven by output values which are forecast to decline by 17 percent over the same period.

5. Concluding Comments

Following an exceptional year in 2007 and a relatively good year in 2008, milk prices will be down significantly in 2009. Dairy markets are likely to remain weak unless the EU Commission demonstrates a willingness to provide greater support to the EU market.

Input prices are set to fall in 2009 but the decline is from the high level in 2008. Some items such as labour and other costs are likely to increase, but the major components of cost on dairy farms, feed, fertiliser, contracting costs and energy expenditure should all decrease. However the decrease in costs will not be sufficient to offset the fall in output values. Margins on dairy farms are set to come under serious pressure in 2009 and the outturn for the year is likely to see margins in 2009 return to 2006 levels.

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Situation and Outlook for Beef 2008/2009

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1. Introduction

The 2008 calendar year has been a relatively positive year for beef production, despite significant increases in the costs of production most notably fertilisers and concentrate feeds, gross margins from beef production are expected to be higher than in previous years. This increase in average gross margins of beef production are due to two factors, firstly increased beef prices largely as a result of the EU wide ban on imported Brazilian beef and secondly as a result of a coupled payment in the form of the Suckler Cow Welfare Scheme (SCWS).

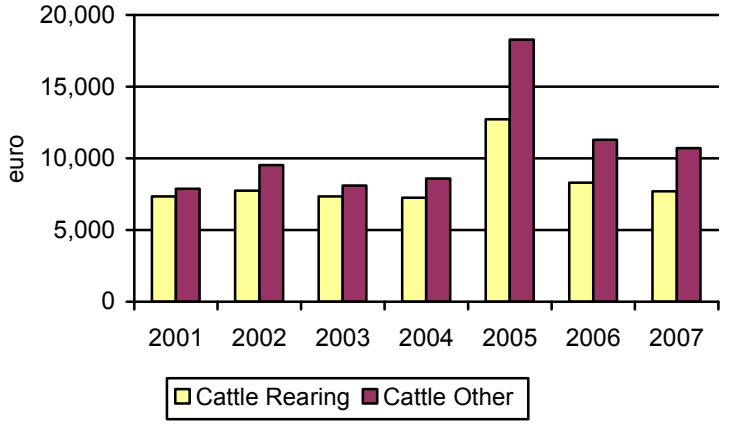
This paper presents a review of the economic performance of beef production in 2007 based on data provided by the National Farm Survey (Connolly et al. 2008). Estimated returns of the current situation for beef production in 2008 are also presented along with the outlook for 2009.

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

Figure 1 graphs the average family farm income on the two main classifications of cattle farms for the period 2001 to 2007. For both farm types the 2007 average family farm income was down almost €600 on the 2006 level; however average margins were higher than those earned over the 2001 to 2004 average. In 2005 average family farm income was significantly higher than in previous or subsequent years this was largely due to the introduction of the Single Farm Payment (SFP) in 2005 as well as the payment of coupled premia which had been carried over from 2004. The average value of this carried over coupled premia from 2004 was €5,266 (Connolly *et al* 2006).

The other point of note in Figure 1 is the growing divergence between the average family farm income that was earned on farms in the cattle rearing system and that earned on the cattle other system. In 2001 the average family farm income on cattle other farms was €500 higher than on cattle rearing farms, however by 2006 and 2007 this difference in average family farm income had increased to €3,000.

Figure 1: Income on Cattle Rearing and Cattle Other Farm Systems: 2001 to 2007

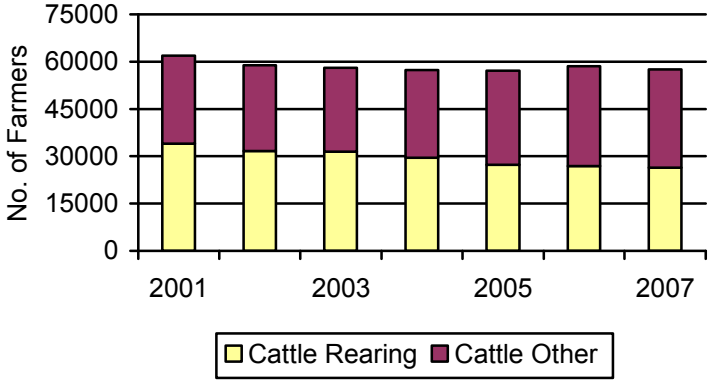


Source: National Farm Survey (various years)

The number of predominantly cattle farms as measured by the National Farm Survey (NFS) farm typology has remained relatively constant over the past six years at approximately 58,000 farms. This is down slightly from the 2001 total of 62,000 beef farms. The small change in the number of specialist beef producers is most likely down due to two factors. Firstly the rate of exit from beef production in Ireland is low. Secondly, dairy and specialist sheep farmers have seen a steady decline in their numbers and it is likely that some of these farmers are entering beef production rather than exiting agricultural production entirely. Therefore they are likely replacing some of those beef farmers who are exiting production.

Figure 2 does suggest however that the number of farmers classified as cattle rearing farms is in decline. This decline in the number of farms with suckler cows may in part be due to the increasing trend in off-farm employment that was witnessed over the period 2001 to 2007. A non-cattle rearing enterprise such as store to finish is likely to be considered less labour intensive and hence more attractive to part-time farmers. Secondly the introduction of decoupling in 2005 may account for some of the decline in the number of cattle rearing farms between 2004 and 2005. Thirdly farmers who exited dairying or sheep production are more likely in the short-term to have specialised in a non-suckler cow farming system, as to build up a suckler cow herd will take time.

Figure 2: Number of Cattle Rearing and Cattle Other Farm Systems 2001 to 2007



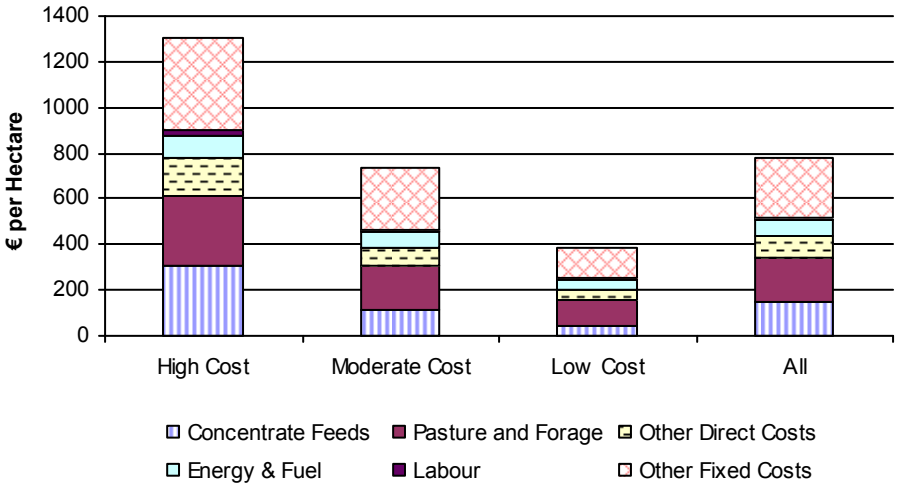
Source: National Farm Survey (various years)

There were approximately 57,500 predominantly beef farms as measured by the NFS farm typology in 2007. However approximately 99,800 farms had a cattle enterprise the following analysis will focus on the full population of farms with a cattle enterprise. Figure 3 illustrates the considerable variability that exists in the cost associated with beef production on all Irish farms with a beef system. Farms are grouped into high, moderate or low cost categories on the basis of their production costs. Costs of production on the high cost farm group are three times higher than on the average of the low cost farm group. The cost of concentrate feeds and the pasture and forage cost (which includes the cost of fertiliser and winter forage production) represent the two dominant costs of production associated with beef production. They account for 78 percent of the direct costs and 44 percent of the total costs of production.

The cost of concentrate feed and pasture and forage varied from €610 per forage hectare on the high cost farms to €160 per hectare on the low cost farms. Other direct costs include the cost of veterinary, AI and hired machinery and again there is considerable variability in the size of these costs across Irish beef producers. The cost of labour, energy and fuel constitute a relatively small proportion of beef production costs and account for approximately 10 percent of production across all farms in the NFS with a beef system. While labour represents a very small cost of production there is significant variability in the cost of labour across farms. The cost of labour varies from €30 per hectare on the high cost farms to only €2 per farm on the low cost farms. All other fixed costs which include land and building maintenance, rent of conacre, depreciation of buildings etc account

for a sizeable proportion of the total costs associated with beef production, accounting for one third of the total cost of beef production.

Figure 3: Variation in Total Production Costs across all Beef Producers in 2007



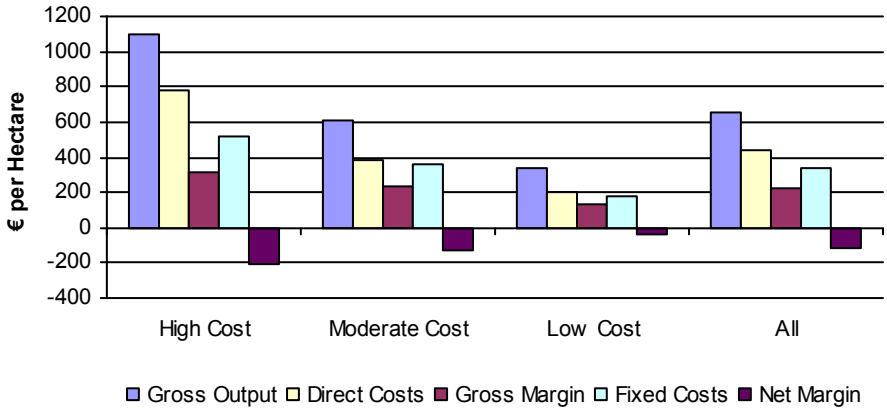
Source: National Farm Survey Data (2007)

The gross output from the beef enterprise is comprised of cattle sales less cattle purchases, plus the value of animals transferred from the beef herd to the dairy herd, minus the value of animals transferred from the dairy herd to the beef herd plus or minus the value of change in inventories. The average gross output varies from €1,100 per hectare on those farms with the highest cost structure to only €300 per hectare on those farms with the lowest cost structure. This would suggest that the variability in the cost structure between farms is due in large part to the intensity of production and not just efficiencies in cost management. The stocking rate on the high cost farms is double of that on the low cost farms. When the total direct costs per hectare are deducted we can see that the average gross margin on the high cost farms is €310 per hectare compared to €140 per hectare for the low cost farms and €220 per hectare across all farms.

However when total fixed costs are deducted the resultant net market margin per hectare across all farm groups is negative. In the case of the high cost farms the net market margin is -€210 per hectare compared with -€41 per hectare on the low cost farms. On average the net market margin per hectare from the beef enterprise on Irish farms was -€120. There are a number of points of note in Figure 4 firstly there is considerable variability in

the average gross output between high and low cost farms. Secondly and perhaps more importantly, despite having a higher gross output per hectare the average net market margin is lowest on the high cost farms. It is also interesting to note that the gross margin per hectare is lowest on the low cost farms but that this farm group has the highest net market margin per hectare. This suggests that most of the cost efficiencies made on the low cost farms relate to fixed costs.

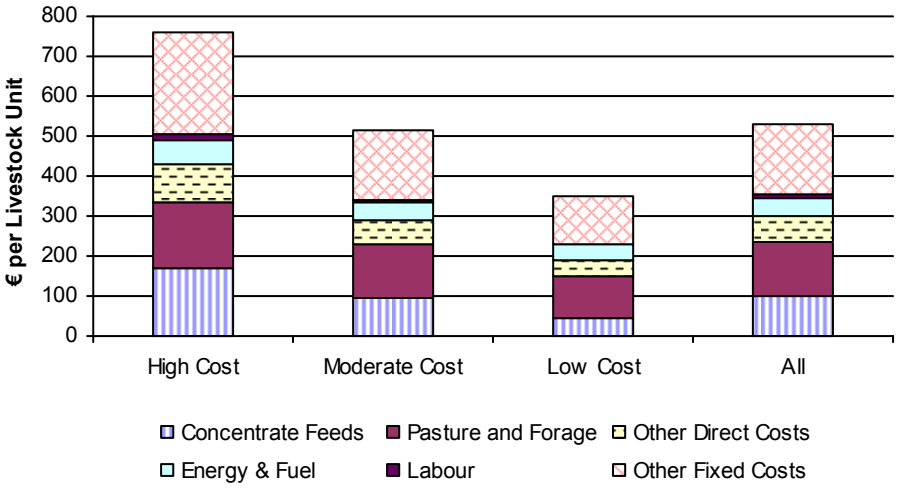
Figure 4: Variation in Net Market Margin per Hectare across all Beef Producers in 2007



Source: National Farm Survey Data (2007)

Figure 5 presents total production costs on a per livestock unit (LU) basis, this allows us to control for some of the cost savings that may occur due to farmers operating a more extensive production system. Concentrate feeds, pasture and forage and other fixed costs are still the main costs of production; however it is important to note that the variability in costs per LU between the highest and lowest is significantly smaller when costs are compared on a per LU basis as opposed to a comparison on a per hectare basis. When compared on a per hectare basis, the high cost category were almost three and a half times that of the low cost category, however when we compare the farm groups on a cost per LU basis, they are approximately twice as high.

Figure 5: Variation in Total Production Costs across all Beef Producers in 2007

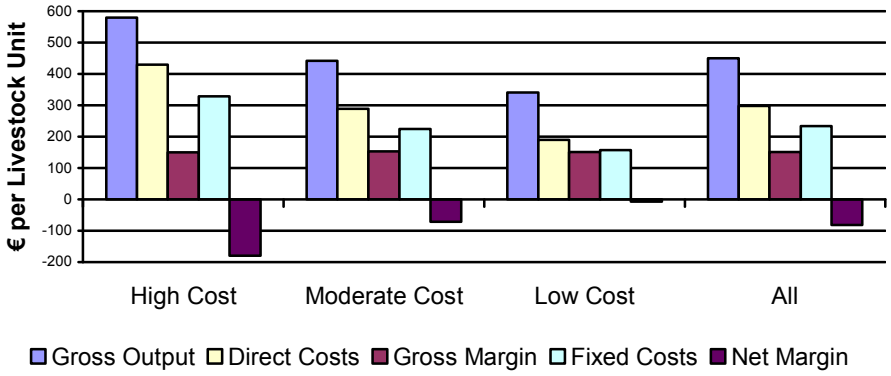


Source: National Farm Survey Data (2007)

The average gross output per LU is €450 across all beef producers in 2007. This varies from an average of €579 on the high cost farms to an average of €349 on the low cost farms. Interestingly when farms are grouped in terms of their costs per LU, there is very little variability in the average gross margin per LU for the beef enterprise across the three cost groupings. The average market gross margin is €151 per LU for all farms, compared with €150 per LU for the low cost farms and €151 per LU for the high cost farms.

There is considerable variability in the average fixed costs across farms, which averaged at €329 per LU on the high cost farms compared with €157 per LU on the low cost farms. Overall the total average fixed costs were €233 per LU and this resulted in an average net margin of -€82 per LU in 2007. The average net margin varied from -€179 to -€67 per LU on the high and low cost farms respectively.

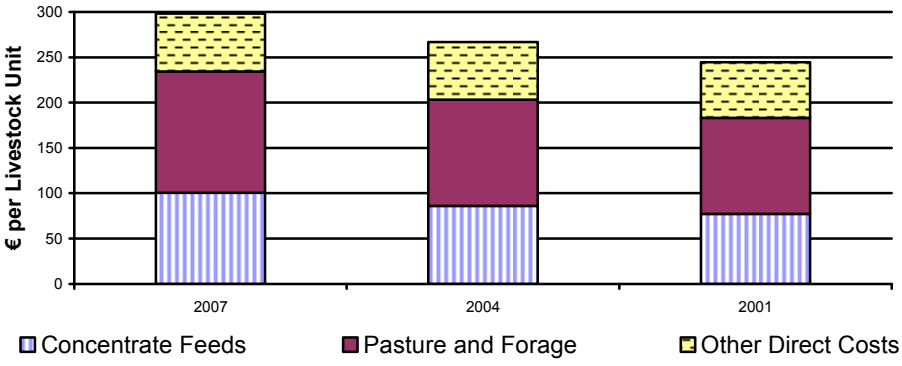
Figure 6: Variation in Net Margin per Livestock Unit across all Beef Producers in 2007



Source: National Farm Survey Data (2007)

Figure 7 presents the level of total direct costs that has been incurred between the three years 2001, 2004 and 2007. In this period total direct costs have increased from €245 per cattle LU to almost €300 per LU in 2007. Over this three year period the other direct costs category has remained largely unchanged, increasing from €62 per LU in 2001 to €64 per LU in 2007 an increase of approximately 3 percent. In comparison, the cost of concentrate feed has increased by €23 per LU between 2001 and 2007, an increase of 30 percent, while the cost of pasture and winter forage production has increased by €28 per LU an increase of 27 percent.

Figure 7: Variation in Total Costs of Beef Production across all Beef Producers in 2001, 2004 and 2007



Source: National Farm Survey Data Various Years

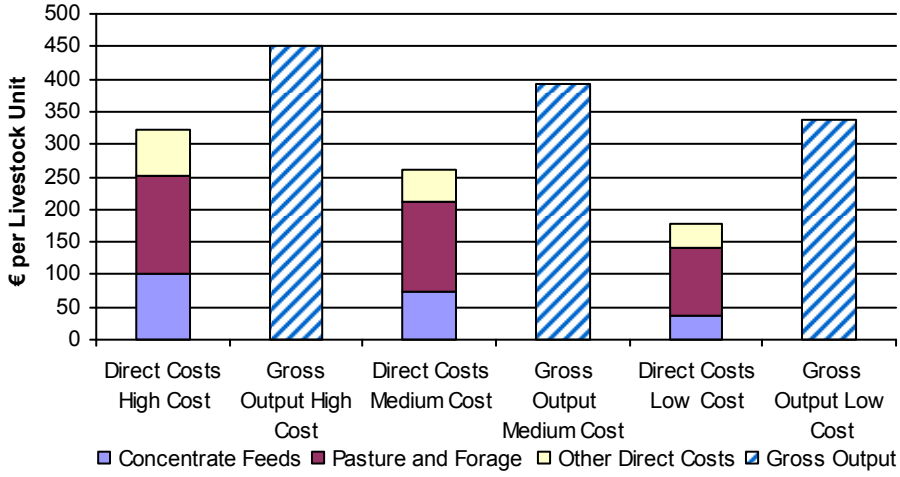
Figures 3 and 5 compare the average direct costs on a per hectare and a per LU basis, much of the variability that occurs within the cost categories on a per hectare basis can be attributed to variability in the average stocking rate between the cost categories. Therefore the remainder of this paper will focus on making comparisons on a per LU basis. The cost of concentrate feed along with pasture and winter forage represent the two major costs of production within beef systems. The average net margins for the high, moderate and low cost farms presented in figures 4 and 6 above were negative. Tables 3 and 4 will group farmers based on their net market margin and these tables indicate that the most profitable farmers have a positive net margin per LU.

2.1 Comparison of Alternative Beef Production Systems

There is considerable degree of heterogeneity in Irish beef production systems, both in terms of the system used to rear the animal and the age at which the animal enters and leaves the farm. However many farms not classified as cattle farms under the NFS farm typology have a beef enterprise on their farm also. This section focuses on the variability in the cost structure for four of the more common categories of beef production system; single suckling (SS), cattle reared on dairy (RD) and two cattle rearing systems weanling to store/finish (WF) and store to finish (SF).

Figure 8 compares the direct costs of production for single suckling farms in 2007 on a per LU basis. The cost of pasture and winter forage dominate direct costs on SS farms. They account for 47 percent of the total direct costs on the high cost farms and 58 percent of total direct costs per LU on the low cost farm. There is considerably more variability in the expenditure on concentrate feeds with the average expenditure on concentrate feeds on low cost farms being €38 per LU compared with €100 per LU on the high cost farms. Similarly there is a large variability in the other direct costs category which are €37 per LU on the low cost farms compared with €71 per LU on the high cost farms. The average gross output on the farms with the highest cost structure was €451 per LU compared with €336 on those farms with the lowest costs.

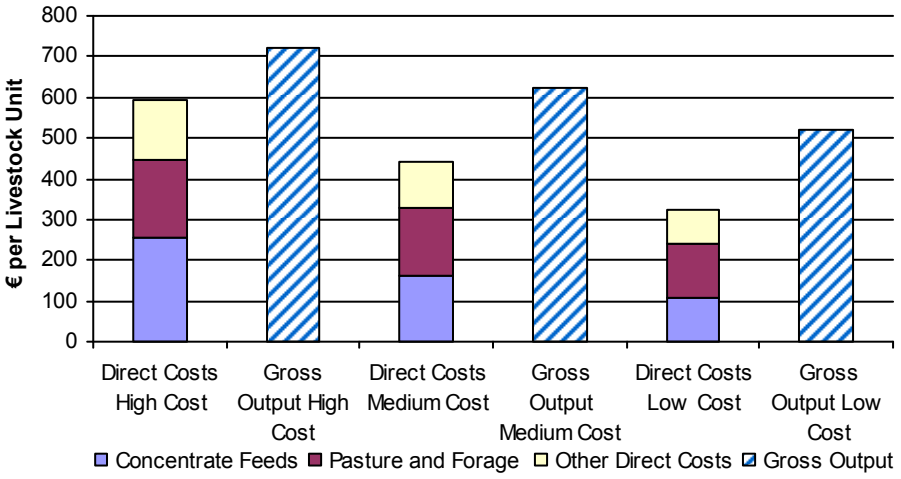
Figure 8: Variation in Direct Costs and Gross Output on Single Suckling Beef farms in 2007



Source: National Farm Survey Data (2007)

The second production system examined is comprised of dairy farms that are rearing cattle born on the farm to the dairy herd. It is worth noting that there is considerably more variability in the costs on the high and low cost category farms category, ranging from €595 per LU on the high cost farms to €324 per LU on the lowest cost farms. Secondly, the cost of concentrate feed represents a larger proportion of the total direct cost accounting for €256 on the high costs farms or 43 percent of the total costs and €106 per LU or one third of direct costs on the low cost farms. This relatively larger expenditure on concentrate feed is due in part to the earlier weaning date of calves on dairy farms compared with calves on suckler cow farms. The cost of pasture and winter feed on high cost farms was €192 compared with €133 on the one third of farms with the lowest cost per LU. Other direct costs were €146 per LU on the high cost farms compared with €85 per LU on the low cost farms. The average gross output per LU varied from €721 for those dairy farms rearing cattle with the highest cost structure to €520 on those farms with the lowest cost structure.

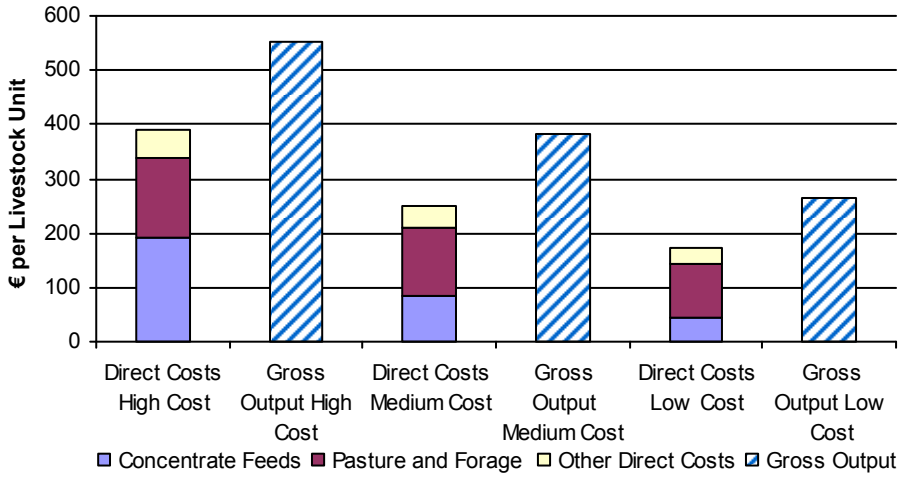
Figure 9: Variation in Direct Costs and Gross Output on Cattle Reared on Dairy farms in 2007



Source: National Farm Survey Data (2007)

Figure 10 compares the total direct costs on farms specialising in buying weanlings which are either finished or sold as stores. There is considerable variability in expenditure on concentrate feeds associated with this beef production system. The cost of concentrate feed on high cost farms was €192 per LU in 2007, this was more than four times the cost of concentrate feed on the low cost farms (€46 per LU). There was significantly less variability in the cost of pasture and forage which was €146 on the high cost farms compared with €99 on the low cost farms. The other direct costs per LU were smaller than on the SS or RD farms and varied from €52 to €28 per LU. There was considerably more variability in the average gross output on the on the farms who were purchasing weanlings and selling them as stores or finished animals. The average gross output on the high cost farms was €552, which is more than double the €265 per LU on the low cost farms.

