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# **ECONOMIC PERFORMANCE IN IRISH SHEEP PRODUCTION**

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*Research Centre, Athenry, Co. Galway*

# **Economic performance in Irish sheep production**

by

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## SUMMARY

The objectives of this project were to identify and quantify the factors affecting the profitability of the main systems of sheep production; to identify the factors responsible for the wide variation in output between sheep farms and to assess the impact of EU policy measures on Irish sheep production. Sheep production accounted for £154M or 5% of agricultural output in Ireland in 1999. If headage and ewe premia are included then the sheep sectors contribution to output was 7.8% in that year. Sheep numbers expanded from 1.547 million ewes in 1980 to 4.756 million in 1992. However since the 1992 CAP Reform, numbers have declined to 4.446 million in 1999.

Mid-season lamb is the predominant sheep system with lambs born in March and finished off grass from July onwards. Gross output per ewe and per ha from this system in 1998 was almost identical to that of 1993, with direct payments contributing on average 30% of output. Gross and net margins remained virtually static over the period without taking account of inflation. There has been no change in the key technical performance parameters stocking rate and weaning rate over the same period.

The second most common lowland system of sheep production is mainly store lamb production and is defined as having less than 70% of lambs reared sold at the end of the production year. This system had lower output and margins than the mid-season system over the period 1993 to 1998 due mainly to poorer technical performance.

Early lamb production is the most intensive of the lowland systems, with lambs being finished on concentrates in April and May to avail of high prices on the Easter market. This system depends on producers obtaining a premium price for out of season lamb to compensate for high costs of production. Profit margins were on average £80 per ha higher than for the mid-season system over the period 1993 to 1998 due mainly to higher technical performance.

The Blackface Mountain system is highly dependent on direct payments, which accounts for approximately two thirds of output. Sales of lambs and wool were not sufficient to cover production costs resulting in negative margins, were it not for subsidy payments. There has been virtually no change in financial returns to the Blackface Mountain or Cheviot system over the period 1993 to 1998.

Profit margins from lowland sheep production are strongly influenced by the number of lambs reared per ewe whether considered on a per ewe or per unit area basis. Stocking rate is equally important when considered on a per unit area basis.

Analyses of National Farm Survey data showed that an extra 0.1 lambs per ewe increased gross margin per ewe by £3.83. Analysis of gross margin per ha showed that stocking rate, lambs weaned per ewe and lamb prices were equally important sources of variation in profit margins with each accounting for 18 to 20% of observed variation.

Direct payments are critical to the financial viability of the sheep sector contributing £122.4 M in 1999 compared to £153.5M from the sale of wool and animals.

The 1999 CAP Reform increased direct payments on cattle and cereals but introduced no changes to sheep payments. The decline in sheep numbers, which commenced following the 1992 CAP Reform will therefore continue as sheep loose competitiveness with cattle and cereals.

## INTRODUCTION

Sheepmeat production accounted for 1.15M t or 3.6% of total EU meat production in 1999. The UK is the largest producer accounting for 0.4M tonnes or one-third of EU sheep meat production. The sheep enterprise is concentrated within the disadvantaged areas of the EU with approximately 75% of sheep located within these areas. This is the situation in France, the UK, Spain, Greece and Ireland, which together account for approximately 86% of EU sheep meat production. Despite its relatively low contribution to total EU meat output, the sheep enterprise is to be found on approximately 700,000 farms within the EU.

In Ireland sheep production accounted for £154M or 5% of agricultural output in 1999. If headage and ewe premia are included then the sheep sector's contribution to gross output was 7.8% in that year. Sheep numbers expanded rapidly during the 1980's. Ewe numbers rose from 1.547 million in 1980 to 4.756 million in June 1992. Since the reform of the CAP with the imposition of quotas in 1992, numbers have declined to 4.46 million. Data in Table 1 show the growth in sheep numbers and sheep meat production from 1980 to 1999.

**Table 1: Sheep, ewe numbers and sheepmeat production in Ireland, 1980-1999**

	1980	1990	1992	1994	1996	1999 <sup>1</sup>
Sheep numbers ('000 head)	3,292	8,539	8,908	8,443	7,934	7,999
Ewe numbers ('000 head)	1,547	4,227	4,756	4,653	3,588	4,446
Sheepmeat production ('000 tonnes)	39	87	97	98	94	91

*Source:* CSO June enumeration, Department of Agriculture, Food & Rural Development.  
<sup>1</sup>estimate

Sheep meat production increased steadily from 39,000 t in 1980 to 103,000 t in 1993, but declined to 85,000 in 1998. Exports of sheep meat from Ireland increased from 24,000 t in 1985 to 67,200 t in 1993 but, in line with production, declined to 58,000 in 1998. Consumption of sheepmeat