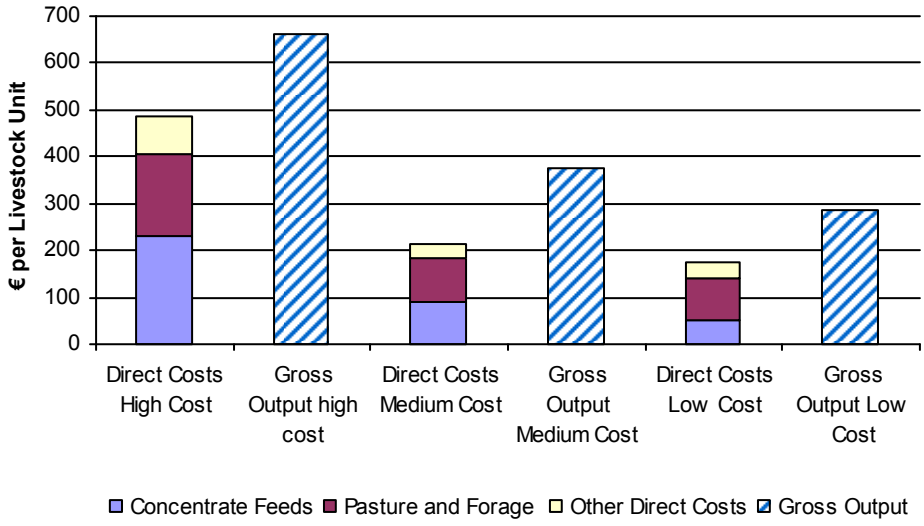
Figure 10: Variation in Direct Costs and Gross Output on Weanling to Store/Finish Beef farms in 2007



Source: National Farm Survey Data (2007)

Finally Figure 11 illustrates that there is a substantial difference between the high and low cost farm groups for the Store to Finish category. The concentrate feed costs for the high cost category is €232 per LU and this is higher than the total direct costs on the other two groups of farms. The cost of pasture and winter forage varied from €175 per LU on the high cost farms to €94 per LU on the low cost farms. The other cost category on these farms is relatively small varying from €80 per LU to €33 per LU. It is important to note that while a significant variability exists in the direct costs, particularly in the cost per LU of concentrate feed, there is also a very large variability in gross output between the high and low cost farm groups. The average gross output on the high cost farms was €663 per LU compared with €288 per LU on the low cost farms. There are two reasons for the large divergence in concentrate feed cost and gross output. The first reason is that there are some farmers who are finishing animals to a very high standard and are thus earning a higher gross output but are also incurring a very high feed bill. The second reason is that if farmers are buying in poor quality stores, the low cost of these animals is reflected in a relatively high gross output, however they also incur higher concentrate feed costs on average as they try to get these animals to a finishing weight.

Figure 11: Variation in Direct Costs and Gross Output on Store to Finish Beef farms in 2007



Source: National Farm Survey Data (2007)

The four figures (8, 9, 10 and 11) above highlight the significant variability that exists between the low cost and high cost cattle farms. However it is important to note that there is also a substantial variability in the gross output and that this variation explains some of the observed variability in direct costs. As a result the average gross margin is higher on the low cost farms for the SS and RD production systems; however for the WF and SF farms the average gross margin is higher on those farms with higher direct costs. This would suggest that while low input cost systems allow farmers engaged in cattle rearing to maximise gross margin those farmers who are finishing animals that were not bred on the farm will maximise their gross margin through high input cost usage in 2007. However it is important to note that these farmers will also be highly susceptible to changes in the cost of concentrate feed.

2.1 Comparison of Performance across Production Systems

Table 1 compares the average direct costs, gross market output and gross market margin across each of the four production systems examined above. The average gross market margin per LU is highest on the dairy beef farms; this beef system has both the highest gross market output per LU and the highest direct costs per LU also. The average gross market margin on the SS farms is €141 per LU compared with €135 per LU on the WF and €151 per LU on the SF farms.

Table 1: Average Gross Market Margin per Livestock Unit across Beef Production Systems in 2007

	Single Suckling	Dairy Beef	Weanling to Finish	Store to Finish
Gross Output (€/LU)	390	601	423	426
Direct Costs (€/LU)	249	428	289	276
Gross Margin(€/LU)	141	174	135	151

Source: National Farm Survey Data 2007

3. Estimated Review of 2008 Performance

This section of the paper presents a review of the beef sector's performance in 2008. A discussion of the changes in input usage and price is presented and this is followed by a discussion of estimated changes in outputs. The subsequent impact on farm margins of the estimated changes in the price and volume of inputs and outputs is presented.

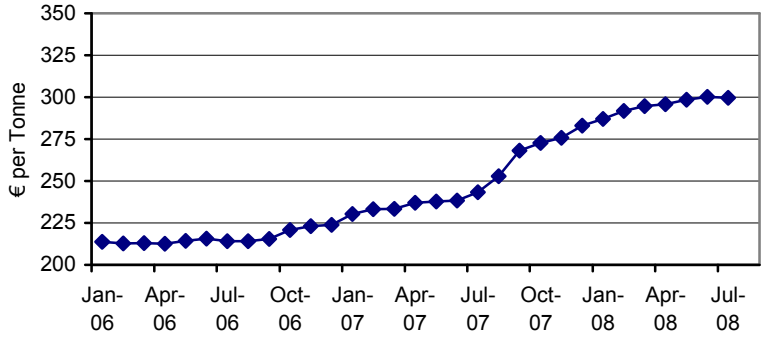
3.2 Estimated Input Usage and Price 2008

3.1.1 Feedstuffs

At the time of writing the average price of beef feed in 2008, is expected to be 14 percent higher than in 2007. To date there are only two quarters of 2008 official data to go on, since the 3rd quarter return will not be available until December. For the first six months beef feed use was approximately 8 percent lower than for the equivalent period in 2007. However it is anticipated that beef feed use for the remaining two quarters will be higher than for the corresponding period last year due to the poor weather conditions which have led to large numbers of animals being housed earlier than planned. Furthermore the introduction of the suckler cow welfare payment and the requirement that participating farmers feed concentrates to calves for the four weeks prior to the two weeks after weaning. Overall we are anticipating a 5 percent increase in beef volume fed relative to the 2007 volume.

Figure 12 illustrates the change in the price of concentrate feeds for cattle from January 2006 to July 2008. Prices were largely unchanged up to the end of 2006 at approximately €220 per tonne. However they have grown steadily since then to a level of approximately €300 per tonne in the summer of 2008.

Figure 12: Monthly Price Index of Cattle Fattening Nuts and Cubes (13-15% Protein) in Ireland for 2007 and 2008



Source: Central Statistics Office Data for 2000 to 2007.

With volumes fed up 5 percent and average feed prices up 14 percent it is estimated that expenditure on feed by beef farmers will be 20 percent higher in 2008 than 2007.

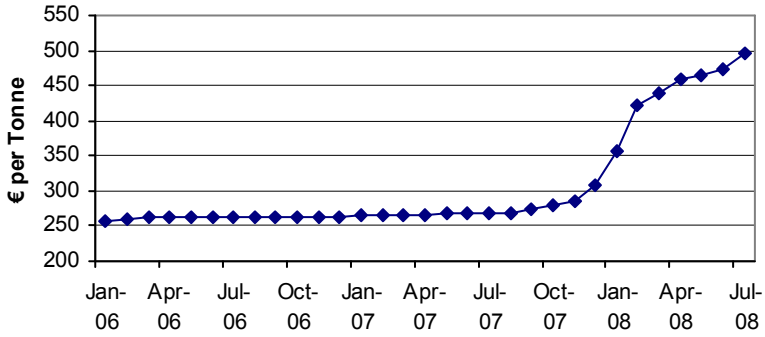
3.1.2 Fertiliser – usage and price 2008

According to data from the Department of Agriculture total nitrogen sales in 2008 have not changed very much from sales in 2007. The decline in nitrogen purchases over the 12 months was about 5% relative to the same period in 2007, while sales of Potassium and Phosphorous in 2008 have declined by approximately 18 percent on sales in 2007. However, these changes reflect the changes in volume sold by the compounders to the fertiliser merchants and do not necessarily reflect sales to farmers. Reports from people in the industry indicate that sales to farmers are down significantly and that many fertiliser merchants will carry substantial stocks of fertiliser into 2009. This decline in farmers' purchases is due to the higher price and the adverse weather which restricted farmer's ability to apply fertiliser. Furthermore, the decline in purchases of fertiliser by farmers in 2008 would appear to vary substantially by region. Sources within the industry said that merchants in the west of Ireland maybe carrying 20 percent of their 2008 purchases of fertiliser into 2009, this compares with a national average carry-over of merchants fertiliser stocks of 10 to 15 percent. This suggests that fertiliser usage has declined more on drystock farms, which is the predominant farming activity in the west of Ireland.

Figure 13 shows the CSO monthly prices for fertiliser from January 2006 to July 2008. As can be seen from the figure the price varied very little

between January 2006 and autumn 2007, however from autumn 2007 the price increased rapidly and by July 2008 was double the January 2006 price. The beginning of October saw a sharp decline in the price paid for Urea, in comparison the price remains high for CAN. Typically these two products tend to track each other quite closely in terms of their price developments however this has not been seen to date. However it is expected that overall the 2008 Urea price will be up about 40 percent on the 2007 level, while the increase in CAN prices in 2008 relative to 2007 is about 60 percent. This increase in Urea prices has bee largely driven by high levels of demand in Brazil, India and Thailand as well as stagnation in Chinese net exports of Urea.

Figure 13: Monthly Price Index of fertiliser (average of all compounds) in Ireland for 2006 to 2008



Source: Central Statistics Office Data

Given the expected changes in fertiliser use and price in 2008, it is estimated that expenditure on fertiliser by beef farmers will be up 38 percent in 2008 compared to 2007 levels.

3.1.3 Energy and Fuel – usage and price 2008

This year has seen huge variability in the oil price. The price for oil increased dramatically in the first half of the year reaching $142 per barrel in July; however the price has since declined substantially since then. The average oil price for 2008 is likely to be about $106, a 46 percent increase on the 2007 average of $72 in 2007. When exchange rate fluctuations are taken into account the increase in the price of oil within the EU was approximately 34 percent.

However the recent decline in oil and wider fuel prices occurred after most of the contract work on beef farms has taken place. As a result it is expected that in 2008 the contractor cost associated with beef production will be 20 percent higher than the 2007 level. Furthermore given that most of this contractor work involves making silage and applying farmyard manure and artificial fertiliser, there is very little scope to change the "volume" of contractor services used.

The electricity price for the first half of 2008 was lower than the prices in the second half of 2007, but prices increased again in the later half of 2008. It is assumed that there were no changes in electricity use by the beef enterprise in 2008 compared to levels of use in 2007.

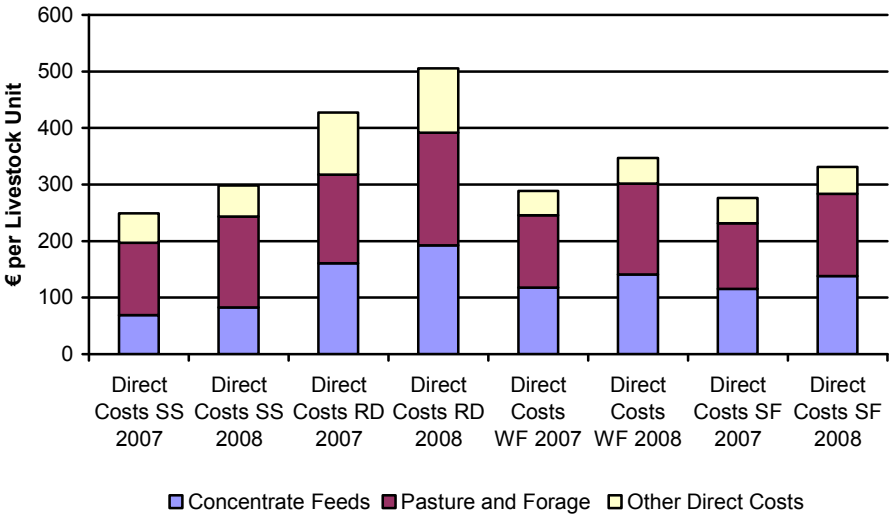
3.1.4 All Other Direct and Fixed Costs– usage and price 2008

It is anticipated that all other direct and fixed costs will increase in line with inflation and so expenditure on these items in 2008 will be 6 percent higher than in 2007. Given the nature of these costs there is little or no capacity for changes in volume used, therefore no change in volume or usage is assumed in 2008 compared to 2007.

3.1.5 Estimate of Total Direct Cost expenditure for 2008

Figure 14 compares the average direct costs of production for the four featured production systems with the estimated direct costs for 2008. It is expected that on average the direct costs of production will be up by between 18 and 20 percent on their 2007 level. This increase in the direct costs of production is driven by higher feed and fertiliser prices as well as general cost inflation. Farmers with a high cost structure will feel the input price inflation more. For example, the biggest change in direct cost expenditure is expected to be on RD farms where costs are expected to increase by €78 on average; these farms had the highest cost structure in 2007.

Figure 14: Comparison of Actual 2007 Direct Costs and Estimated 2008 Direct Costs for main Cattle Systems

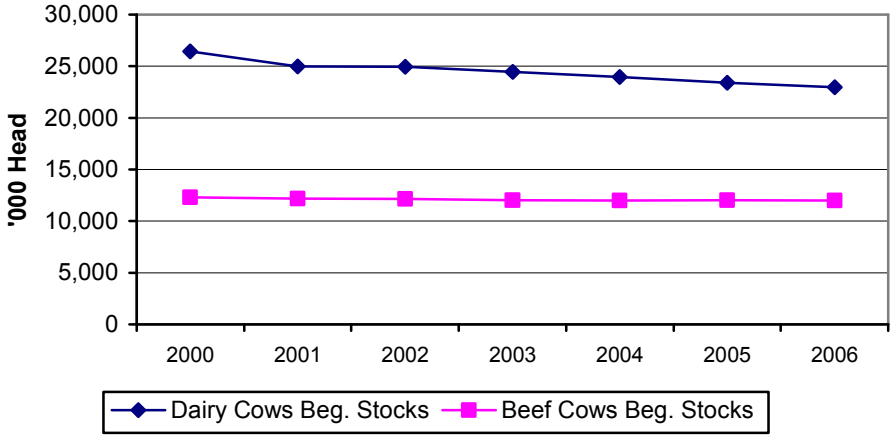


Source: National Farm Survey 2007 and Authors Own Estimates 2008

3.2 Estimated Output Values 2008

Unlike Ireland the supply of beef animals in the EU is largely sourced from the dairy herd, with two thirds of the cows in the EU are dairy cows. The EU dairy herd is itself in decline due to the constraints enforced by the milk quota and increased milk yields per cow, this decline in dairy cow numbers has led to a reduction in EU beef production. There has also been a decline of approximately three percent in the EU suckler cow herd between 2000 and 2006. The contraction in EU beef production has been to the benefit of Ireland and has led to a shift in Irish beef exports away from third world markets towards EU markets. The withdrawal of much of the export subsidy support from the beef market has also encouraged the reorientation of Irish beef exports over the last 10 years.

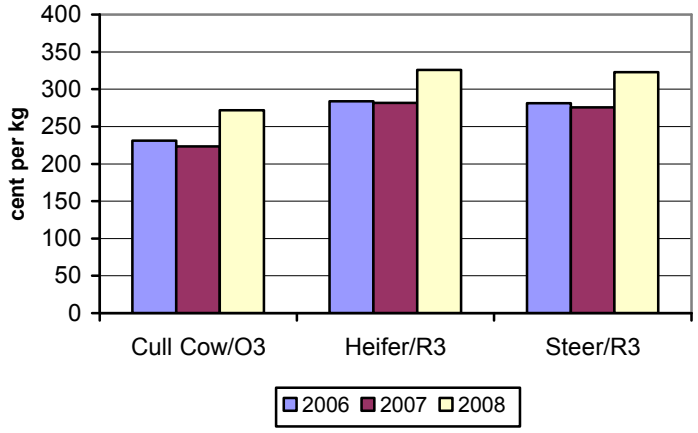
Figure 15: EU Cow Numbers 2000 - 2006



Source: Eurostat

The last year has seen what has amounted to an effective ban on the imports of Brazilian beef to the EU. The absence of Brazilian from EU markets combined with the contraction in EU indigenous production and more or less stable demand for beef in the EU has resulted in an increase in the Irish beef price in 2008 compared to 2007. The average price for R3 steers to the third week of November 2008 was 16 percent higher than the average price for the same period last year, while the average price for R3 heifers was 15 percent higher than in 2007 (see Figure 16 below). The average price for O3 cull cows in 2008 has on average been 21 percent higher than in 2007. The larger percentage increase in the average price for cull cows is partly due to reduced cull cow slaughtering that may be one of the consequences of the introduction of the suckler cow welfare scheme. Figure 16 below compares the weighted average price per kg for these three categories of beef animals. The weighted average price in 2008 for an R3 steer was 323 cent per kg compared with 276 cent per kg in 2007.

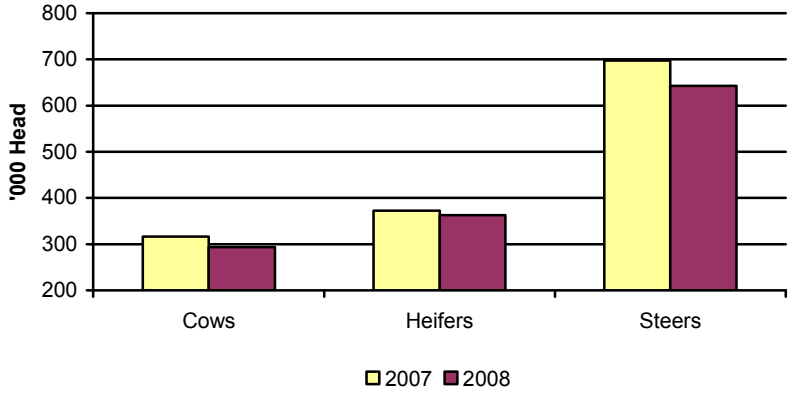
Figure 16: Irish Beef Price for selected animals 2006 - 2008



Source: Bord Bia

Figure 17 presents the throughput of animals in Irish export meat plants up to the third week of November 2008 and for the corresponding period in 2007. The volume of steers processed to date is 642,715 animals, down 7.8 percent on the previous year's total with cows down 7.3 percent and heifers down 2.7 percent. The number of other beef animals slaughtered is up 24 percent however they represent a very small share of the total number of animals slaughtered and overall the number of animals slaughtered to date is down 5.5 percent on the same period in 2007.

Figure 17: Cattle Slaughtered in Ireland 2007 to 2008



Source: Bord Bia

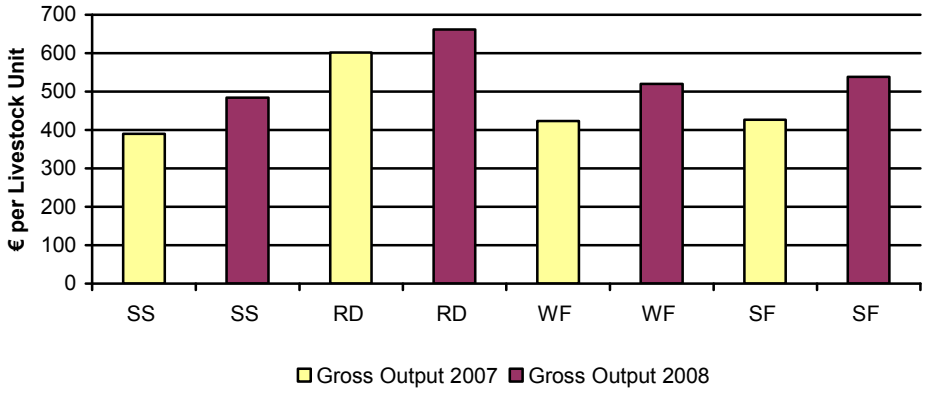
Note: Animals slaughtered in export licensed premises.

As well as higher prices for cattle, 2008 also saw the introduction of the Suckler Cow Welfare Scheme. A total of €250 million has been budgeted for this scheme over the next five years and there are currently 884,000 cows registered in the scheme. The payment is equivalent to €80 per suckler cow in 2008 up to a maximum of 100 cows. Receipt of payment is conditional on satisfying seven conditions related to animal welfare; some farmers will be paid in 2008 with the remaining farmers paid in 2009. This analysis includes the payment in 2009 for suckler cows kept in 2008 in the estimation of the 2008 gross output and gross margin, as it represents payment for animals and increased costs of production that were incurred in 2008. The payment represents a coupled payment as receipt is conditional on having the animals and therefore it is included in the calculation of the enterprise gross output for 2008 and 2009.

3.3 Review of Beef Enterprise Net Margins in 2008

The average market based gross output from beef production is expected to increase across all production systems examined as a result of the estimated higher cattle price and the introduction of the suckler cow welfare payment. The SS farms benefit most from the introduction of the suckler cow payment. The average gross output on SS farms is estimated to increase by €94 or 24 percent compared with an increase of only €60 or 10 percent estimated to arise on RD farms. Average gross output is projected to increase by €96 or 23 percent on WF farms and by €111 or 26 percent on SF farms. The large increase on SF farms reflects the higher increase in the price of steers, up 16 percent compared with a 12 percent increase in the price of store cattle.

Figure 18: Comparison of Actual 2007 Gross Output and Estimated 2008 Gross Output for main Cattle Systems



Source: National Farm Survey 2007 and Authors Own Estimates

Despite the large increase in the cost of fertiliser and concentrate feed in 2008 it is expected that the higher beef prices along with the introduction of the suckler cow welfare payment will more than offset the increase in direct cost. As a result the average gross margin per LU for three of the four systems examined is expected to be higher than in 2007. The biggest increase in gross margin is on the SS and SF farms in the case of SS farms this is largely as a result of the introduction of the suckler cow welfare payment and for SF farms it is due to a larger increase in the price of finished cattle than for the price of stores. The average gross margin on SS farms is estimated to increase by €45 per LU or 32 percent. The average gross margin on the RD farms is estimated to decline from €174 to €156 per LU and this is largely as a result of the very high levels of concentrates that these farmers are feeding. The average gross margin on WF and SF farms is estimated to increase by €38 and €56 per LU respectively.

Despite the higher beef price and the subsequent increase in gross margins the average net margin on all four production systems is expected to remain negative. However the average net margin is estimated to improve on SS, WF and SF farms who as well as benefiting from a higher price for cattle and beef, also benefit from the introduction of the suckler cow welfare payment scheme. On the RD farms the net margin is estimated to be more negative in 2008 than in 2007 as the increase in gross margin is not sufficient to keep pace with the increase in fixed costs. As well as the impact of general cost inflation on fixed costs, the fixed costs category includes the cost of fuel and machinery operating expenses, which increased significantly in 2008 relative to 2007.

Table 2: Gross and Net Margins in 2008 estimated for the main Beef Systems

	Single Suckling	Dairy Beef	Weanling to Finish	Store to Finish
Gross Output (€/LU) 2007	390	601	423	426
Gross Output (€/LU) 2008	484	661	520	538
Gross Margin(€/LU) 2007	141	174	135	151
Gross Margin(€/LU) 2008	186	156	173	207
Net Margin(€/LU) 2007	-90	-33	-127	-78
Net Margin(€/LU) 2008	-74	-77	-122	-51

Source: National Farm Survey Data 2007 and Authors Own Estimates

Table 3 compares the performance of all beef farms in 2007 disaggregated on the basis of profitability. The farmers are divided into thirds based on their net margin per LU. There was a difference of less than €40 in the gross output per LU on the least profitable and average profitability farms. However the direct and overhead costs of production were significantly lower for those farms in the average profitability. As a result the average net margin per LU in 2007 was significantly better on the average profitability farms; however the net margin per LU was negative on both farms. The most profitable farms had higher gross output per LU as well as lower direct and overhead costs and as a result they had a positive net margin of €67 per LU. The overall average net margin per LU for all beef production is -€83 in 2007. Despite the higher beef price in 2008 the increase in net margin for all farms is expected to be small due to increased costs of production. The net margin on the least profitable farms is expected to decline in 2008 relative to 2007; these farms have the highest costs per LU and as a result are more exposed to the impact of the increase in inputs such as fertiliser, concentrate feeds and fuel. In comparison the net margin on the most profitable farms is estimated to increase from €73 per LU in 2007 to €80 per LU in 2008.

Table 3: Financial Performance per LU for Beef Producers 2007 and Estimated for 2008

	Least Profitable	Average Profitability	Most Profitable	All
Gross Output €/LU	385	421	525	450
Direct Costs €/LU	367	283	266	299
Gross Margin €/LU	18	138	259	151
Overhead Costs €/LU	305	225	192	234
Net Margin per LU 2007	-287	-87	67	-83
Net Margin per LU 2008	-314	-81	80	-82

Source: National Farm Survey Data 2007 and Authors Own Estimates 2008

4. Outlook for 2009

In this section we estimate the expenditure for various input items in 2009, the beef price that will prevail and the likely income of beef farmers in 2009.

4.1. The Outlook for Input Expenditure

4.1.1 Feedstuffs

Feed usage in the first half of 2008 was down almost eight percent on the same period in 2009, however it is expected that due to the bad weather and the introduction of the suckler cow welfare payment scheme feed usage for the year will be higher than in 2007. The increased demand for calf feed as a result of the suckler cow welfare payment is assumed to continue in 2009. Furthermore the earlier housing of beef cattle in the autumn of 2008 due to the adverse weather conditions may lead to a shortage of winter forage on some farms, for the spring as a result we are estimating that the feed volume between 2008 and 2009 will remain unchanged.

The 2008 harvest prices for feed wheat and barley are 30 percent down on the 2007 harvest prices. Farmers purchasing feed in 2009 can expect to benefit from the fall in 2008 harvest prices. However the price of feed will be affected by other factors also including the price of imported ingredients, as well as labour and energy costs in the feed mills.

If we assume a price decrease of 20 percent relative to the 2008 price with volume remaining unchanged this would leave total expenditure on animal feed down 20 percent on the 2008 level.

4.1.2 Fertiliser

Urea prices in autumn 2008 are back to the spring 2007 level, while the price of CAN has not changed to date, however given the similar nature of the two products it is expected that CAN prices will track the decline in Urea prices. This decline in fertiliser prices is largely due to falling energy prices, as well as falling commodity prices and reduced taxes on fertiliser exports in China.

Fertiliser usage in 2008 was estimated to be down approximately 14 percent on the 2007 levels, this reduction in fertiliser usage was driven by higher fertiliser prices and the adverse weather which restricted application of fertiliser on many farms across the country. Assuming a normal year in terms of weather and the reduction in the fertiliser price we expect fertiliser usage in 2009 to be 10 percent higher than in 2008, however this will still leave the volume of fertiliser usage down on the 2007 level. Overall therefore it is expected that fertiliser expenditure for beef production in 2009 will be down 12 percent on the 2008 level.

4.1.3 Energy and Fuel

The average crude oil futures price for 2009 is currently $55 per barrel, this represents a decline of 30 to 40 percent on the 2008 level assuming no change in exchange rates. The analysis assumes fuel expenditure in 2009 is 15 percent lower than in 2008 and with electricity prices remaining unchanged overall expenditure on energy and fuel would be down 10 percent in 2009 relative to the 2008 level.

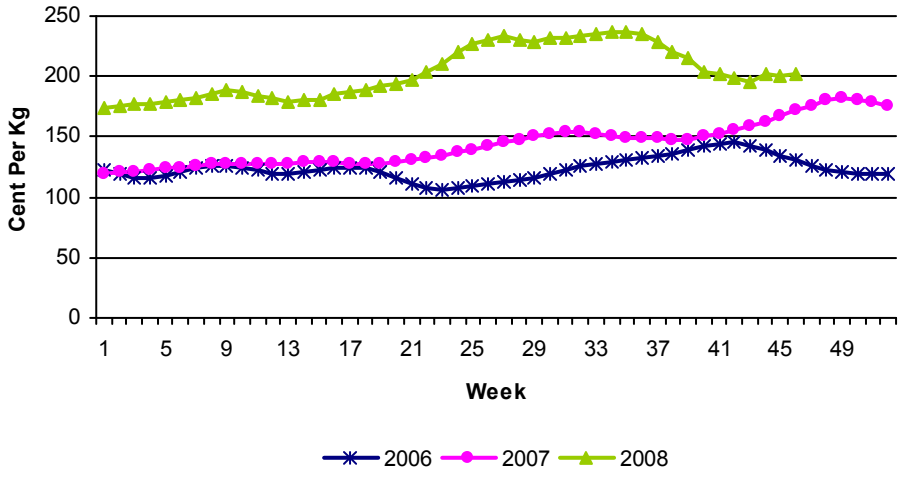
4.1.4 Other Direct and Fixed Costs

The increase in inflation and wage costs is expected to be lower than in recent years as a result of the downturn in the economy. A two percent increase on the 2008 cost of labour and other direct costs is expected with no change in the volume used.

4.2. The Outlook for Beef Markets 2009

The outlook for Irish beef markets and including that for Irish cattle prices will be largely dependent on whether or not Brazilian beef imports re-enter the EU market. To date there is no indication that Brazilian beef imports are set to return to the EU market in 2009. Secondly as can be seen from figure 19 below despite the ban on Brazilian beef imports to the EU, the price for the equivalent of R3 steers in Brazil has continued to increase over the period in which the effective ban on Brazilian beef has been in place. Figure 19 presents a rolling four week average price of Brazilian R3 equivalent prices for the period 2006 through 2008. The 2008 price has declined since mid September however it still remains higher than the peak price in 2007 and is well above the price observed in 2006. This increase in price is due to a number of factors increased domestic consumption, Brazil's success in finding alternative markets for its beef exports and increased costs of production in Brazil. Therefore even if Brazilian beef is to be readmitted to the EU it will not enjoy the same price advantage that it had prior to the ban and a return to the prices seen prior to the ban is unlikely.

Figure 19: Average Brazilian Beef Price 2006, 2007 and 2008



Source: Bord Bia

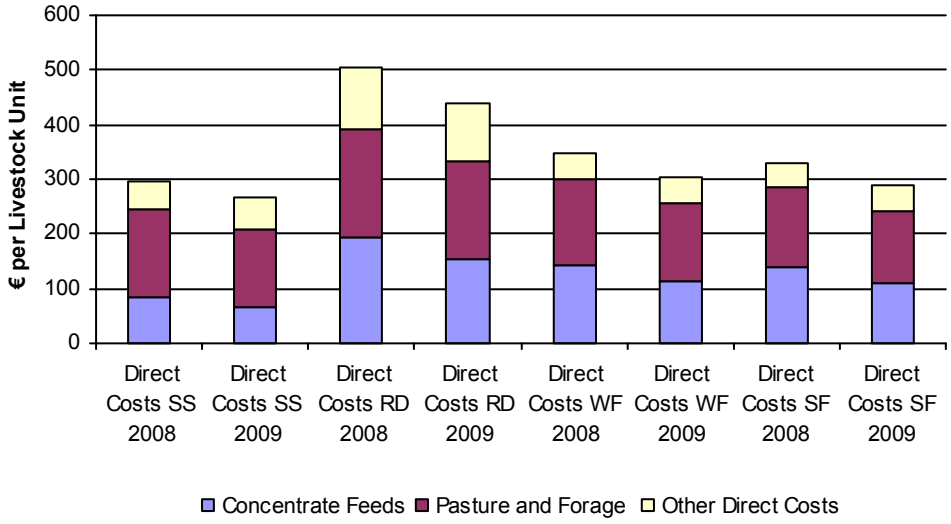
We have assumed that the ban on Brazilian beef imports will continue in 2009 and that due to declining EU beef production, Irish beef prices in 2009 do not decline from their average 2008 levels. While week on week variability in beef prices will continue to occur the overall average beef price is expected to remain largely unchanged relative to the 2008 average price. However the value of the suckler cow welfare payment in 2009 is reduced in line with the recent 2009 budget announcement. There was an initial budgetary allocation of €250 million for the SCWS with €77 million allocated for the payment on suckler cows in 2008. This leaves €173 million for the remaining four years of the scheme. There are currently approximately 884,000 cows registered in the scheme and assuming the number of cows registered does not change this would equate to a payment of almost €49 per cow.

4.2. The Outlook for Beef Enterprise Net Margin in 2009

Figure 20 compares the estimated average direct costs in 2008 and 2009 for the four featured beef production systems. Given the estimated volume changes in input usage as well as the changes in input costs, it is expected that total direct input cost expenditure will be down in 2009 relative to 2008. The greatest reduction is expected on the RD farms where total direct costs are expected to decline by €67 per LU. The reduction in direct costs is expected to be lowest on SS farms, €33 approximately, while a reduction of €45 and €42 per LU is expected on WF and SF farms respectively. Overall

estimated total direct costs will be almost 13 percent below there 2008 level, but will still remain above the 2007 level.

Figure 20: Comparison of Estimated Direct Costs for 2008 and Forecasted Direct Costs for 2009

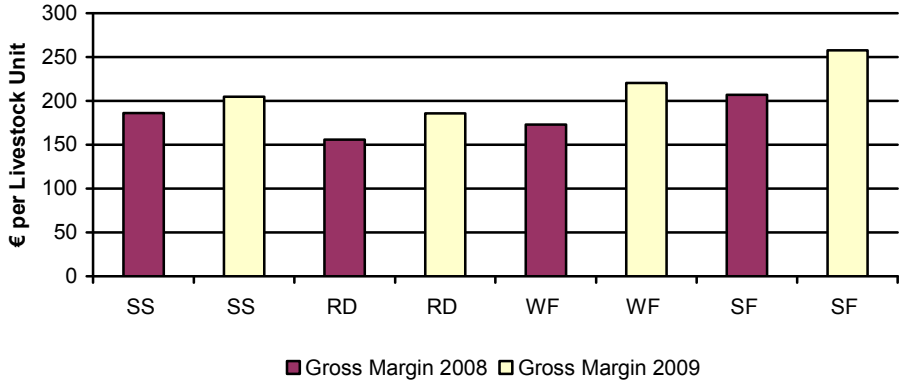


Source: National Farm Survey 2007 and Authors Own Estimates

As prices are expected to remain unchanged in 2009 relative to 2008 the only change in average gross output will be as a result of the reduction in the suckler cow payment. Figure 21 compares the estimated average gross margins for 2008 and 2009 for the four cattle systems examined.

The average gross margin for all four production systems is expected to be higher than in 2008 however the increase in average gross margin is significantly smaller on SS farms due to the reduction in the value of the suckler cow welfare payment. On SS farms the average gross margin is estimated to increase by €19 per LU compared with €29 per LU on RD farms. The average gross margin on WF and SF farms is estimated to increase by €47 and €51 per LU between 2008 and 2009.

Figure 21: Estimated 2008 Gross Market Margin and Forecasted 2009 Market Gross Margin



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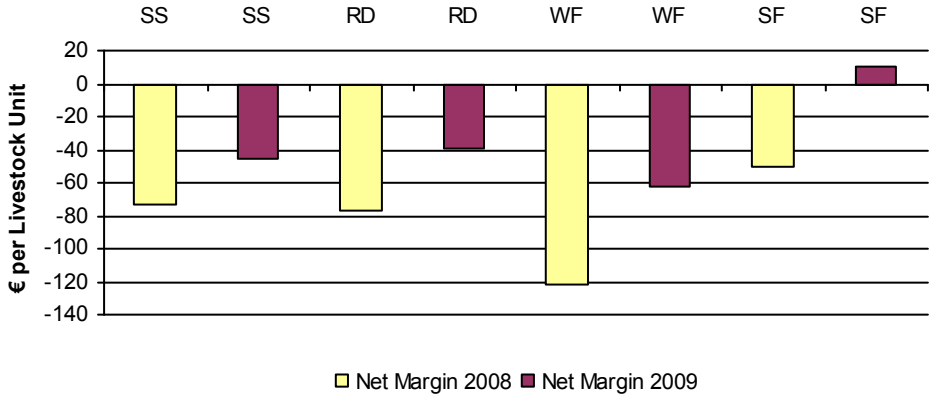
ource: Authors Own Estimates 2008 and Forecasts 2009

The estimated average net margin across the three of the four production systems remains negative in 2009 however a significant improvement relative to 2008 is expected. This improvement in average net margin is brought about by improved gross margins as well as lower fuel costs. The biggest improvement is expected on SF farms where the net margin is expected to go from -€50 in 2008 to €10 in 2009. However this improvement in net margin assumes that the divergence in store and finished cattle prices seen in 2008 continues into 2009.

Figure 22: Estimated 2008 Net Margin for 2008 and Forecasted 2009 Net Margin for main Cattle Systems



Source: Authors Own Estimates (2008) and Forecasts (2009)

Table 4 compares the average net margin per LU for all beef producers in 2007 with estimated average net margins in 2008 and 2009. The estimated average net margins in 2009 are expected to be higher than in 2007 or 2008. This is largely due to higher beef and cattle prices along with a reduction in some of the key costs of production, i.e. fertiliser, concentrate feed and fuel. However two thirds of farmers are still expected to earn a negative net margin per LU from beef production, with the average net margin estimated to be -€46. The average net margin on the most profitable farms is estimated to be €103 per LU in 2009.

Table 4: Net Margin per Livestock Unit from Beef Producers 2007 2008 (estimate) and 2009 (Forecast)

	Least Profitable	Average Profitability	Most Profitable	All
Net Margin per LU 2007	-288	-87	67	-83
Net Margin per LU 2008	-314	-81	80	-82
Net Margin per LU 2009	-262	-42	103	-46

Source: National Farm Survey Data 2007, Authors Own Estimates 2008 and Forecasts 2009

Finally table 5 compares the actual net margin per hectare for beef producers in 2007 with the estimated net margin per hectare in 2008 and the forecasted net margin per hectare for 2009. As with the comparison on a per LU basis the net margin per hectare for the least profitable and the average profitability farms was negative in 2007 and is expected to be negative in 2008 and 2009. However the forecasted net margin per hectare on these farms for 2009 is less negative than the actual net margin per hectare in 2007 or the estimated net margin per hectare in 2008. The most profitable one third of farms had an actual net margin per hectare in 2007 of €103, this is estimated to increase to €123 per hectare in 2008 and the forecast for 2009 is €158 per hectare. The average net margin per hectare for all farms in 2007 was -€121 this is expected to improve slightly in 2008 to -€120 per hectare. A more substantial improvement is expected in 2009 with the average net margin per hectare for all farms forecasted to be -€67 per hectare.

Table 5: Net Margin per Hectare from Beef Producers 2007 2008 (estimate) and 2009 (Forecast)

	Least Profitable	Average Profitability	Most Profitable	All
Net Margin per Ha 2007	-409	-119	103	-121
Net Margin per Ha 2008	-449	-110	123	-120
Net Margin per Ha 2009	-368	-58	158	-67

Source: National Farm Survey Data 2007, Authors Own Estimates 2008 and Forecasts 2009

5 Concluding Comments

The current year has been a high cost year for Irish beef producers due largely to high prices for fertiliser and an increase in the cost of concentrate feed as a result of last year's high grain prices. Despite the high direct costs of production, beef prices in 2008 have been substantially boosted by the ban on imports of Brazilian beef into the EU. This coupled with the introduction of the Suckler Cow Welfare payment means that average gross margins in 2008 are expected to be higher than in 2007.

It is expected that the ban on Brazilian beef will continue throughout 2009 and as a result Irish beef and cattle prices in 2009 will remain at their 2008 level. Furthermore a reduction in the two principal direct costs, concentrate feed and fertiliser, is expected in 2009. This analysis assumes that the value of the suckler cow welfare payment will be reduced to €49 per cow as a result of the budgetary constraint on the scheme. Despite the reduction in the suckler cow payment, the average gross margin in 2009 is expected to be higher than that earned in 2008.

Despite the increase in average gross margins between 2007 and 2008, beef producers are expected to still find their net margin largely unchanged as a result of the cost price squeeze. However an improvement in average net margins is expected in 2009 as a result of higher beef and cattle prices, and lower prices for the main inputs concentrate feed, fertiliser and fuel. It is expected that on average beef producers will still not be able to retain all of their SFP and REPS, however the amount of these payments used to subsidise the loss making beef enterprise is expected to decline.

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Situation and Outlook for Sheep 2008/2009

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1. Introduction

Data from farms in the National Farm Survey (NFS) that have a sheep enterprise are used together with data from Bord Bia, the CSO and Eurostat, as the bases for an analysis of the financial and technical performance of Irish sheep farms. Our estimates of enterprise margins for 2008 are based on 2007 NFS data, CSO price indices for this year to date, and advice from Teagasc sheep specialists and other industry professionals. Forecasts of sheep enterprise margins for 2009 are based on estimates of margins for 2008, and forecasts of input and output prices.

We begin with brief review of the farm income performance of all sheep farms in 2007. This is followed by an overview of the current short term outlook for European sheep markets and for Irish lamb price in particular. A brief overview of medium term trends in European and Irish sheep markets is then presented. This medium term outlook examines the likely longer term prospects for the Irish sheep sector and highlights the policy issues that will be important over the next 10 years. A detailed summary of the 2007 sheep margins is then presented and this is followed by estimates and forecasts of margins for the main sheep enterprises in 2008 and 2009, respectively.

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

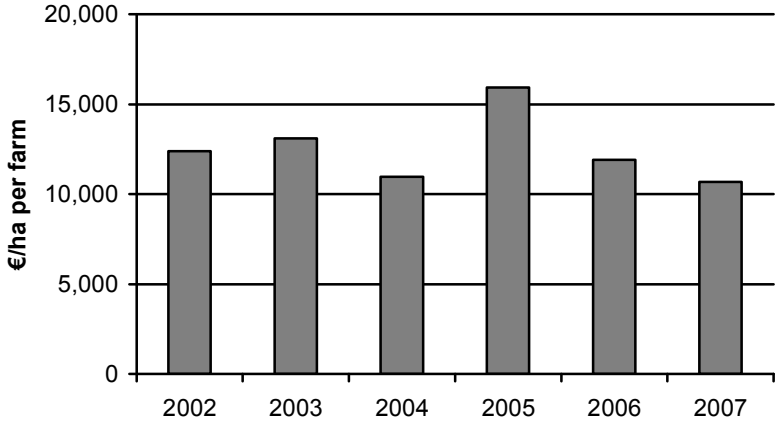
Family farm income[2] on those farms classified by the NFS as "mainly sheep" farms has been quite variable over the past number of years.[3] The 2007 average income on sheep farms (defined as farms where sheep are the dominant enterprise), was just under €10,700. The average family farm income (FFI) on sheep farms for the period 2002 to 2007 is shown in Figure 1. The decline in FFI, in 2007 relative to 2006, was the result, principally, of a 7% decline in total farm output, with market-based gross output declining by 9%. Direct costs and overhead costs in 2007 declined by 7% and 3% respectively. The "mainly sheep" farm category in the NFS was the farm

[2] 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, 2008).

[3] The "Mainly Sheep Farm" farm category within the National Farm Survey includes those farms where the sheep enterprise was the dominant enterprise in the farm's gross margin.

category within the NFS that managed to contain both the direct and overhead costs during 2007.

Figure 1: Income on Mainly Sheep Farms in Ireland: 2002 to 2007



Source: Teagasc National Farm Survey

Almost 26% of sheep farms had a family farm income of greater than €13,000. However, a large number of farms had a very low income; thus 30% of farms had an income of less than €3,500 per annum. Most of these very low income farmers supplement their farm-based income from other sources such as off-farm employment, pensions or unemployment benefit. On 60% of all sheep farms, either the farmer or spouse had off-farm employment, while on 50% of all sheep farms the farm holder was a source of off-farm income earnings.

Participation in the rural environment protection scheme (REPS) can potentially increase family farm income on Irish farms, including sheep farms. This contention is supported by NFS data which show notable difference in incomes on REPS and non-REPS sheep system farms. Incomes, of on average €15,150, were earned on the REPS sheep farms, these exceed those earned on the non-REPS extensive farms which were on average €4,960.[4] Approximately 51,000 farmers are participating in REPS in 2007, close to 12,000 of these farmers are sheep farmers. This mean that the majority of Irish sheep farmers are not participating in REPS. Given that the average payment to those sheep farms participating in REPS was €6,640 (contributing to 44% of family farm income on

[4] A Non-REPS extensive farm is defined as a farm that is producing less than 170kg of organic nitrogen per hectare.

participating farms), participation in REPS provides an opportunity to ad significantly to family farm income on sheep farmer.

The evolution of the prices farmers receive for their output and the costs of producing lamb are the key determinants of enterprise profitability. In the next section we review the short run outlook for Irish lamb prices. This is then followed by a more long term outlook for the sector.

2.1 *Sheep Meat Markets and Prices*

The overwhelming majority of the Irish lamb output is exported, with four out every five lambs produced exported from Ireland. This fact alone means that price developments on Ireland's export markets largely determine the prices that Irish sheep farmers receive for their lambs. Movement in the prices of other competing meats also has an impact on demand for lamb and hence the market price.

On the EU market, Irish lamb competes with lamb produced in other Member States and lamb produced in New Zealand and Australia. Demand for lamb has been largely stable in recent years with minor declines in EU per capita consumption being offset by increases in population. Demand for lamb in the EU is expected to remain stable over the short run. This means that the short-run outlook for lamb price will, given the stable demand outlook on the key European lamb markets, be driven by developments in supply.

Within the EU the only Member States with a significant exportable surplus are Ireland and the UK, while the major sources of extra lamb imports to the EU are New Zealand and to a lesser extent Australia. The major importers of lamb within the EU are the UK and France (note the UK imports lamb from New Zealand and exports lamb to France).

The short run supply story within the EU is one characterised by contraction of breeding flocks and falling levels of lamb slaughter. The volume lamb slaughtered in IRL to the middle of November 2008 was over 13% lower than in 2007 (Bord Bia, 2008). In France the number of lambs slaughtered by the end of September was 8% lower than at the same point in 2008 (Eurostat, 2008). The volume of lambs slaughtered in the UK has not declined in 2008 but the volumes that will be available for slaughter in 2009 are forecast by EBLEX to fall from 2008 levels (EBLEX, 2008). The overall contraction in EU lamb supplies that is occurring currently is an important factor in the increase in average lamb price in 2008 over 2007.

The supply of lamb from within the EU in 2009 is a function of this year's inventory of breeding ewes. Overall breeding inventories are lower in 2008

than in 2007. Provisional June estimates from the CSO show a decline in the Irish sheep breeding stock of over 8% compared to 2007. EBLEX is forecasting that the UK breeding flock will contract by 4% (EBLEX, 2008), while the trend in French inventories of ewes suggests a further 2% decline in breeding stock by the end of 2008.

Lower volumes of indigenous EU lamb production in the past would have led to increased volumes of lamb imports. However, the latest research by Meat and Wool New Zealand suggests that this may not be the case now or in the short to medium term (Meat and Wool New Zealand, 2008). Meat and Wool New Zealand (ibid) have reported that sheep numbers in June 2008 were 11% lower than in 2007, and they predict that lamb exports will fall by 23% in 2008/2009. This contraction in New Zealand lamb production and exports is due to the movement of farmland out of sheep production and into dairy production. Thus, import of NZ lamb into the EU is unlikely to increase as EU production contracts; it may even decline.

The only other exporter of any considerable scale on world sheep meat markets is Australia. The Australian EU import quota is less than a tenth the size of New Zealand's nevertheless in the event of a shortage of lamb they would be the logical suppliers. However, Australian lamb supplies and exports are not over the short term expected to increase. The Australian sheep flock declined in 2007/2008 due to the combined effects of drought, high grain prices and high lamb prices relative to wool prices (Jackson, 2008). In 2008/09 the Australian sheep flock is forecast by ABARE to decline by 4% due to reduced breeding stocks (Jackson, 2008).

The combination of the contraction in indigenous EU supplies of lamb and the forecast contraction of New Zealand (and Australian) lamb exports, with a stable EU demand for lamb, suggests that the prices of lamb on European (and wider international) markets in 2009 is likely to remain at or above the level observed in 2008.

2.2 Lamb Prices

Lamb prices paid in export abattoirs in Ireland declined in 2005 but have increased in each of the last 3 years. Table 1 shows the trend in Irish lamb prices since year 2001. Given the likely contraction in available supplies, 2009 Irish lamb prices will remain at or above the levels observed in 2008. The average price to date for 2008 is 4% higher than for the same period last year.

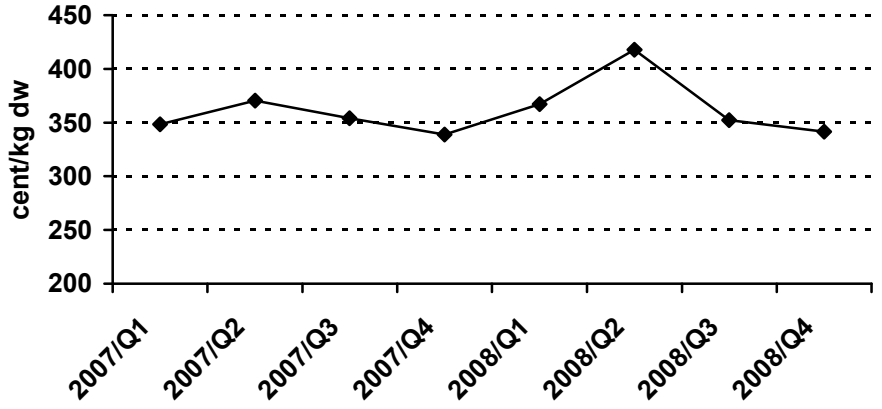
Table 1: Irish Lamb Price, 2001 – 2007

Year	2001	2002	2003	2004	2005	2006	2007	2008
Lamb price c/kg dw	445	380	365	365	338	345	354	369 *

***Average Price to mid November 2008**
Source: Bord Bia

The quarterly average Irish lamb price since Q1 2007 is shown in Figure 2. The price showed quite a large increase in the second quarter of 2008 compared to the same period in 2007, and reached a level of almost 422 cent per kg deadweight in mid June 2008. This represented an increase of over 8% on the same period for 2007.

Figure 2: Irish Lamb Prices, 2007-2008



Source: Bord Bia
Note: Q4 2008 price is the price for the quarter to date (mid-November).

2.3 Sheep and Flock Numbers

The decline in the number of sheep flocks in Ireland, ongoing since 1993, has continued in 2007 with the number of sheep flocks recorded by the Department of Agriculture, Fisheries and Food standing at 33,677 flocks. This level represents a 36% decline on the number of flocks that existed in 1993.

Table 2: Sheep Flock Numbers 1993 – 2007

Year	1993	1998	2000	2004	2005	2006	2007
Number of flocks	52,955	44,583	41,177	34,821	37,209	35,277	33,677

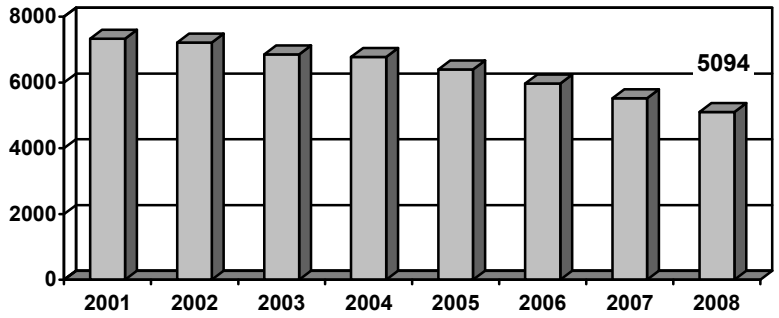
Source: Department of Agriculture, Fisheries and Food, 2007

The national average flock size has decreased since the early 1990s, with an increase in the rate of decline since 2005 (Table 2). The average breeding flock size was 108 ewes in December 2005; by December 2007 this had declined to 97 ewes per flock. Of the 33,677 sheep flocks in the country, approximately 45% have less than 50 ewes, while 77% of flocks are smaller than the average. The number of large flocks, i.e. those with greater than 200 sheep, fell slightly to 11.4% of the total.

Although the number of sheep flocks in Ireland has been falling, the Ireland Sheep and Goat Census (DAFF, 2007) notes that there does not seem to have been any significant consolidation in the sheep sector such as the emergence of larger sheep flocks.

The decline in the national sheep flock has accelerated, especially since 2005, with Irish sheep numbers in June 2008, 8% head lower than 2007 and almost 15% lower than in 2006. These data are graphed in Figure 3. [5] Since 2000, the size of the Irish breeding flock has fallen by 1.69 million head.

Figure 3: Sheep Numbers '000 Head 2001-2008 (June)



Source: CSO

[5] CSO June Crops and Livestock Survey, Provisional Estimates, 24 October 2008.

2.4 *Medium Term prospects for the Irish and EU sheep sectors*

Over the next 10 years the prospects for the Irish and EU lamb sectors, in the absence of any significant changes in agricultural and agricultural trade policy are, if not buoyant, at least stable (Binfield, Donnellan, Hanrahan and Westhoff, 2008a, Hanrahan 2008). The short-run factors that will underpin prices in 2009 are likely also to characterise the EU lamb market over the medium term. The volumes of lamb produced within the EU will continue to contract while imports are unlikely to increase because of the supply constraints in New Zealand outlined earlier. Demand for lamb is not projected to increase dramatically but rather is expected to maintain stable at current volumes.

FAPRI-Ireland projections (Binfield, Donnellan, Hanrahan and Westhoff, 2008a) suggest the price of lambs in the EU and Ireland is likely to increase over the next 10 years in the absence of any deal in the WTO. Due to the fact that price of cattle is likely to decline (due to the return of some Brazilian beef to the EU market) over the next 10 years the returns from sheep enterprises when compared with other dry-stock enterprises are projected to increase. This improvement is projected to slow down the rate of decline in Irish ewe numbers. By 2017 Irish ewe population is projected to decline to 2.7 million, which is 7% lower than in 2007. Thus, while ewe numbers are expected to continue to contract the rate of decline is expected to slow dramatically.

It is possible that there will be a WTO agreement within 10 years and in the context of such an agreement it seems unlikely that lamb will be designated as a sensitive product. Thus the tariffs on lamb imports are likely to be cut by approximately 70%. The negative impact of an agreement on the lamb sector is likely to be tempered by the limited capacity at a global level to increase volumes of lamb shipped to the EU. Overall, FAPRI-Ireland analysis of the impact of a WTO agreement on Irish agriculture (Binfield, Donnellan, Hanrahan and Westhoff, 2008b) suggests that if a WTO agreement is reached that the price of lamb would decline by around 8% relative to the price it would have reached in the absence of a WTO agreement. With a WTO agreement the Irish ewe flock would be 3% lower than it would be in the absence of a WTO agreement.

With EU sheep production declining there have been calls for the introduction of a direct payment for sheep that would be coupled to production. See for example MEP Liam Aylward's Report (European Parliament, 2008). It is unclear at this point whether or not such a payment will materialise. The introduction of such a payment it would, without doubt

,slow the rate and possibly (depending on the value of the payment) even reverse the decline in Irish ewe population.

2.5 *Sheep Margins – 2007*

Gross margin data for the main sheep systems from the National Farm Survey are shown in Table 3.[6] The gross margin for the early and mid-season systems are based on data from flocks farmed on all soil groups, while the hill system data is based on farms with soils that have a limited use range.

Table 3: Gross Margin (€/ewe), 2005 – 2007

System	2005*	2006	2007
Early Lamb	49	46	55
Mid-Season Lamb	52	42	51
Hill-Blackface	4	4	6

Source: Teagasc National Farm Survey
** Includes carryover of direct payments from 2004 year*

Gross output from the early-lamb system increased by 3% in 2007, this increase was mainly due to an increase in the lamb price in the April to May period and an improvement in technical performance (higher weaning rate and lower lamb mortality). Direct costs for early lamb production declined by almost 13% with concentrate feed costs declining from €26 in 2006 to €21 per ewe in 2007. Overall gross margin per ewe for the early-lamb system increased by almost 20% in 2007.

Mid-season lamb is the predominant lowland sheep system in Ireland. Changes in the value of output, costs and gross margins per ewe between 2005 and 2007 for this system are shown in Table 4. Gross output per ewe increased by 12% between 2006 and 2007 while direct costs increased slightly by 2%. The main reason for the increase in gross output was the increase in lamb price that occurred during 2007. Improved technical performance also contributed to the observed increase in margins. In 2007 the mortality rate for ewes was slightly lower though lamb mortality remained unchanged, while the weaning rate increased slightly between 2006 and 2007.

[6] All per ewe data are based on per ewe joined.

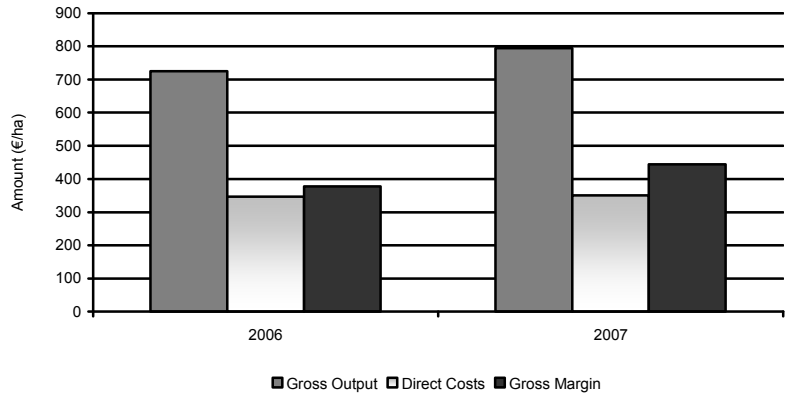
Table 4: Mid-Season Lamb Output, Costs and Margins (€/ewe)

	2005	2006	2007
Gross output	88	81	91
Direct Costs			
Concentrates	15.7	16.2	16.2
Winter forage	3.7	4.1	4.4
Pasture costs	6.9	7.6	7.7
Other direct costs	10.0	10.8	11.7
Total Direct Costs	36	39	40
Gross Margin	**52**	**42**	**51**
Weaning rate	1.33	1.25	1.34
Lamb Mortality	7.5	7.3	7.8
Ewe Mortality	4.5	5.1	4.6

Source: Teagasc National Farm Survey

Total direct costs per ewe were similar in 2006 and 2007 at €39/ewe and €40/ewe respectively. The main element contributing to the change in direct costs on mid-season lamb systems in 2007 was an increase in 'other' direct costs. Between 2006 and 2007, total overhead costs increased by almost 9% to €43.30 per ewe, resulting in net margins per ewe of €7.30 in 2007.

Figure 4: Mid Season Lamb: Output, Direct costs and Gross Margin per hectare (2006 – 2007)



Source: Teagasc National Farm Survey

For comparison purposes the average situation for all mid-season producers on a per hectare basis for 2006 and 2007 is shown in Figure 4. The average gross output in 2007 was €795 per hectare. Owing to the fact that direct costs remained relatively static between 2006 and 2007, and

because of higher lamb prices in 2007, a gross margin per hectare of €444 per hectare was earned in 2007. This gross margin represents an increase of over 17% on that earned in 2006.

The gross margin for the Hill-Blackface system was, on average, €4 per ewe for both 2005 and 2006 but increased to €6 in 2007 (see Table 3). Overhead costs for this system were estimated at €16.30 per ewe in 2007 (compared to €13.90 in 2006). The increase in overhead costs on the Hill-Blackface system in 2007 resulted in a negative net margin of €9.90.

Large difference in the profitability of sheep farms operating the mid-season lamb system continued to exist in 2007.What are the key factors that underlie the different levels of profitability across the mid-season lamb farms? In answering this question we have first categorised and grouped sheep farms on the basis of gross margin per hectare. Farms have been grouped into three equally sized categories, namely a top, middle and bottom group of farms. The average performance of these groups and the differences are then compared for output, direct costs and some simple measures of technical performance. The results are summarised in Table 5, and show that there are large differences in margins and technical performance between the three groups. The top group earned an average gross margin of €747 per hectare in 2007; farms in the bottom group earned an average gross margin of only €196 per hectare. This means that the top producers earned, on average, over 3.8 times more per hectare than their counterparts the bottom group.

Table 5: Mid-Season Lamb - Output, Costs, Margins and Technical Performance - 2007 (€/ha)

	Group			
	Bottom ⅓	**Middle ⅓**	**Top ⅓**	**All**
Output	564	787	1078	795
Direct costs	368	351	331	351
Gross margin	196	436	747	444
Ewe / ha	7.2	8.5	10.9	8.7
Lambing rate	1.37	1.49	1.50	1.46
Weaning rate /ewe	1.23	1.38	1.41	1.34
Lamb carcass kg/ha	164	217	284	216
Dir. Costs €/kg carcass	2.24	1.62	1.17	1.63

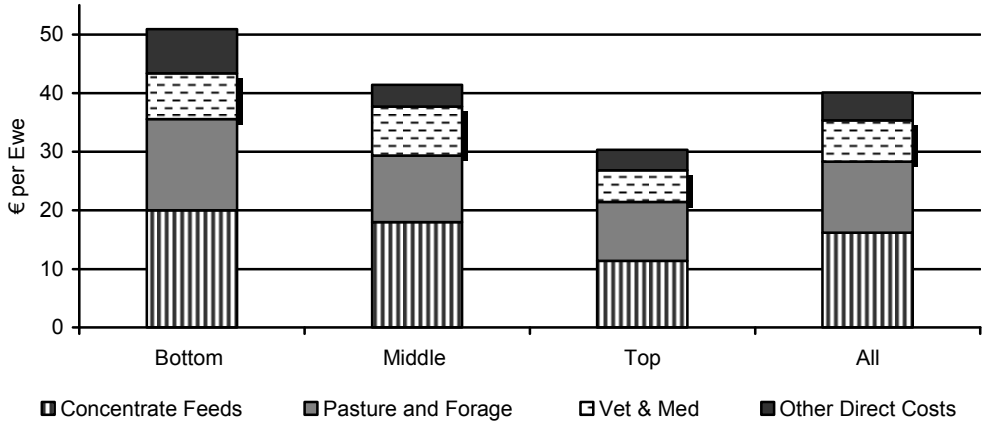
Source: Teagasc National Farm Survey 2007
Note: In calculating the volume of lamb carcass output per ha an average carcass weight of 18.5 kg has been used.

Improved technical performance is one of the keys to increased farm profitability, with a combination of high weaning rate and stocking rate essential in achieving higher returns. It was recommended in the Malone report (Malone, 2006) that a reasonable objective is the achievement of "…an output of at least 1.5 lambs sold/ewe let to ram". If this is used as a guideline then the top group of mid-season lamb producers in the NFS in 2007 are approaching but, on average, have not yet reached this target.

Sheep production in Ireland, like cattle production, is a low margin business, with lack of scale and low efficiency hindering long term viability. The family farm income (€32,075) earned on farms classified in the top third of mid-season sheep systems is considerably higher than the income earned on farms in the middle (€19,614) and bottom (€24,359) third groups.

The variation in direct costs per ewe among the top, middle and bottom groups also is very significant. When compared to the average, the bottom group would appear to have considerable scope for improvement in terms of their costs per unit of output, particularly with regard to concentrate, pasture and forage costs per ewe. The difference in direct costs between the bottom and top groups was €20 per ewe in 2007 (see Figure 5).

Figure 5: Mid- Season Lamb system 2007 - Variation in Total Direct Costs per Ewe across Top, Middle and Bottom Groups



Source: National Farm Survey Data

Sheep farmers managed to contain their costs in 2007, largely though reduced input usage, but if they are to be competitive in the future and provide viable returns for their labour and assets devoted to lamb

production then they need to contain or reduce costs further and improve technical performance while still producing lamb for the market.

3. Gross Margin Estimates for 2008

To obtain an estimate of farm profitability for the current year, 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. Possible future medium term developments in the sheep markets and prices were discussed earlier in the paper (section 2.4)

The sheep and lamb market in 2008 has been characterised by reduced supplies on the EU market, which, in the context of stable demand for lamb, has supported the Irish and EU lamb price.

Margins for the mid-season lamb system are estimated to have increased in 2008 as a result of stronger prices. Prices to date for 2008 are 4% higher than for the same period last year. Lamb prices reached a level of almost 422 cent per kg deadweight in mid June 2008, representing an increase of over 8% on the same period for 2007. It is forecast that prices will remain close to current levels for the remainder of 2008. The increased output value will be eroded by increased direct costs due to increased feed and fertiliser prices faced in 2008.

The main costs for sheep farms are purchased feed, winter forage and pasture costs. Purchased feed (concentrates) typically account for approximately 40% of total direct input expenditure on the average mid-season lowland lamb system. Concentrate feed prices increased considerably in 2007, but the mid season producers on average managed to contain their costs at the 2006 level by cutting down on the quantity fed. For the top third of producers (defined earlier) the concentrate cost actually declined by 14% per ewe between 2006 and 2007. Feed costs per ewe for 2008 are estimated to be marginally above 2007 levels. Although feed prices continued to increase in 2008, increasing by 14% on the level in 2007 it is expected that sheep farmers in 2008 will contain their feed bills by reducing the amount fed per ewe.

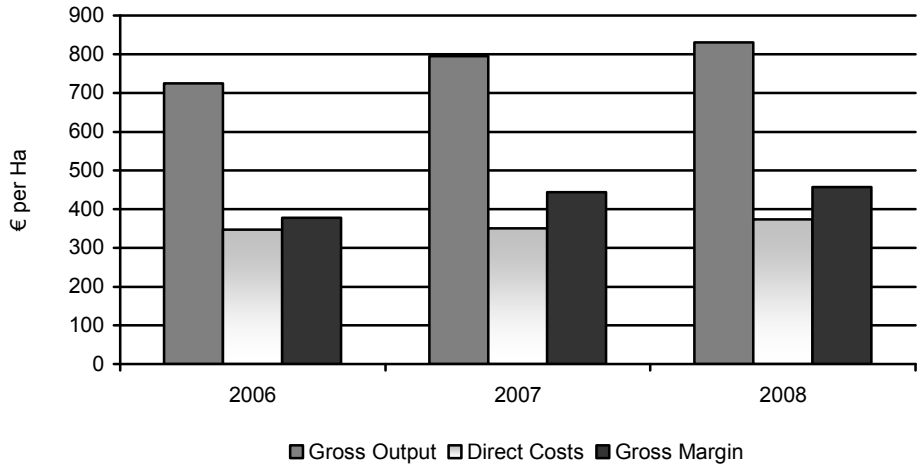
Pasture and forage costs typically comprise about 30% of total direct production costs on the mid-season lowland lamb system. It is estimated that fertiliser use volumes in 2008 have declined on sheep farms both as a result of the substantial increases in the prices of fertilisers and also due to the wet summer of 2008 that restricted spreading opportunities.

Gross output, direct costs and gross margins per hectare on the mid-season lamb system in 2006 and 2007 are shown together with the

estimated levels of these variables in Figure 6, estimates of the gross margin per ewe for the three sheep production systems are shown in Table 6.

When the cost increases estimated for 2008 are deducted from the estimated increases in gross output, it is estimated that average 2008 gross margin per hectare for the mid-season lowland lamb system will increase to just below €460.

Figure 6: Gross margin per hectare for Mid Season Lamb Production in 2006, 2007 and estimate for 2008



Source: National Farm Survey Data (2006 & 2007) and authors' estimates (2008)

Gross margin per ewe earned on the early-lamb system increased in 2007 to €55 per hectare from €46 per ewe in 2006. Due to increases in lamb prices in 2008 estimated margins for 2008 are estimated to have increased to €57 per ewe. The gross margin for Hill-Blackface system is estimated to have increased in 2008 to €7 per ewe.

Table 6: Gross Margin (€/ewe), 2005 – 2008

	2005*	2006	2007	2008[1]
Early Lamb	49	46	55	57
Mid-Season Lamb	52	42	51	53
Hill-Blackface	4	4	6	7

Source: National Farm Survey
*Post-decoupling carryover of direct payments included
[1]*Estimate*

4. *The Outlook for Sheep Enterprise Gross Margin in 2009*

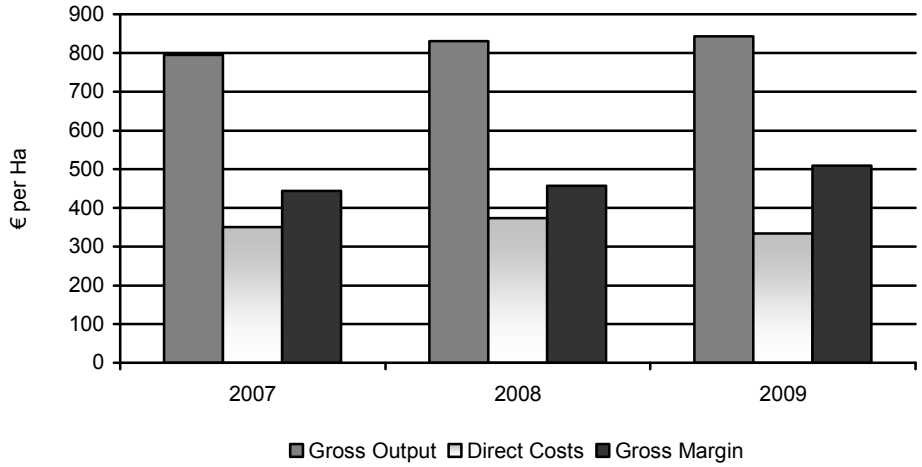
The forecast contraction of New Zealand lamb exports and the contraction in supplies of EU lamb coupled with stable EU demand for lamb suggest that the price of lamb on European markets in 2009 is likely to remain at or above that for 2008.

The outlook for input prices in 2009 appears more favourable than 2008; feed prices are forecast to fall by 20%, while fertiliser prices are also forecast to decline. Labour costs are forecast to increase by 2%, as low inflation will lead to more modest wage increases in the Irish economy. Fuel costs are forecast to decline by approximately 20%, which should mean that contractor costs will decrease. We have forecast that contractor costs will decline by approximately 10%, while other costs are forecast to increase by 2% in 2009.

Although input prices are set to decline in 2009 for most categories of inputs, sheep farmers are expected to increase fertiliser usage in 2009. The wet summer weather in 2008 combined with high fertiliser prices meant that fertiliser use was well below the levels of previous years. Concentrate feed volumes on sheep farms also declined during 2007 and 2008 owing to price increases. It is expected that farmers will increase concentrate feed purchases in 2009 compared with 2008.

The gross margin per ewe for mid-season lamb system in 2009 is forecast to increase to be €510 (€460 2008). This represents a gross margin of €58 per ewe in 2009. The gross output, direct costs and gross margins per hectare for the mid-season lamb system in 2007, 2008 and 2009 are shown in Figure 7.

Figure 7: Gross Margin for Mid Season Lamb Producers in Ireland in 2007, Estimated for 2008 and Forecast for 2009



Source: National Farm Survey Data (2007) and Authors' Estimates/Forecasts (2008/2009)

The average gross margins per ewe for the early lamb system is forecast to increase to €61 in 2009, this represents an increase of 7% on the estimated 2008 margin (see Tables 7). The gross margin for Hill-Blackface system is forecast to remain relatively stable or increase slightly for 2009 as a result of the price and cost forecasts discussed above.

Table 7: Gross Margin (€/ewe), 2005 – 2009

	2005*	2006	2007	2008[1]	2009[2]
Early Lamb	49	46	55	57	61
Mid-Season Lamb	52	42	51	53	58
Hill-Blackface	4	4	6	7	7

Source: Teagasc National Farm Survey
*Post-decoupling carryover of direct payments included
[1]Estimate, [2]Forecast

5. Concluding Comments

As always the bottom line for sheep farmers is the price of lamb relative to the costs of production. Despite increased input costs during 2007, the average gross margins per ewe earned on Irish sheep systems increased relative to those earned in 2006. Improved output prices and tight control of direct costs accounted for this outcome. The analysis of margins earned on

farms operating a mid-season lamb system shows the importance of high weaning rate and stocking rate in achieving improved returns.

The gross margin earned by lamb producers in 2008 are estimated to have increased as a result of stronger prices. It is estimated that prices will be higher in 2008 than in 2007. These higher prices are due to tighter supplies, but the increased output value will be partially eroded by increased direct costs.

For 2009 the margins are again forecast to increase as input prices for feed, fertiliser, fuel and contractors are all forecast to decline, while output prices are forecast to increase slightly due to reduced supplies of lamb on EU markets.

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Situation and Outlook Conference 2008/09

Pigs and Pig Meat

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1. Global Background

The world pig breeding herd is estimated at 80 million sows producing 110 m tonnes of pig meat per annum. World pig meat consumption is growing at 3% per annum. China produces and consumes about 50% (55m tonnes) of the world pork supply. A rapid increase in world sow numbers and pork supply from 1960 to 2006 was reversed in 2007 and is expected to decline further in 2008. This decline is attributed mainly to a major outbreak of a viral disease (Porcine Reproductive and Respiratory Syndrome) in China resulting in losses of over 20 million pigs followed by very severe weather conditions in the pork producing regions and by further serious losses due to the earthquake in Sichuan province.

Table 1: World Pig Meat Supplies Forecast 2008

Region/Country	Million Metric tonnes	% of Total
China	48.0	46
EU	21.9	21
United States	10.1	10
Brazil	3.1	3
Russian Federation	2.0	2
Canada	1.8	2
Others	17.0	16
Total	103.9	100

Source: USDA/FAS, OECD/FAO

World pig meat supplies have also been affected by the very substantial increase in feed ingredient prices attributable to the increased demand from the ethanol industry especially in the USA and a series of poor harvests in some of the main grain producing areas including Australia, Ukraine and EU.

Pork consumption has been growing rapidly in the Far East. World exports in 2008 are estimated to be 5.3 m tonnes or 5% of production. Pig meat exports are dominated by some major trade flows (Table 2).

Table 2: Main Pig Meat Trade Flows 2007 (000 tonnes)

From To	USA	EU	Brazil	Canada
Japan	482	261		264
Russia		303	325	
Mexico	253			
South Korea		258		
USA				948
Canada	172			
China			144	

Source: BPEX 2008

US exports of pig meat have grown rapidly in recent years from about 8% of production in 2003 to forecast 22-23% of production in 2008. There have been very substantial imports of live pigs both for rearing and for slaughter from Canada to US as the Canadian sow herd grew steadily for about 15 years until 2005. This herd has now declined by 204,000 sows or 12.6% to 1.416 million head from October 2006 to October 2008.

2. European Union

Feed Costs: Following the 2007 harvest pig feed prices escalated rapidly throughout the EU and this resulted in a serious loss of profitability (Table 3).

Table 3: Changes in Pig Feed Prices in Selected EU Countries June 2008 / Average 2006

Country	Average Composite Pig Feed Price € per tonne		
	2006	June 2008	Increase
Belgium	189	281	92
Denmark	184	284	100
France	171	273	102
Germany	164	280	116
Great Britain	187	291	104
Netherlands	177	274	97
Spain	207	288	81
Ireland	217	306	89

Source: InterPig Group

Pig Prices: These increases in feed prices were not matched by an immediate and corresponding increase in pig prices. In the second and especially the third quarter of 2008 EU pig prices increased significantly (Table 4).

Table 4: Average EU Pig Prices 2007-8 (c per kg)

Year	2007	2008
Quarter		
1	129.1	135.5
2	133.8	153.8
3	145.7	171.6
4	133.9	158.3*

** 6 weeks only*
Source: EU Pig Meat and Representative Prices

The recent economic upheaval has affected pig meat prices throughout the EU. Pig meat prices fell sharply from mid September (174.2c per kg) and reached 147.1c per kg in the second week of November 2008.

Production: The inevitable consequence of a huge increase in pig feed costs in the absence of a corresponding increase in slaughter pig prices is a very substantial reduction in sow numbers.

Table 5: Changes in Sow Numbers in EU and selected EU Countries 2007/2006 (000 head)

	December 2006	December 2007	Change %
EU – 27	13,828	13,386	-3.2
Of which			
Spain	2,469	2,489	1.0
Germany	2,172	2,132	-1.8
Poland	1,729	1,529	-11.2
Denmark	1,146	1,090	-4.9
France	1,132	1,106	-2.3
Netherlands	920	920	0
Italy	699	691	-1.1
Belgium	521	518	-0.6
Hungary	338	305	-9.8
United Kingdom	449	453	0.9
Romania	425	414	-2.6
Czech Republic	266	232	-12.8

Source: Eurostat

Given that pig feed prices did not begin to increase until the autumn of 2007 the impact on the December 2007 pig census would have been limited. Other factors were contributors to the decline in the newer member states such as Poland and Hungary including herd restructuring and the end to subsidised feed.

More recent data from the member states reveal more fully the decline in sow numbers

Table 6: Changes in Sow Numbers in EU and selected EU Countries 2008/2007 (000 head)

	Census	2007	2008	Change %
Spain	April	2530	2306	-8.8
Germany	May-June	2228	2116	-5.0
Poland	April	1692	1362	-19.5
Denmark	October	1145	1089	-4.9
France	May-June	1122	1084	-3.4
Netherlands	April	965	920	-4.7

Source: Eurostat

Sow numbers in the member states for which mid-year results are available account for 73 per cent of total EU numbers, and will therefore have a considerable influence on overall EU results. It is estimated that the total EU breeding herd in June 2008 was nine per cent smaller than in June 2007.

As a result of the decline in sow numbers EU supplies of finished pigs will decrease by 1.4% in Quarter 3 and by 4.7% in Quarter 4 of 2008. This trend is forecast to continue into 2009 with supplies forecast to decline 4.5% in Quarter1 and 2.95 in quarter 2 compared with 2008.

Consumption: Pig meat consumption in the EU-27 averaged 41.8 kg in 2007(Gira). This represents a 12 % increase in the 10 years from 1997. The increase for the EU-15 over the same period was a more modest 3.7%. Pig meat consumption in the EU-27 at 41.8 kg is greater than the consumption of beef and poultry meat combined (39.6 kg).

Exports: EU pig meat exports in 2007 amounted to 1.889 million tonnes with Russia being the main market.

Table 7: EU Exports of Pig Meat 2007

Exports to	Tonnes (000)	%
Russia	637	34
Hong Kong	240	13
Japan	232	12
South Korea	137	7
Others	643	34
Total	1889	100

Source : Statistics 2007, Danske Slagterier

The total exports of pig meat from the EU-27 in 2007 were exactly the same as the exports of live pigs and pig meat to EU and third countries fro0m Denmark. This underlines the importance of Denmark in both the EU and world pig meat market.

3. Ireland

Feed Costs: From July 2007 to June 2008 inclusive, the margin over the cost of purchased compound feed per kg carcass weight was less than the 45c required to meet the non feed costs (Teagasc PigSys Report 2006).

Table 8: Pig prices, Feed Costs and Margin over Feed per kg dead (July 2007 –June 2008)

Month	Average Finisher Pig Price c	Average Feed Cost per kg c	Margin over feed per kg
July	136	93	43
August	139	44	44
September	145	104	41
October	146	110	36
November	143	111	32
December	138	111	27
January	137	114	23
February	137	115	23
March	137	115	25
April	140	116	30
May	146	116	34
June	150	116	41
Average	143	110	33

Source: Teagasc National Monitoring of Prices and Margins in Pig Production

Based on an average slaughter weight of 75kg dead and on an annual production of 3.15 million pigs per annum this amounts to a shortfall of €28.35million in that 12 month period. From July 2008 pig producers had returned to profitability first as a result of increased pig prices and later as a result of reductions in feed costs. Falling pig prices throughout the EU in October and early November are attributed to reduced demand for pig meat not unrelated to the general economic climate. Export problems meant increased supplies on the EU market and this appears to have been aggravated by reduced demand.

Table 9: Pig prices, Feed Costs and Margin over Feed per kg dead (August – October 2008)

Month 2008	Average Finisher Pig Price c	Average Feed Cost per kg c	Margin over feed per kg
July	162	116	46
August	169	116	53
September	167	112	54
October	160	110	50
Average	165	114	51

Source: Teagasc National Monitoring of Prices and Margins in Pig Production

Production: Sow numbers in the Republic of Ireland have been in steady decline for the last decade from a peak of 174,770 in December 1997 (Table 10).

Table 10: Sow and Served Gilt Numbers in the Republic of Ireland 1998-2007 (December census)

Year	Number of Sows and Served Gilts
1997	174.7
1998	170.3
1999	170.7
2000	166.6
2001	169.3
2002	165.1
2003	158.2
2004	157.9
2005	155.9
2006	148.6
2007	142.8

Source: Central Statistics Office

The size of the breeding herd in December 2006 at 148,600 is lower than the 153,000 reported by Teagasc Pig Development Unit in their biennial survey of units in January 2007. It is estimated that the breeding herd is currently about 147,500 sows and served gilts and is a reduction of 5500 sows or 3.6% since January 2007.

Productivity: One key efficiency factor, but not the only one, is the number of pigs produced per sow per year. Analysis of pig disposals and stock numbers for the 5 years 2003-7 indicate that the average number of pigs produced per sow per year is 20.89 (Table 11).

Table 11: Estimated Number of Pigs Produced per Sow per Year 2003-2007

Average Herd Size	151,500
Opening Stocks Dec 2002	1,796,000
Slaughterings 2003-7	13,388,000
Live Exports 2003-7	2,659,000
Closing Stocks Dec 2007	1,574.600
Total Production	16,047,000
Number of Pigs Produced per Sow per Year	20.89

Source: From CSO data

This is significantly lower than the 21.9 pigs produced on PigSys recorded herds over the same period (Table 12)

Table 12: Sow Productivity in PigSys Recorded Herds 2003-2007

Year	Number of Sows	Number of Pigs Produced per Sow per Year
2003	45550	21.8
2004	54990	21.9
2005	47430	21.9
2006	46125	22.2
2007	52689	22.5
Average 2003-7	49357	22.07

Source: Teagasc Pig Development Unit PigSys Report 2007

This data indicates that the number of pigs produced per sow per year in herds not recorded in PigSys is only 20.32 – a difference of 1.75 pigs per sow per year.

Pig Slaughterings: In view of the significant number of live pigs exported for slaughter in Northern Ireland it is only reasonable to consider pig slaughterings on an all-island basis (Table 13).

Table 13: Pig slaughterings in Republic and Northern Ireland 2006-2008 (39 weeks)

Year	2006	2007	2008
Republic	1,974,804	1,945,132	1,911,740
Northern Ireland	891,761	959,487	963,183
Total	2,866,565	2904619	2,874,923

Source: Bord Bia Market Monitor and DARDNI

The reduction in pig kill in the first 39 weeks of 2008 has been just 1% compared to the same period in 2007. The average pig kill per week in

2008 has been 73,715 and in the 3 months to end of September this was only slightly lower at 73,361 pigs per week

Pig Prices: The price paid to producers per kg dead weight increased gradually from March (137c) until reaching a peak of 169c in August before falling by about to 24c by mid November. This reduction broadly corresponds with the decline in EU prices in the same period.

Price Prospects: As a result of the current global financial problems there is significant uncertainty in relation to pig prices despite the reduced supply of pig meat in the EU and on a world basis. A return to normal trading in pig meat would be expected to result in improved pig prices to producers.

Feed Price Prospects: Pig feed ingredient prices have declined very significantly compared with the autumn of 2007. Cereal prices in Ireland, Britain and France are considerably reduced (Table 14)

Table 14: Cereal Prices in Britain and France 2007 and 2008 (€ per tonne)

	Week 40, 2008	Week 40, 2007
Britain (HGCA)		
Wheat	103	239
Barley	100	226
France (IFIP)		
Wheat	155	260
Barley	141	258
Maize	142	227

HGCA: Home Grown Cereals Authority
IFIP: Institut Filiere du Porc

While soyabean meal prices have also been very high these have also fallen significantly in recent months to about €300 per tonne.

While pig producers manufacturing their feed from purchased ingredients are likely to have benefited from these feed ingredient price reductions immediately, purchasers of compound feed which represents about 70% of all pig feed used have seen feed prices decline less dramatically. The average composite price of purchased compound fed peaked at €302 per tonne in April - June 2008 and had reduced to €286 by October 2008. Increases in the cost of mineral/vitamin supplements due the very large increases in the cost of components such as Phosphorus and Vitamin E do not fully explain the absence of a greater reduction in feed prices. There is

a reasonable expectation that pig feed prices will decline significantly by the end of the year.

The longer term prospects for feed prices is closely linked to the approval of GM varieties of both soyabeans and maize and is currently an issue of concern (Lawlor 2008)

The higher average composite pig feed price in Ireland relative to other EU countries poses an ongoing challenge to the sector if it is to be competitive with that in the key pig meat-exporting countries within the EU including Denmark and the Netherlands. This higher average composite price is due only in part to the higher average price per tonne in Ireland.

Non-Feed Costs: In 2007 the average non-feed cost per kg dead weight in PigSys recorded herds was 46.3c. These may well underestimate actual average costs since the better managed and better performing herds tend to be the better herds to record. Some herds will certainly have higher non-feed costs.

Non-feed costs increase in line with inflation but certain non-feed costs will increase above the rate of inflation over the next 3-5 years. Manure handling costs are likely to be considerably higher when the full restrictions of the Nitrates Regulations come into force from 2011. The extent of this increase will depend on to what extent customer farmers share the cost of transporting and applying pig manure as a fertilizer. From 2013 there is a requirement that sows be loose housed from 4 weeks after mating until one week before the expected farrowing date. On many units complying with this regulation will require substantial capital investment in the next few years.

Interest and depreciation charges are considered to be low (8.4c per kg dead weight) but this merely reflects a lack of recent substantial capital investment in units and is not sustainable long term.

Summary

Pig producers in Ireland as in other EU countries have incurred very substantial losses since June of 2007. The failure of the expected improvement in profitability from July 2008 to be sustained is in danger of causing serious damage. Only a sustained period of profitability will enable the industry to recover.

Situation and Outlook for Tillage Farms 2008/2009

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1. Introduction

The 2008 harvest year has been an extremely difficult one for the tillage farming sector both in Ireland and internationally. After the unprecedented highs experienced for cereal prices at harvest 2007 the following twelve months have witnessed a number of factors, economic, political and weather related, which have resulted in a significant cost price squeeze for tillage farmers.

The unprecedented high cereal prices which were recorded at harvest 2007 originated from a number of sources. An increasing political focus on the climate change issue, resulted in an epidemic of 'biofuel friendly' policies across the world, most notably in the US. In key exporting countries this led to a shift of cereals out of food and feed use and into fuel production, which in no small way contributed to the rise in prices. Furthermore, the end of year grain stocks recorded on international balance sheets for a number of years has shown a steady erosion of stock levels which has emanated from increasing demand for cereal products due to population growth and consequent consumption growth. Countries which traditionally held significant stocks no longer have the capacity to release large volumes of product onto world markets to stabilise prices. Furthermore, the 2007 harvest price was also heavily influenced by the drought in Australia and the fall in the financial equity markets and a consequent increased speculative interest in agri markets.

Unfortunately for Irish and international cereal farmers the high cereal price experienced in 2007 was short lived and the 2008 harvest price in Ireland was down on average 35 per cent on 2007 levels. This sharp drop in prices can be attributed to an increase in cereal area, record yields for the 2008 harvest and the general uncertainty experienced in international financial markets due to the global down turn in the economy. This sharp decrease in price, coupled with high moisture levels recorded at harvest has had a significant effect on the farm gate value of cereal products in Ireland in 2008.

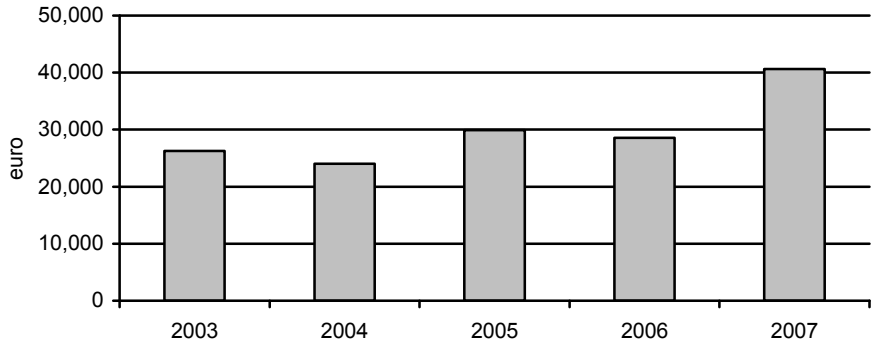
In addition to decreases in output value, Irish cereal farmers have also experienced an unprecedented price increase in key inputs, such as fertiliser, seed and fuel.

This paper will consider whether the price decreases of the 2008 harvest represents an atypical occurrence or whether this experience will continue into the 2009 harvest. The costs of production on tillage farms in Ireland will also be considered to arrive at an estimate of tillage enterprise profit for 2008 and a forecast for 2009. This paper uses Irish National Farm Survey (NFS) data (Connolly *et al* 2008) to conduct a review of the financial performance of tillage farms in 2007. Following this, price and costs are estimated for 2008 to produce an estimate of profit for the current year. In the concluding sections of the paper, the outlook for 2009 is presented.

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

Income on specialist tillage farms increased significantly in 2007 compared to the previous four years as shown in Figure 1 below. Relatively high cereal yields coupled with significantly higher farm gate cereal prices resulted in an average family farm income (FFI) in 2007 of just over €40,000 which is equivalent to a 50% increase on the average of the previous four years.

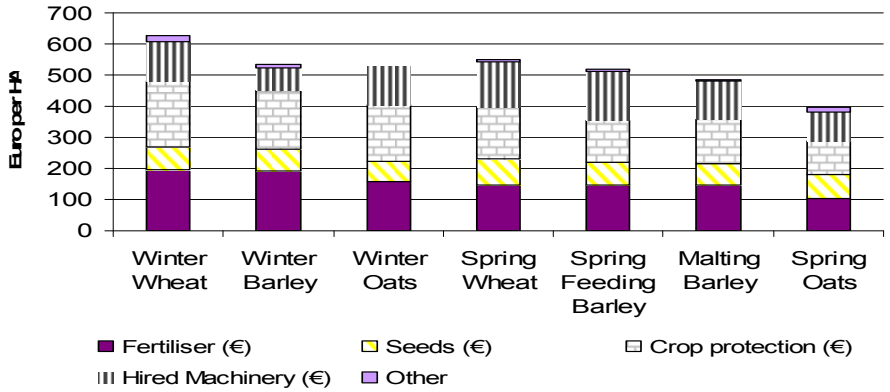
Figure 1: FFI on Specialist Tillage Farms in Ireland: 2003 to 2007



Source: National Farm Survey (various years)

To understand the economic performance of tillage farms in 2007 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 2007.

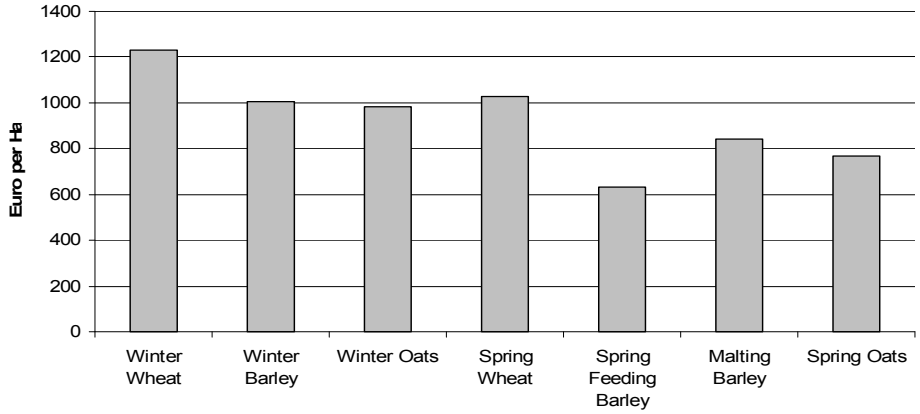
Figure 2: Composition of Direct Costs for Cereal Crops, 2007



Source: National Farm Survey (2007)

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 Margin for Cereal Crops, 2007

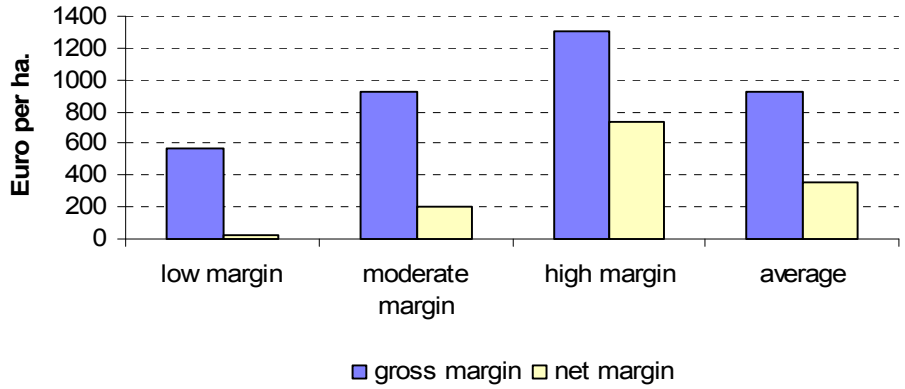


Source: National Farm Survey (2007)

Figure 3 shows that the average gross margin for all winter crops is generally higher than the gross margin for spring sown crops, with winter wheat recording the highest margin of all crops. The gross margin for all cereal crops was significantly higher in 2007 compared to the average of the previous 5 years. The gross margin for winter wheat and spring barley

in 2007 was 75 per cent and 55 per cent higher 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 using NFS data. For this reason, net margin of the entire cereal enterprise of the specialist tillage farming population within the NFS is examined, shown in Figure 4 below.

Figure 4: Cereal Enterprise Margins on specialist tillage farms, 2007



Source: National Farm Survey (2007)

Figure 4 shows that the average gross and net margin per cereal enterprise on specialist tillage farms in 2007 was approximately €900 and €350 per hectare respectively. To examine the variation in margin that exists on tillage farms, the weighted sample 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 2007 was €730 per hectare compared to €200 on moderate margin farms and just under €20 per hectare on low margin farms.

2.1 What are the Factors Affecting Farm Profitability?

The data presented thus far in the paper shows that there are very large differences in margins on Irish tillage farms. In this section of the paper we examine some of the factors affecting farm profitability which farmers themselves could potentially have control over. The productivity of Irish tillage farmers is examined in this econometric analysis given that

productivity is the main source of competitiveness over the medium to longer term upon which farmers potentially have control over.

This analysis of the productivity of Irish tillage farms employed an economic tool called Stochastic Frontier Analysis (SFA) for the construction of an index of Total Factor Productivity (TFP), using National Farm Survey data from 1996 to 2006. An index of TFP measures productivity growth taking into account the relationship between the change in output and the change in the use of all inputs. This measure of productivity growth differs from traditional 'partial' productivity indicators common in the literature, which compare output to a single input such as land, labour or animal numbers (for example, milk yields per cow or crop yields per hectare).One of the main sources of productivity change over time is technical efficiency and the TFP index over the time period is examined to determine why some farmers are more efficient than others.

In general, the results from the analysis have shown that technical efficiency is positively correlated with extension use, soil quality, the overall size of the farm, and the level of specialisation.

The coefficient for off-farm employment was not significant and therefore implies that farms with an off-farm job are no less efficient than farms without. This result highlights the need for farmers to critically analyse their on-farm time management to explore the viability of pursuing part-time employment outside of the farm.

The importance of the scale of operations is of particular interest. The analysis showed that increasing returns to scale are present in the tillage sector. This result shows that larger farms are more efficient.

The degree of specialisation will also be an important issue for the competitive future of Irish farming. Higher levels of specialisation lead to higher efficiency levels in the tillage sector.

3. Estimated Review of 2008 Performance

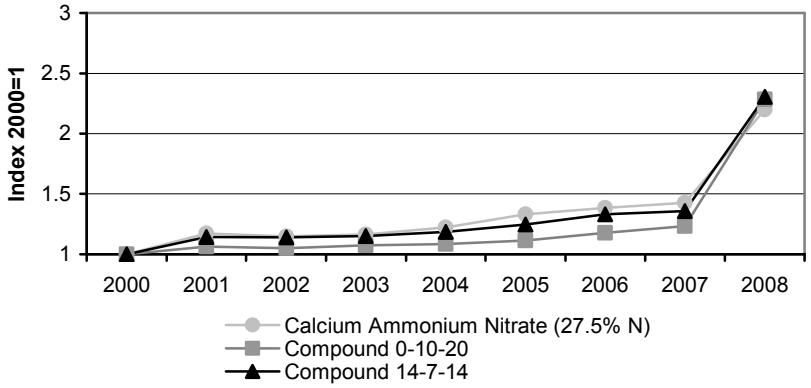
This section of the paper presents a review of the cereal sector in 2008. To provide an estimate of enterprise profitability for the current year, it is necessary to estimate the volume and price of inputs that are likely to have been used as well the volume and value of outputs. The ensuing sections of the paper discuss first, the movements in input prices and usage in the current year and second, the cereal market conditions, harvest yields, and production in 2008.

3.1 Estimated Input Usage and Price 2008

3.1.1 Fertiliser

Fertiliser costs typically comprise about 27 percent of direct costs and 13 per cent of total costs on tillage farms. 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. The CSO recorded price in 2008 for CAN was approximately 120 percent higher than 2000 levels and for the compounds 0-10-20 and 14-7-14 the equivalent price in 2008 was approximately 130 per cent higher than the level in 2000. Increased energy prices, in particular the price of natural gas which is a key determinant of fertiliser price, has been the major driving force behind the upward trend for fertiliser prices throughout the early 2000s. In addition, in the past twelve months the shortage of supply of P and K compounds and the limited resources for future supply has had a significant upward effect on compound fertiliser prices. Given that significant upward pressure on fertiliser prices was evident during 2008, it is estimated that straight nitrogen products will have increased by approximately 55 per cent over 2007 figures, whilst the increase for compound fertilisers with significant P and K components is estimated to be up between 70 and 85 per cent on 2007 prices.

Figure 5: Price Index of Straight Fertilisers 2000 to 2008



Source: Central Statistics Office Data for 2000 to 2007. Authors' estimates for 2008.

On the usage side, DAFF figures indicate that fertiliser purchases in the 2008 fertiliser year (October 2007/September 2008) have declined in aggregate by about 6 percent relative to the corresponding 2007 level. Given that this figure refers to all fertiliser usage on grassland and crop area it was necessary to consult reports from farm advisors to evaluate the usage change for crop farms. Reports from a number of sources seem to

indicate that fertiliser usage per hectare is down approximately 10% on 2007 levels. However, overall usage on crop farms may not be suggestive of this decrease given the increase in crop area between 2007 and 2008. However in gross margin per hectare terms it is assumed that for 2008 usage is down approximately 10 per cent. The reduction in fertiliser purchases reflects the considerable cost pressure on tillage farms as a result of the fertiliser price increase. Furthermore additional soil analyses were carried out during the year and as a result less fertiliser applied. The minor reduction in fertiliser usage on crop farms is not estimated to offset the significant increase in fertiliser prices leaving overall expenditure per hectare on fertiliser significantly up on 2007 levels.

3.1.2 Seed

Purchased seed on crop farms is a less important input in expenditure terms in cereal production, comprising between 10 and 15 per cent of direct costs for cereal production and just over 11 per cent on average on all tillage farms in 2007. In terms of the composition of total costs, seed represented just over 6 per cent of total costs in 2007. In 2008 cereal farmers experienced a significant increase in seed costs relative to previous years due to the significant upward movement in the cereal markets. In autumn 2007 when seed supplies were purchased for the 2008 harvested winter crops, blue label seed cost increased by approximately 35 per cent, from €410 per tonne in 2006 to €550 per tonne in 2007. This cost increase was also evident in 2008 for spring sown crops relative to the 2007 sown spring crops. The magnitude of this figure is similar to the seed price index provided by the CSO. Given that there is very limited scope for home saving seed in direct reaction to sudden price movements in purchased seed price, the expenditure on seed in 2008 relative to 2007 is estimated to have increased by 35 per cent.

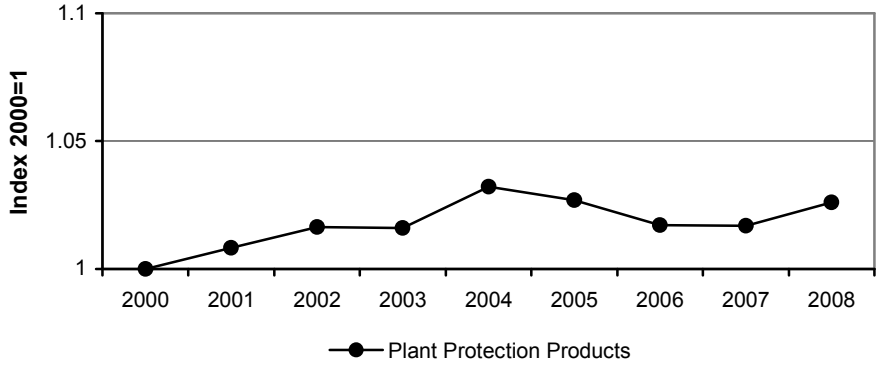
3.1.3 Crop Protection

The expenditure on crop protection by specialist tillage farms in 2007 accounted for 20 per cent of direct costs and 10 per cent 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 2007, crop protection costs accounted for 33 per cent of direct costs, compared to of 20 per cent 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 2008 was just under 3 per cent and the increase in costs between 2007 and 2008 was just

under 1 per cent. Volume changes between 2007 and 2008 are estimated to be negligible.

Figure 6: Price Index of Plant Protection products 2000 - 2008



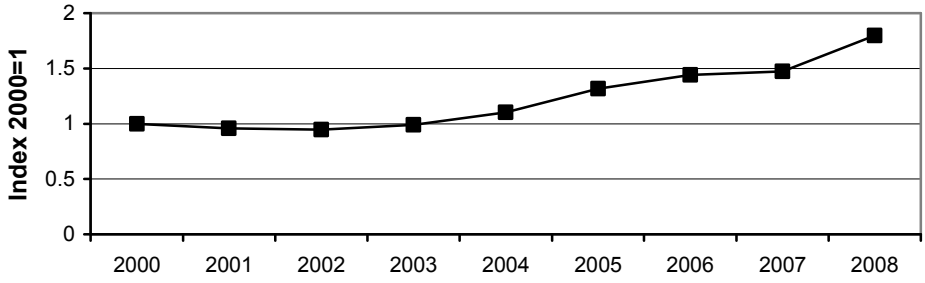
Source: Central Statistics Office Data for 2000 to 2007. Author's estimates for 2008.

3.1.4 Energy and Fuel

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 from direct costs and machinery operating expenses from overhead costs are directly influenced by energy inflation. These cost items represented just under 25 per cent of total costs on tillage farms in 2007.

Based on the CSO estimates presented in Figure 7 below the price of fuel has increased by just under 80 per cent between 2000 and 2008. The most significant increase occurred between 2007 and 2008 when the estimated rise in the cost of fuel was 22 per cent. This estimation is based on a comparison of the motor fuel index from the CSO for 2007 and the first eight months of 2008. While it is acknowledged that fuel prices have begun to decrease in recent months this decrease will not benefit the direct cost structure on crop farms given that the majority of the fuel costs occur in the first eight months of the year in which the crop is harvested. Demand for these input items tends to be relatively inelastic with respect to price and therefore it is assumed that usage in 2008 will be on a par with the 2007 level. Overall expenditure on fuel related items is likely to be 22 per cent higher in 2008 relative to 2007.

Figure 7: Price Index of Fuel products 2000 - 2008



Source: Central Statistics Office Data for 2000 to 2007. Author's estimates for 2008.

3.1.5 All other direct and overhead costs

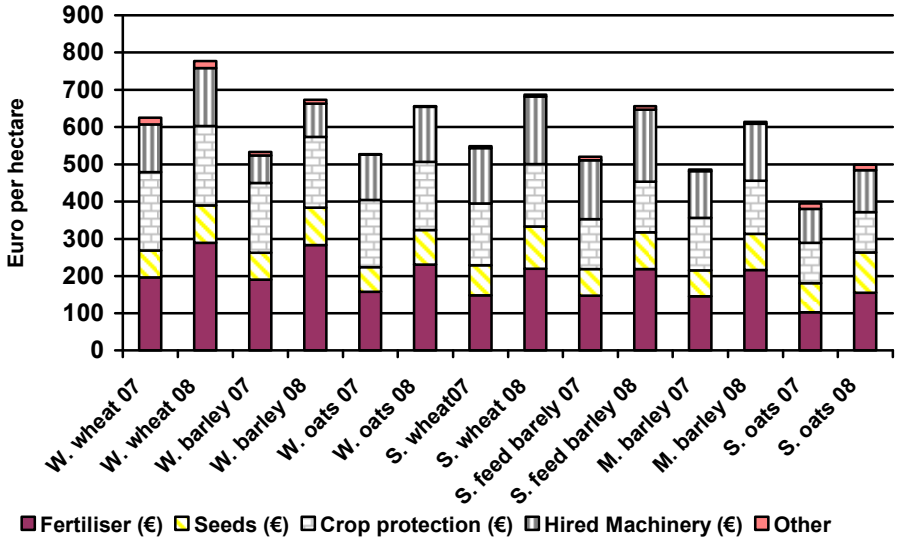
CSO estimates indicate that labour costs and agricultural 'other costs' have increased by approximately 6 percent in 2008 relative to 2007.

The average cost of land rent in 2007 on specialist tillage farms was just under 8 per cent of total costs. Given that farm gate cereal prices increased significantly in 2007 there was a consequent increase in land rental prices. It is estimated that land rental prices increased by approximately 30 per cent in 2008 relative to 2007.

3.1.6 Estimate of Total Input expenditure for 2008

Total expenditure on all input items is estimated to have increased in 2008 relative to 2007. The most significant increase in expenditure occurred with fertiliser, which is estimated to increase by approximately 50 per cent between 2007 and 2008, taking into account estimated volume and value changes. On average, the increase in direct costs was approximately 25 per cent.

Figure 8: Direct Costs on Cereal Production in Ireland 2007 and Estimated for 2008



Source: National Farm Survey Data (2007) and Author's Estimates (2008)

3.2 Estimated Output Values 2008

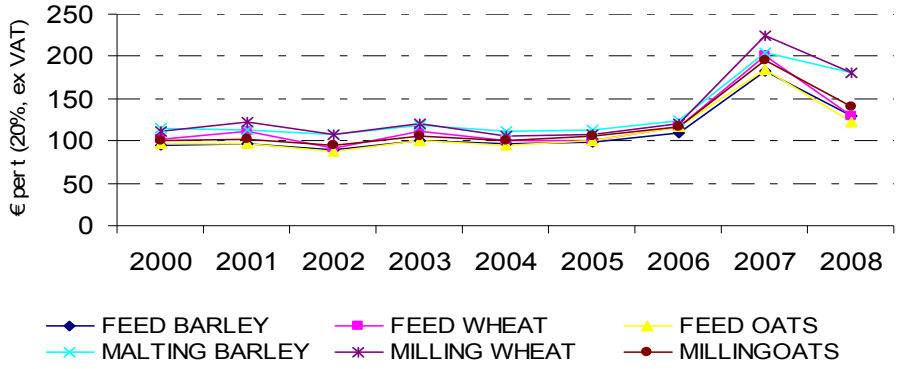
3.2.1 Price, yield and moisture levels in 2008

Unprecedented volatility has been witnessed in cereal prices in Ireland in the past two years, with prices reaching an unprecedented high in nominal terms in 2007, and a significant drop in prices in 2008. Figure 9 below shows that farm gate feed wheat, barley and oat prices at 20 per cent moisture were down between 30 and 35 per cent in 2008 relative to 2007. Malting barley prices in 2008 did not suffer to the same extent as some other crops, with prices down 12 per cent relative to 2007. Milling wheat and oat prices were down 20 and 30 per cent respectively on 2007 prices.

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 2008 which was relatively poor. Table 1 below shows that the average moisture for spring crops was well in excess of that recorded in 2007; average moisture for spring barley and wheat was 5 points higher, and spring oats 4 points higher in 2008 relative to 2007. Winter wheat and oats were harvested at average moistures in 2008 similar to those recorded in 2007, while winter barley average moisture levels were just 1 per cent up on 2007 levels. It is however important to note that while the winter crops

were harvested at similar moistures in the last two years, these levels are still significantly higher than those recorded in the recent past.

Figure 9: Farm Gate Cereal Prices, 20% Moisture, exVAT, 2000-2008



Source: Author's own estimates

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 2007 and 2008. In general sowing conditions for winter and spring crops were relatively good for the 2008 harvested crop and weather conditions during the growing season were also favourable. Hence, most crops yields in 2008 were in excess of those recorded in 2007 on 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, 2007 – 2008 Harvest

	Yield (tonne per ha.)		Moisture (%)	
	2007	2008	2007	2008
Winter Wheat	8.7	9.8	22	22
Winter Barley	7.6	8.3	18	19
Winter Oats	8.1	8.0	20	20
Spring Wheat	7.7	6.7	17	22
Spring Barley	6.6	6.7	17	22
Spring Oats	6.4	6.1	17	21

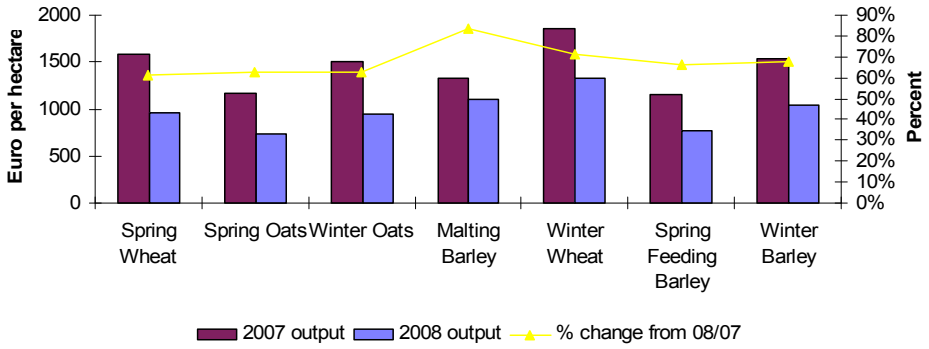
Source: CSO 2007 & Teagasc Harvest Report (2008)

3.2.2 Estimate of Total Output Value for 2008

Total output value per hectare for all cereal crops is estimated to have decreased in 2008 relative to 2007. The most significant decrease in output value per hectare was experienced in winter oats and the crop which experienced the least decline in output value was malting barley, taking into

account price, yield and moisture levels. The average decline in output value per hectare in 2008 relative to 2007 was 30 per cent.

Figure 10: Actual Gross Output per Hectare 2007 & Estimated Gross Output per Hectare 2008

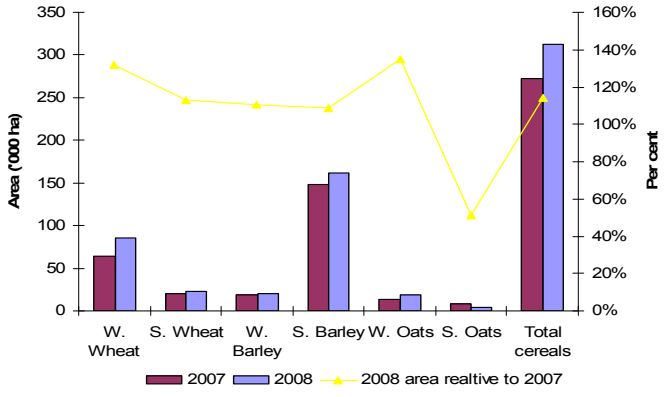


(Source: National Farm Survey (2008) and Author's own estimates)

3.2.3 Estimate of Total Production 2008

The figures presented in section 3.2.2 illustrate output value per hectare. However these estimates do not take into consideration the increase in area devoted to cereal crops in 2008 as a result of the abolition of setaside and the reaction to the high farm gate cereal prices in 2007. Figure 11 shows the area estimates for 2008 based on Single Farm Payment (SFP) returns compared to CSO estimates of area for 2007.

Figure 11: Change in Irish Crop Area from 2006/07 to 2007/08 crop year in Ireland



Source: CSO and Teagasc Harvest Report (2008)

Figure 11 shows that the total area devoted to cereal production increased by 15 per cent in the 2007/08 crop year compared to the 2006/07 crop year. The largest increase in area was witnessed in wheat, where total area devoted to wheat increased by 28 per cent year on year. Total barley area increased by 9 per cent and oats increased by 12 per cent year on year. The only crop which recorded a decrease in area was Spring oats.

Table 2 combines actual total cereal production for 2007 as reported by the CSO with estimated total cereal production for 2008. The estimated 2008 production of wheat, barley and oats is based on 2008 yield estimates from the Teagasc harvest report and SFP return statistics for the 2008 area planted. The estimated production levels of all three crops for 2008 are up on their 2007 levels. The estimated wheat production is up 41 per cent on the 2007 level. While winter wheat yield was up in 2008 relative to 2007 the increase in wheat production was due largely due to the significant increase in wheat area estimated for 2008. As already discussed, estimated yields for barley and oats were higher than 2007 levels, with the exception of spring oats. This yield change coupled with an increase in area for barley and oats, with the exception again for spring oats, results in an estimated 11 per cent increase in barley production and 17 per cent increase in oats production for 2008 relative to 2007. Overall cereal production is estimated to be up 438,000 tonnes or 22 per cent on 2007 levels.

Table 2: Actual and Estimated Cereal Production 2007 and 2008 (000 Tonnes)

	2007	2008	%Change
Wheat	713.4	982	+38
Barley	1,124.5	1,262	+12
Oats	159.1	171	+7
Total	1,977	2,415	+22

(Source: CSO and Teagasc Harvest Report 2008)

3.2.4 International Production Estimates for 2008

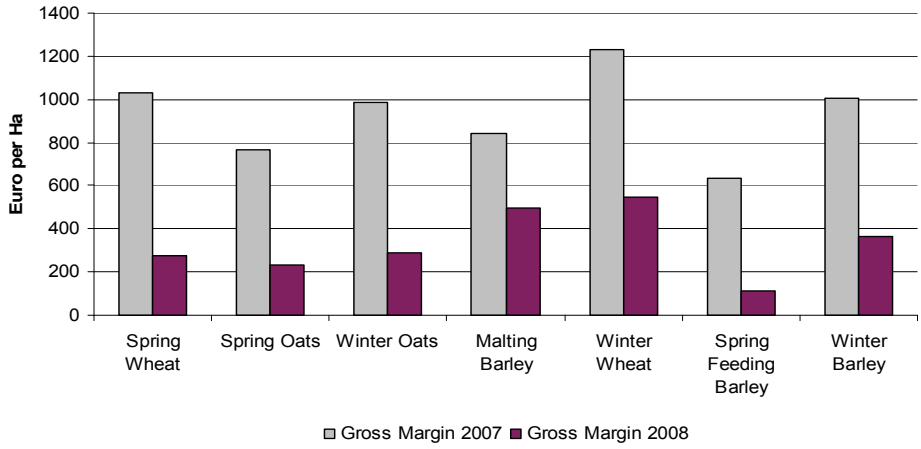
While production estimates for Irish cereals are important from a national supply, demand and balance sheet perspective, it is primarily developments in the international balance sheet for cereals that affects price development. For this reason a review of the international end stocks for cereals is more informative when price developments to the end of the market year is the unit of concern, which is the issue of concern for many grain traders at present. The latest edition of Strategie Grains (November 2008) estimates that the total production of cereals within the EU for the marketing year 2008/09 is 310.4 million tonnes, which compares to 256.2 million tonnes for the 2007/08 marketing year. This volume increase represents a 21 per cent in total EU production, which is of a similar magnitude to the increase in

Irish cereal production. The IGC estimates (Straregie Grains, November 2008) a similar situation for world cereal production in the 2008/09 marketing year relative to 2007/08. The estimates for world production of wheat and barley for 2008/09 relative to 2007/08 are for a 12 pre cent and 16 per cent increase in production respectively. Carry out stocks compared to carry in stocks in 2008/09 are estimated to be up 21 per cent for wheat and 13 per cent for barley.

3.3 Review of Tillage Enterprise Margins in 2008

The review of cereal output value showed that the average farm gate price received by farmers across all cereal crops was approximately 30 per cent lower than the average price in 2007, while the review of input costs concluded that total direct costs would be approximately 25 percent higher in 2008 than 2007. Figure 12 presents the effect on gross margin for each of the main cereal crops.

Figure 12: Actual Gross Margin in 2007 & Estimated Gross Margin for 2008 for each of the Main Cereal Crops



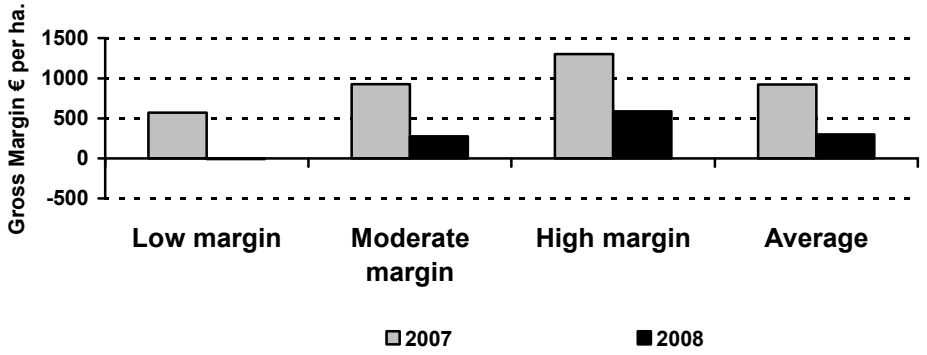
Source: National Farm Survey (2008) and Author's Own Estimates for 2008

Figure 12 shows a significant decline in gross margin for all cereal crops in 2008 relative to 2007 due to the reduction in output value coupled with the estimated increase in direct costs. For example, the gross margin for winter wheat is estimated to be down by approximately €680 per hectare, while the gross margin for spring barley is estimated to be down by approximately €530 per hectare. 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 in 2007 earlier in the paper, the estimated gross and net margins for 2008, are presented for the cereal enterprise on specialist tillage farms, as well as the population disaggregated into one-third groupings based on margins obtained.

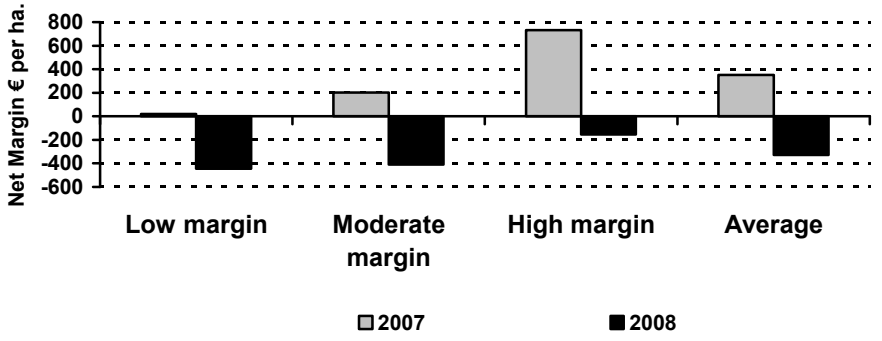
Figures 13 and 14 show the cereal enterprise gross and net margin estimates for 2008 relative to 2007, for the average of the specialist tillage farming population, in addition to the margins for the disaggregated population. For the average farmer, gross margin per hectare is estimated to decrease from €925 per hectare in 2007 to €295 per hectare in 2008, a 68 per cent decrease. The high margin farmer experienced the largest decrease in gross margin, moving from a gross margin of €1,300 per hectare in 2007 to a gross margin of €590 per hectare in 2008.

Figure 13: Actual Gross Margin 2007 and Estimated Gross Margin for 2008 for the Cereal Enterprise on Specialist Tillage Farms



(Source: National Farm Survey 2007 and Author's own estimates)

Figure 14: Actual Net Margin 2007 and Estimated Net Margin for 2008 for the Cereal Enterprise on Specialist Tillage Farms



(Source: National farm Survey 2007 and Authors' own estimates)

Even more worrying than the previous estimates for gross margin are the estimates for net margin in 2008, which show a negative net margin for even the most efficient group of farmers. For the best performing one-third of tillage farmers the estimated net margin for 2008 is -€154 per hectare, and for the average farmer is -€330 per hectare. Given that the average SFP payment per hectare in 2008 for cereal farmers is €352 per hectare, the net margin estimates presented in Figure 14 above show that the average farmer will be left with only €22 per hectare after all costs are paid, and even the most efficient group of farmers will have just under €200 per hectare remaining after all costs are paid.

4. Outlook for 2009

In this section forecasts are provided on the expenditure for various input items in 2009, the farm gate cereal price that will prevail at harvest 2009 and the likely net margin of tillage farmers in 2009.

4.1 The Outlook for Input Expenditure

4.1.1 Fertiliser – usage and price

A number of factors need to be considered when price and volume changes for fertiliser on crop farms are forecast for 2009. While fertiliser prices have continued to increase month by month for most of 2008, Urea prices have decreased sharply since the beginning of October 2008. The current manufacturers' prices of Urea is now back down to the level which prevailed early in 2007 and if this price were to be maintained through 2009 then Urea prices could be down by about 40 per cent on the 2008 level. However CAN prices have remained strong. Until recently there has traditionally been a strong price relationship between CAN and Urea but in recent weeks this relationship has not been maintained due to the supply origins of the two raw materials. However it would seem realistic to assume that downward adjustment in the CAN price can also be expected as a pull factor associated with the Urea price drop. A price drop of 10 per cent for CAN is assumed for 2009.

In the case of P and K demand is set to remain strong and this does not create an environment in which prices are likely to fall. Given that the majority of P and K ingredients are forward bought it is reasonable to assume that the price of P and K ingredients purchased by compounders for use in fertiliser compounds for use on cereal ground in 2009 has been purchased at a higher price than the ingredients purchased for 2008. However due to a fall off in demand for fertiliser products globally a conservative estimate for P and K compounds to remain at farm gate prices similar to 2008 levels is assumed.

Additionally, fertiliser usage in 2009 is expected to remain at 2008 levels, which was assumed to be a 10 per cent reduction on 2007 levels. Overall, it can be expected that fertiliser expenditure will decrease only very slightly in 2009. This expenditure drop will be somewhat less than the expenditure drop experienced on livestock farms due to the significantly higher proportion of P and K in compounds for cereals relative to grassland.

4.1.2 Seed – usage and price

As mentioned previously, cereal farmers experienced a significant increase in seed costs in 2008 relative to previous years due to the significant upward movement in the cereal markets. However, at present blue label seed is been sold for similar prices to last year despite the significant reduction in cereal prices experienced at harvest this year. The current failure of the Irish seed market to reflect the downward pressure on cereal prices can be explained by the failure of a large proportion of seed crops meeting minimum quality standards. Hence a large proportion of our seed requirement for 2009 has been imported from the UK and this extra cost is reflected in a stabilisation in seed prices at 2008 levels.

4.1.3 Crop protection – usage and price

The increase in costs between 2008 and 2009 is forecast to be of a similar magnitude to the increase between 2007 and 2008, which was minimal at just under 1 per cent. Volume changes between 2008 and 2009 are forecast to be negligible.

4.1.4 Energy and Fuel – usage and price

Fuel costs in 2009 will depend on the evolution of crude oil prices. Current crude oil futures prices suggest that prices will drop back from the 2008 average during the course of 2009. For the purposes of this analysis it is assumed that fuel costs will decrease by approximately 20 per cent in 2009, which would leave fuel prices in 2009 similar to those recorded at farm level in 2007. In 2008, the increase in contractor charges was assumed to reflect the increase in fuel costs, but as fuel charges are forecast to decrease in 2009, the associated contractor charges are not forecast to decrease to the same extent. Half of the decrease in fuel costs is assumed to be translated to contractor charges in 2009. Assuming that usage is unchanged, expenditure on fuel and contractor charges are estimated to reflect the assumed price decrease.

4.1.5 All other direct costs and overhead costs

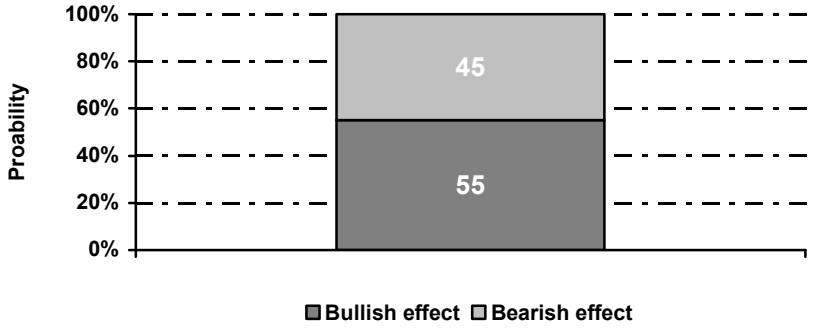
Given that forecasts for inflation are significantly lower for 2009 than those experienced in the recent past, labour costs and other agricultural costs are forecast to increase by between 2 and 2.5 per cent in 2009.

Given that farm gate cereal prices decreased significantly in 2008, there is presently a significant emphasis on decreasing land rental prices. It is assumed that land rental prices will decrease to those levels paid in 2007.

4.2 The Outlook for Markets

The cereals market has encountered significant volatility in recent years. The one question above all else which is being considered at present when planting decisions are being made is in relation to the expected farm gate cereal price in 2009. 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 2009 harvest price an econometric analysis was conducted to predict the probability that the 2009 farm gate price will be higher or lower than the 2008 price. This analysis was based on the November 2008 LIFE futures price for September 2009. The regression analysis examined the historic relationship between (i) predicted futures price for the following harvest, made from the previous November 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 2009 Irish farm gate cereal price for wheat taking into consideration the differences between the historic predicted values and the actual outcome. Based on this analysis a forecast is presented in Figure 15 of the probability that the 2009 farm gate wheat price will be higher or lower than the 2008 farm gate wheat price.

Figure 15: Probability that the 2009 Cereal Price will be lower/higher than the 2008 farm gate price

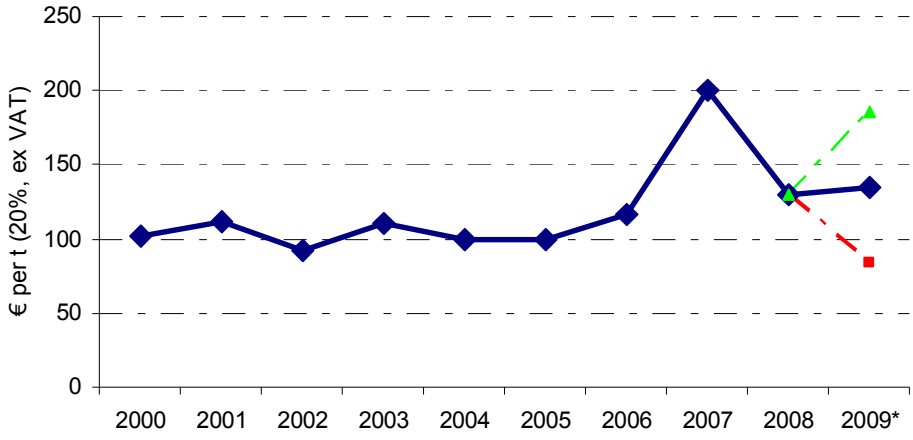


(Source: Author's own estimates)

Figure 14 shows that there is significant volatility around the forecast for the 2009 harvest price. There is a 55 per cent probability that the wheat price at harvest 2009 will be higher than the 2008 price. However there is also a 45

per cent probability that the 2009 price will be lower than the 2008 price. Based on these probabilities the average predicted value from the model for the farm gate wheat price is €135 per tonne at 20 per cent moisture. However there is significant variation surrounding this figure and based on a 90 per cent confidence interval it is forecast that the figure could be as low as €85 per tonne or as high as €185 per tonne (Figure 16).

Figure 16: Historic, Estimated and Forecasted Farm Gate Feed Wheat Price (2000 – 2009)



(Source: Authors own estimates, 2009 forecast, at 90% confidence interval

While there is much speculation at present in relation to the forecasted price for 2009 the latest estimates for planted area in the EU would seem to indicate that there will be modest upward pressure on cereal markets in 2009. The latest edition of Strategie Grains (November 2008) has forecast a 1.8 per cent reduction in planted area in the EU for the 2009 harvest, down 1.07 m ha to 58.51 m ha. This decrease in plantings is one rationale for the slight increase in farm gate cereal price in 2009. However there still exists much debate as to the forecasted closing stocks in Ireland emanating from the large increase in production in 2008 relative to 2007.

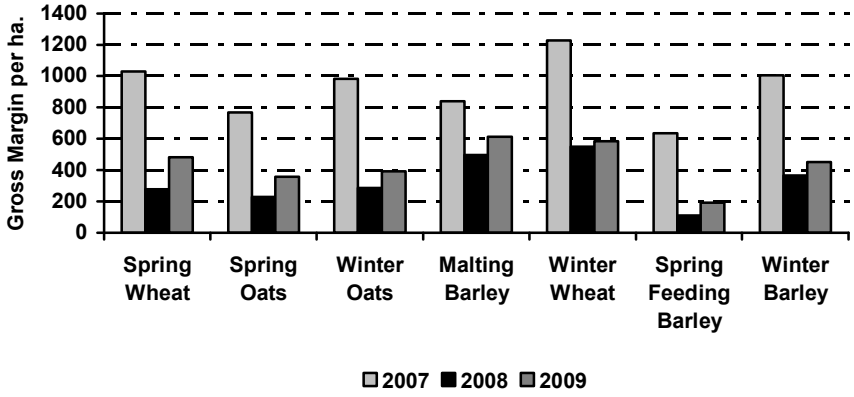
With the caveat that much volatility surrounds the forecasted 2009 harvest price, based on the futures market forecast and the adjustments made in the regression analysis for predicted versus actual outcomes, it is assumed for this analysis that farm gate cereal prices will increase marginally in 2009, by about 3 per cent. In addition to farm gate cereal prices at 20 per cent moisture, account is also taken in the 2009 forecasted net margin for a return to average moisture levels in 2009, which would see an increase in revenue for some crops which were harvested at high moistures in 2008.

4.3 The Outlook for Tillage Enterprise Margin in 2009

Slight decreases in energy, fertiliser, rent, and contractor prices coupled with a low general inflation factor for other inputs, costs are likely to be slightly lower in 2009 relative to 2008. In addition, output value is expected to increase marginally over 2008 levels due to a slight increase in forecasted prices and improved harvest conditions relative to 2008.

Figure 17 presents the actual gross margin for each of the main cereal crops in 2007, and the respective estimates and forecasts for 2008 and 2009. The net effect of input price, output price and volume movements is a slightly higher enterprise margin forecast for 2009 for each of the main cereal crops but still considerably lower than the margins achieved in 2007. For example, gross margins for winter wheat are forecast to increase by approximately €35 per hectare, while gross margins for spring barley are forecast to increase by approximately €80 per hectare. The slightly higher increase in forecasted margin for spring barley relative to winter wheat is due to the relatively high yield of winter wheat achieved in 2008, hence if average wheat yields are achieved in 2009, this will represent a reduction relative to 2008. It should be noted that the average gross margin figures presented are market based gross margins.

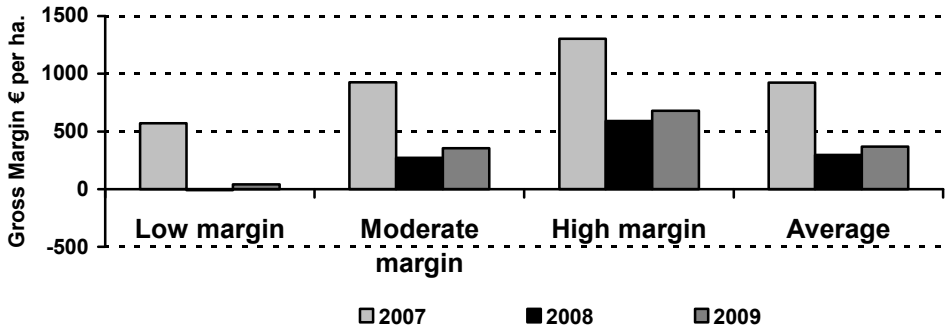
Figure 17: Actual 2007, Estimate 2008 and Forecast 2009 for Cereal Crop Gross Margins



(Source: National Farm Survey 2007 and Author's own estimates)

Similar to the format used to present margins in 2007 and 2008 earlier in the paper, the forecasted gross and net margins for 2009, are presented for the cereal enterprise on specialist tillage farms, as well as the population disaggregated into one-third groupings based on margins obtained.

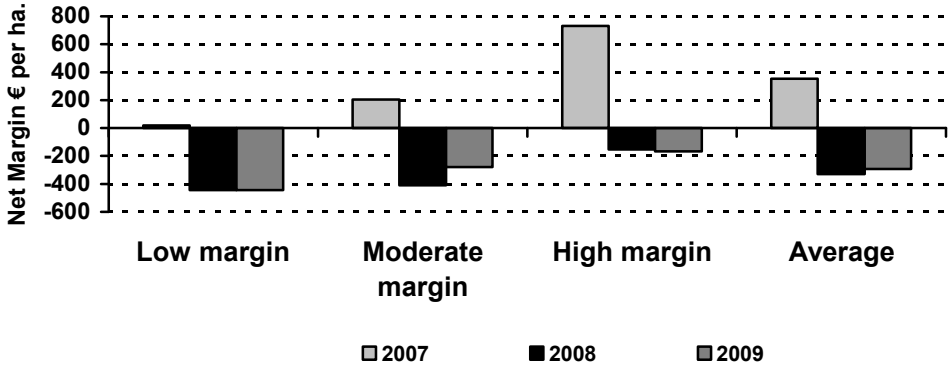
Figure 18: Gross Margin Actual 2007, Estimate 2008 and Forecast 2009 for the Cereal Enterprise on Specialist Tillage Farms 2008



Source: National Farm Survey Data (2007) and Authors' Estimates 2008 and 2009

Figure 18 shows that the forecast for 2009 on the average cereal enterprise on specialist tillage farms is for gross margin to increase by approximately 20 per cent or €70 per hectare relative to 2007. Figure 19 shows that net margin will improve by approximately €30 per hectare in 2009 relative to 2008. However the forecasted net margin for the cereal enterprise in 2009 relative to 2008 remains below zero meaning that the average tillage farmer must subside production with returns from the SFP.

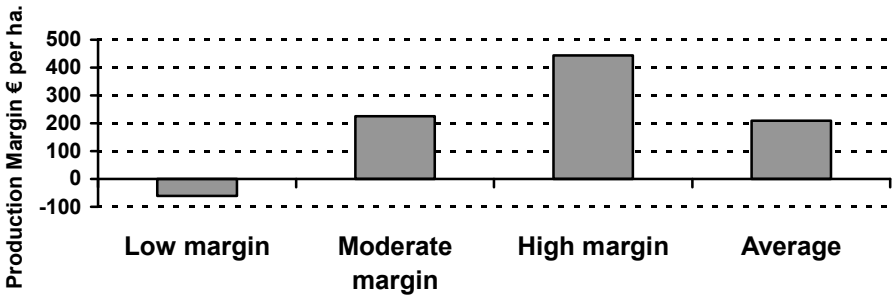
Figure 18 Net Margin Actual 2007, Estimate 2008 and Forecast 2009 for the Cereal Enterprise on Specialist Tillage Farms 2008



Source: National Farm Survey Data (2007 and Author's Estimates 2008 and 2009)

While the data presented in Figure 19 shows that the forecasted net margin from the cereal enterprise is negative for even the most efficient group of farmers in 2009 it must be remembered that a large proportion of fixed costs will be borne by the farmer even in a situation where the crop is not planted in 2009. Hence, to determine whether the return from growing the crop in 2009 will provide a positive or negative margin it is necessary to subtract the quasi-fixed cost items from enterprise gross margin. If the gross margin for the cereal enterprise remains positive after the quasi fixed costs are accounted for it makes economic sense to grow the crop in 2009. The fixed cost items assumed to be quasi fixed costs are labour and machinery operating expenses. These items would not be experienced if the land was not cropped in 2009. All remaining fixed cost items would be fixed regardless of the level of production, such as car, electricity, phone, machinery depreciation, building depreciation, and other miscellaneous fixed cost items. The forecasted margin results for the average and the disaggregation of the cereal enterprise when quasi fixed costs are accounted for are presented in Figure 20.

Figure 20: 2009 Forecasted Gross Margin (minus quasi fixed costs) for the Cereal Enterprise on Specialist Tillage Farms



Source Author's' Estimates

Figure 20 shows that the forecasted gross margin minus quasi fixed costs is positive for the moderately and higher efficient farmers in 2009. However the farmers with lower levels of efficiency are forecast to have a negative gross margin minus quasi fixed costs.

5. Concluding Comments

The 2006/2007 production year proved to be a very successful year for tillage farmers in Ireland. Depletion of global stocks, drought in Australia and the demand for corn from US ethanol producers led to a dramatic price

increase for all cereals within Ireland and globally. These price increases in turn led to a supply response. This increased production in turn had a negative impact on farm gate cereal prices in 2008 relative to 2007. Coupled with significant cost increases in key input variables, the estimated gross and net margins for cereals crops are considerably lower than 2007 returns. However it is anticipated that the price of key input variables such as fertiliser, land rent and fuel will decline in 2009. There is considerable uncertainty regarding cereal prices for 2009 harvest but based on current futures trading prices it is assumed that 2009 harvest prices will be slightly up on 2008 levels. The movements in input and output price variables are forecast to have a positive effect on gross and net margins for tillage farmers in Ireland in 2009 relative to 2008. However, without any significant upward movement in cereal price or real reduction in input costs, the forecasted net margin for the average producer in 2009 will be negative.

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Situation and Outlook for Forestry 2008/09

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1. Introduction

The total area of forests planted to the end of October in 2008 was 4,800 hectares compared with 5,468 hectares (ha) and 6,134 ha for the same period in 2007 and 2006 respectively. The total forest area to end October 2008 is just over 728,000 ha. This area equates to just over 10.5 percent of the total area of the country under forests. Of this, privately owned forests account for 45.5 percent. The average level of forest cover in the EU is 38 percent, with the highest cover in Finland of 73 percent.

It should be noted that the Strategic Plan for the Development of the Forestry Sector in Ireland, 'Growing for the Future', sets a target of 17 percent of the total land area under forest cover by 2030. This would require an afforestation level of 20,000 ha annually. Over the period of the National Development Plan 2007-2013, the short-term objective is for annual planting to grow to 10,000 ha per annum.

The decline in farm afforestation rates is occurring despite the presence of forest grants and premium payments and the recent introduction of the Forest Environment Protection Scheme (FEPS). As well as these support payments the development of emerging markets such as wood energy offer the potential for significant growth in the long-term demand for timber. Nevertheless the afforestation rate continues to decline annually, reflecting a hesitancy amongst many Irish farmers to consider forestry.

Forestry differs significantly from the other enterprises featured in this publication in a number of ways. The life cycle for forests is significantly longer, approximately 40 years for conifers and in excess of 55 years for broadleaves, this makes comparison with annual crops and livestock enterprises particularly difficult. For the first 15-20 years, typically the only income is the premium payments. Furthermore from this period onwards thinning income will be earned on a four to five year cycle and in the years where thinning does not take place no market income will be earned. Finally, forestry does not suffer from the same year on year volatility in the costs of production such as fertilizer and feed that affect other farm enterprises.

Given the differences that exist between forestry and the other enterprises examined, the structure of this paper will differ somewhat from the other agricultural enterprises. The first section presents a review of Irish forestry focusing on the declining trend in afforestation rate and the second section looks at the characteristics of farmers who have planted. The next sections examine the outlook for the timber industry as a whole and for the returns to individual farm forest owners. Finally we present farmer intentions to plant in the future based on data from the National Farm Survey (NFS) and an overall medium term outlook for the sector.

2. Review of Irish Forestry

2.1 Irish Afforestation Rates

Prior to 1986 public afforestation (Coillte) accounted for almost 100 percent of total Irish afforestation. Between the years 1982 and 1995, Coillte planted in the region of 4,500 to 7,500 hectares per year. In 1996 public afforesation began to decline finally reaching a level of zero in 2007. This reflects Coillte's decision not to purchase land for afforestation, however Coillte are engaged in private planting in partnership with farm forest owners.

In 1996 the Irish government set targets for national afforestation levels of 25,000 hectares per annum up to the year 2000 and 20,000 hectares per annum from 2000 to 2030. These targets were set after a sustained period where the planting rate had consistently exceeded 15,000 hectares and where the current level of planting was in excess of 20,000 hectares. However in each of the years since the introduction of these targets Ireland has failed to achieve these rates of afforestation. The current short-term target of 10,000 ha per year has also not been achieved since its introduction in 2007. The total private planting in 2007 was 6,950 hectares and total planting to date in 2008 is 4,800 hectares.

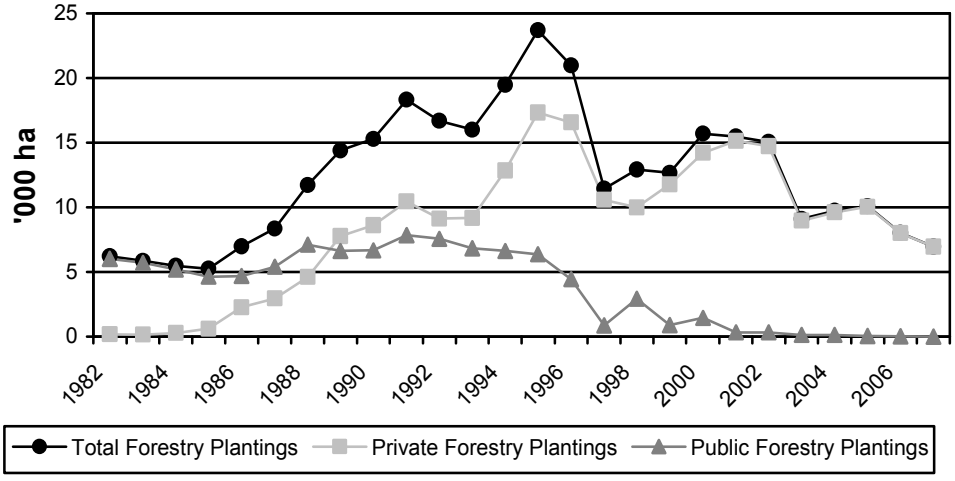
2.2 Grant and Premium Schemes

The increase in farm-level afforestation that occurred from 1985 onwards was driven by the introduction of a series of programmes that supported farm forestry through establishment grants and/or premium payments. The first grant package to be introduced was the "Western Package Agricultural Development Scheme" which was introduced in 1981. The scheme allocated €23 million Euro for planting in Ireland over a 10 year period but was restricted to the West and South West of the country. Much of the planting carried out under this scheme was carried out by investment institutions and pension companies. This was followed by the "Scheme of Compensatory Allowances in 1987 which introduced an annual premium payment for forestry and the "Scheme of Agricultural Holdings" which

provided grant aid for forestry planting to full-time, part-time and retired farmers across the country.

The “Forest Premium Scheme” which was introduced in 1989 actively promoted the planting of forestry on non-marginal land for the first time. This scheme was significant in that as well as providing establishment grants for the planting of the forest the farmer would also receive an annual forest premium payment for the first 20 years. This payment was considered a compensation for loss of agricultural income on the afforested land and was designed to provide an income for the first 20 years until the forest was in a position to generate market returns. In 1990 under the auspices of the Common Agricultural Policy (CAP), the Forestry Operational Programme was introduced. The CAP premium Scheme introduced in 2003 incentivised the planting of broadleaved species on better quality land by offering a considerably higher premium payment than for conifers. Most recently the Forest Environment Protection Scheme (FEPS) was introduced in 2007. The aim of this scheme is to reward farmers for including additional environmental measures in their forests to improve biodiversity and amenity potential. Despite the fact that each of these schemes gave rise to an increase in the level of payment for afforestation, the annual afforestation rate has been declining since the mid 1990’s. These trends in Irish private and public afforestation levels for the years 1982 to 2007 are presented graphically in Figure 1.

Figure 1: Total Irish Afforestation Levels 1982 - 2007

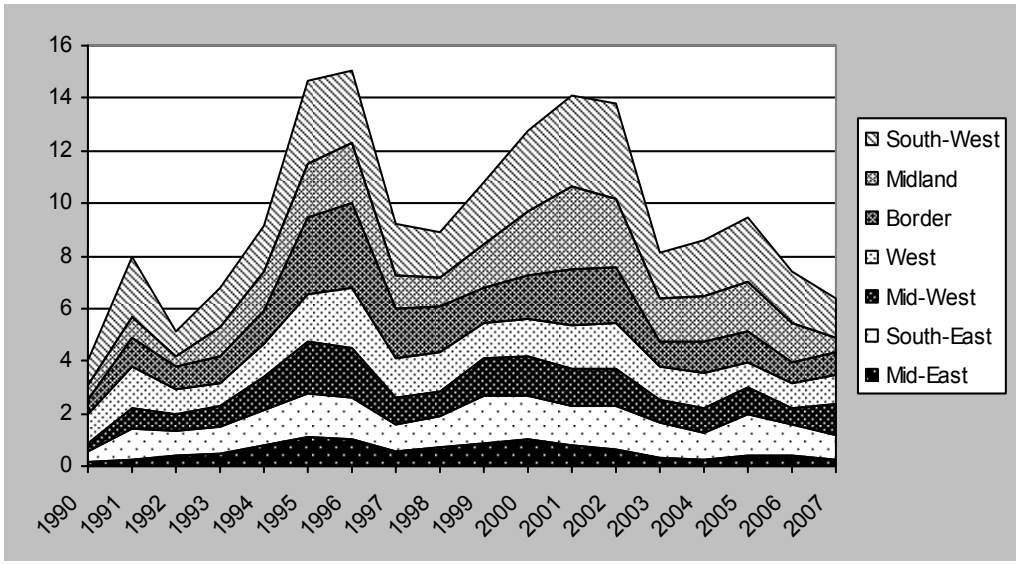


Source: Forest Service (2008)

Figure 2 presents the regional trend in farm afforestation. All seven regions have experienced a decline in afforestation. Since 1998 afforestation rates

have been highest in the south-west peaking at 3,700 hectares in 2002. Since the turn of this century the decline has been most notable in the midlands and south-west. The 2007 afforestation rate in the midlands has fallen by 83 percent compared with the 2001 level, while the 2007 afforestation rate in the south-west is 60 percent below the 2002 peak.

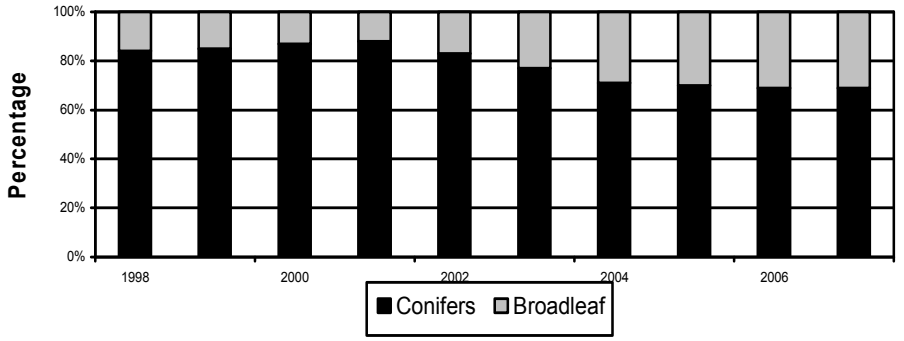
Figure 2: Afforestation Rates by Region 1990 to 2007



Source: Forest Service (2008)

In general, there has been a trend away from planting in western counties towards the better soils of the midlands and south west. This is accompanied by an increase in the level of planting of broadleaf species as presented in Figure 3. This increase reflects the substantially higher premium paid for planting broadleaves over conifers in recent years. This is also the case for the FEPS scheme which was launched in 2007. Of the 2,000 ha planted under the scheme by October 2008, 60 percent of FEPS plantations are located in the south west with the highest level of planting in Co. Cork, followed by Kerry, Limerick, Tipperary and Clare.

Figure 3: Share of Conifer and Broadleaf Areas Planted 1998 to 2007

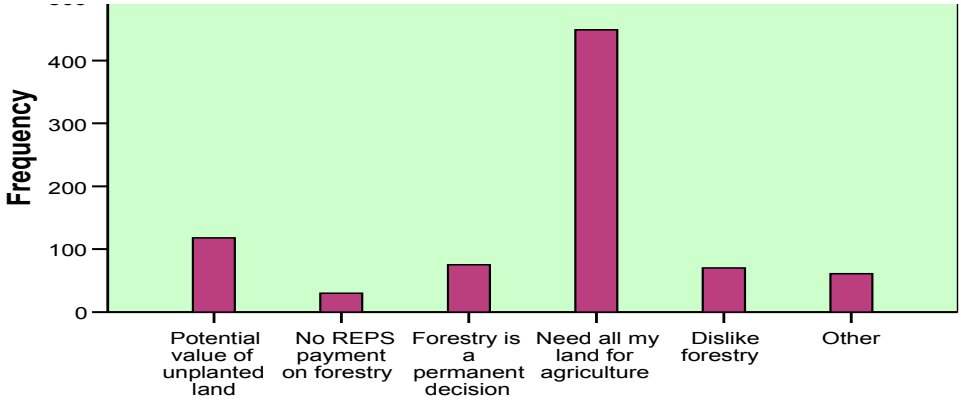


Source: Forest Service (2008)

2.3 Barriers to afforestation

Despite the increased grant and premium incentives on offer, the amount of land being planted by farmers has been steadily declining since the mid 1990's. An insight into why these incentives have not translated into increased planting levels is presented in Figure 4 which shows the results from a National Farm Survey (NFS) supplementary survey question from 2006. When asked to rank a number of barriers to planting land, 48 percent of farmers saw the need to keep their land for agriculture as the biggest reason not to plant. Many others also see the long-term nature of forestry and the loss of opportunity to do something else with the land as disadvantages.

Figure 4: NFS Supplementary Survey 2006 - Ranking of barriers to forestry



Source: Farrell, M and Ryan, M. RERC Working paper series (2008)

3. Review of Farms with Forests in the National Farm Survey

The National Farm Survey sample contained 115 farms with forests in 2007. These represented 7,200 farmers nationally out of a total population of 112,000 farms represented by the NFS sample in that year, accounting for almost 6.5 percent of all farms represented. Table 1 provides a breakdown of those farms that have forests and the average area of farm forests by farm type. In 2007 one third of farms with forests (2,368 farms) were classified as cattle rearing farms, while cattle other farms accounted for another 19 percent. Collectively dairy farms accounted for almost one quarter (1,760) of farms that had planted. This high rate of afforestation on dairy farms appears surprising given the relative profitability of dairying. However it is largely due to the number of dairy farmers who purchased land in order to acquire the milk quota that was attached and who subsequently planted that land.

It is worth noting that the percentage of farmers with forests was less than 10 percent in each of the six NFS farm types. The average forest area on those farms with forests was highest on dairy and other and mainly sheep farms at 15.5 hectares per farm. While tillage farms had the smallest average forest area (4.8 hectares) despite having the largest average farm size. This is most likely a reflection of the soil type and a negative perception amongst many farmers towards planting forests on better land.

There was also considerable variability in the share of total area that forests accounted for on those farms with forests across farm types. On dairy and other farms with forests, on average 26 percent of the farm was under forest, compared to just 5 percent of the land on tillage farms.

Table 1: Breakdown of Farms with Forests by Farm Type and Size in 2007

	No. of Farms	No. of Farms as % of Farms with Forests	No. of Farms as % of Farms within Farm Type	Average Forest Area
Specialist Dairy	1,176	16.4	7.0	8.6
Dairy and Other	584	8.1	6.4	15.5
Cattle Rearing	2,368	33.0	9.0	11.8
Cattle Other	1,367	19.1	4.4	8.6
Sheep	1,329	18.5	6.4	15.5
Tillage	343	4.8	4.5	4.8

Source: National Farm Survey Data (2007)

Table 2 indicates that the average family farm income was higher on farms with forests i.e. €27,383 versus €19,158. However it is also important to note that the average farm size for farms with forests was significantly higher i.e. 62.7 hectares compared with 33.7 hectares for those farms without forests. As a result, the average family farm income per hectare was in fact slightly lower on those farms without forests i.e. €458 per hectare compared with €491 per hectare. The average forest premium received on NFS farms with forests was €4,428 per annum.

Table 2: Family Farm Income of Farms with Forests in 2007

	Farms with Forests	Farms Without Forests
Family Farm Income (€)	27,383	19,158
Farm Size (ha)	62.7	33.7
Family Farm Income per hectare (€/ha)	458	491

Source: National Farm Survey Data (2007)

4. Review and Outlook for Irish Timber Markets

The Irish forest products sector experienced significant growth in 2007. A record 3 million cubic metres (m^3) of roundwood was harvested from Irish forests in 2007, supplying the sawmilling, wood based panel sector and energy sectors (COFORD, 2008). Coillte supplied 87% of this harvest, with the balance coming from an expanding private forest estate. Table 3 presents the value of imports and exports of Irish timber in 2007. It should be noted that timber is a globally traded commodity and is traded without subsidies or supports. As a result it is particularly sensitive to exchange rate changes.

Table 3: Irish Timber Imports and Exports in 2007

Item	Unit of measurement	Import volume	Import value €000
Sawnwood	1,000 m^3	724	€251,200
Wood based panels (WBP)	1,000 m^3	358	€145,706
Pulp & Paper Products	1,000 mt	546	€466,526
Totals for 2007			€863,432
Item	**Unit of measurement**	**Export volume**	**Export Value €000**
Sawnwood	1,000 m^3	381	€70,977
Wood based panels (WBP)	1,000 m^3	757	€262,410
Pulp & Paper Products	1,000 mt	85	€92,026

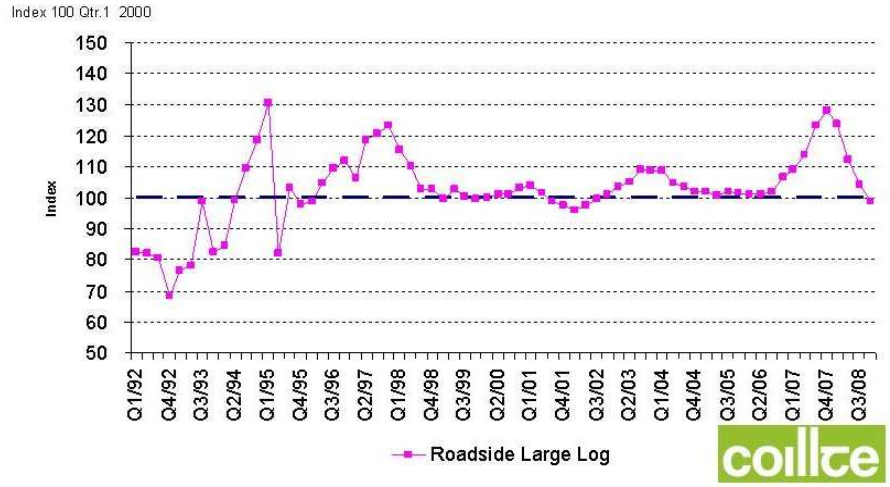
Totals for 2007			€425,413

Source: CSO (2008)

The growth in the construction industry over the past 10 years had led to a strong demand for timber from the sawmilling industry. However, consultation with members of the sawmilling industry has indicated that throughput from the sector is down due to the recent decline in the construction industry. This situation is not unique to the Irish sawmill industry with reports from mainland Europe indicating that sawmills are facing similar pressures there. As a result of the downturn in the demand for timber in the Irish construction industry in 2008 and a forecasted further drop in demand in 2009 (CSO, 2008), Irish sawmills and panel mills are looking to sell more product into the UK market but exchange rate developments are making it increasingly difficult for Irish exports to compete in this market.

It is difficult to predict timber prices into the future as timber is a globally traded commodity and the price on the world market is subject to many factors. However, timber prices are cyclical in nature as represented in Figure 5 which shows that although timber prices rise and fall, there has been a strong overall upward trend over the last 20 years.

Figure 5: Coillte Roadside Large Sawlog Price Index: 1992 to present



Source: Coillte (2008)

In comparison to the market for sawn timber, the energy market for forest products can be expected to grow in the coming years, as a result of increased demand for renewable heating from wood chips. The number of

wood chip boilers installed in the country has grown rapidly from a zero base 5 years ago to over 60 industrial size wood chip boilers today. SEI has grant aided boilers producing in excess of 32,000 MW of heat under its current 30 percent grant programme (pers. comm. SEI). On average 750 tonnes of wood chip at 35 percent moisture content are required each year to generate 1 MW of heat. This corresponds to 24,500 tonnes of wood chip to supply the existing grant aided boilers that have been installed. Two thousand hectares of forests would have to be thinned each year to supply energy wood for this level of demand. SEI also indicates that the number of wood chip boiler installations will increase substantially in the coming years. The target for Ireland is to achieve 12 percent of heat from renewable sources by 2020 (SEI, 2008). The current level of renewable heat generation is approx 4 percent, with much of this heat being generated in sawmills. While other sources of wood energy such as willow or miscanthus will supply some of this demand, trends from other European countries indicate that the market for wood chips from forest thinnings will continue to expand.

The level of thinning activity in farm forests has increased dramatically in recent years. Table 4 presents data on the number of General Felling Licences (GFL's) that have been awarded by the Forest Service for the last eight years. These licences permit forest owners to thin their forest and are valid for a period of five years. It is significant to note that the number of licences has increased from 102 in 2005 to 692 licences in 2008. This increase in licences to thin forests is largely a result of the increase in private forest planting that occurred in the mid 1980s. Many of these plantations are now ready for thinning.

Table 4: Number of General Felling Licences Awarded to Thin Forests 2005-2008

	2005	2006	2007	2008
GFL	102	223	620	692

Source: Forest Service (2008)

5. Outlook for Returns from Farm Forests

As stated earlier, forestry is a very different enterprise to the other agricultural enterprises examined in this publication. Forests represent an investment decision of perhaps 40 years in the case of conifers and in excess of 55 years in the case of broadleaves, therefore this paper focuses on the net present value (NPV) of that investment decision.

The results presented show the NPV's per hectare for two forest stands calculated using an interest rate of 5 percent. Both stands assume the mix of trees is 80 percent Sitka spruce and 20 percent broadleaves such as ash

and sycamore. It is assumed that the productivity of the Sitka spruce is Yield Class 24 and the broadleaves are Yield Class 10.
The first scenario represents a plantation that was planted in 1998 and will be felled in 2038. The NPV is calculated only for the remaining 30 years of the crop. The second represents a plantation established in 2008 by a farmer who is not in REPS. In the third scenario, the farmer plants in 2008 and avails of FEPS for five years. This scenario also includes the possibility of a follow on scheme "FEPS 2" for the next five years. For the sites planted in 2008, the NPV is calculated for the full length of the rotation. These NPV's are then used to calculate an annualised discounted gross margin as this allows for comparison with other agricultural enterprises and are presented in Table 5.

The NPV in 2008 for the forest planted in 1998 is €5,252/ha, which equates to an annualised discounted gross margin of €342/ha. For a stand of trees planted in 2008 but not receiving a FEPS payment, the NPV is €8,795/ha or an annualised discounted gross margin of €513/ha. In comparison, if the farmer is to also participate in FEPS then the NPV is €10,203/ha, this equates to an annualised discounted gross margin of €595/ha. It should be noted that this analysis assumes no change in the premium received or the size of the FEPS payment received. The level of forest premium paid has been increased a number of times over the past ten years and farmers who currently have land planted have received the higher premium. Therefore any future increase in the value of the forestry premium would see a higher NPV and annualised discounted gross margin than those presented below.

Table 5: Returns to Farm Forest Owners

	NPV (€/ha)	Annualised Discounted Gross Margin (€/ha)
Scenario 1: Planted 1998	5,252	342
Scenario 2: Planted 2008 – No FEPS	8,795	513
Scenario 3: Planted 2008 with FEPS	10,203	595

Source: Authors own calculations

6. Outlook for Farm Afforestation Levels

As part of the 2007 NFS summer survey, farmers were asked if they intended to plant a forest in the next three years and if so, how many hectares they intended to plant. In total 5,100 farmers out of 111,900 farmers (approximately 4.5 percent) stated that they intended to plant in the

next three years. Table 6 presents the breakdown by farm type of those farmers who stated that they intended to plant. Specialist cattle farmers accounted for over one third of the total farmers who stated an intention to plant in the next three years with specialist sheep farmers accounting for almost another third. Dairy farms only accounted for 15 percent of those farms who stated an intention to plant. This is probably due to the relative profitability of dairy versus other farm systems as well as to the fact that many dairy farmers are adopting a "wait and see" outlook on the topic of quota abolition. Furthermore, specialist tillage farmers accounted for 19 percent of those farms who stated an intention to plant and this is significant given that they currently only account for 4.8 percent of farms with forests. This high level of tillage farmers intending to plant is possibly due to the changes in the regulations regarding compulsory setaside and due to farmers being surveyed before last years harvest and the subsequent high prices that were paid for cereal crops.

Table 6: Breakdown of Farmers who Intend to Plant by Farm System

	No. of Farms	**No. of Farms as % of Farms intending to Plant**	**No. of Farms as % of Farms within Farm Type**	**Average Forest Area**
Specialist Dairy	472	9.3	2.8	7.2
Dairy and Other	338	6.6	3.7	19.3
Cattle Rearing	951	18.7	3.6	6.9
Cattle Other	771	15.2	2.5	6.1
Sheep	1,577	31.0	7.5	5.4
Tillage	978	19.2	13.0	7.1

Source: National Farm Survey Data (2007)

As with the farms that currently have forests, the average size of those farms stating an intention to plant is significantly higher than those stating that they will not plant. The average farm size of those farms who stated an intention to plant was 56 hectares of utilisable agricultural area (uaa) compared with 35 hectares of uaa for those farms who do not intend to plant. Half of the farmers who intend to plant are currently in REPS and one third (approximately 1,700) had in excess of 40 hectares. Furthermore 850 of these farms have greater than 55 hectares. These farmers would receive €234 on the first 20 hectares in REPS, €205 for the next 20 ha, €82 on the next 15 hectares and only €10 on the remaining land. In contrast if these farmers were to consider FEPS they stand to gain substantially as they would lose only €82/ha or €10/ha but would gain €200/ha.

It is significant that 38% of farmers who stated an intention to plant in the next three years, already have a forest. Their intention to plant additional land shows a positive disposition towards forestry among farmers with forests.

7. Conclusions for the mid-term outlook

In the authors' opinions:

It is unlikely that the high levels of afforestation seen in the 1990's will be experienced again, rather that there will be a lower more sustained level of annual planting. The recent announcement of an increase in modulation to 10 percent creates the potential for a move towards more environmentally focused farming and forestry. Such changes in land use policy in recent years have meant that the profile of farm forests is changing. There is a greater awareness of the non-timber benefits of forests such as biodiversity, carbon sequestration, wood energy and recreation. This is reflected in the increasing share of broadleaves in new plantations. The drop in the level of conifers being planted will however lead to a drop in commercial timber production in the long run. Furthermore the potential for farm forests to sequester carbon and mitigate greenhouse gas emissions may become an important factor in future planting decisions. (COFORD, 2006). Future opportunities also lie in emerging markets such as wood chips for energy and stand-off pads.

For as long as direct payments continue to account for a large proportion of family farm income, there will be a perception among farmers that they need their land for agriculture, leading to a hesitancy towards planting land. This perception arises despite the fact that since the introduction of decoupling farmers can plant up to 50 percent of their land without losing their Single Payment. Furthermore with the recent CAP health check, forestry is set to become an eligible crop for the Single Farm Payment. Ultimately the motivation of farmers to consider planting forests will be determined by a number of socio-economic factors, not least of which may be an underlying wish to keep farming.

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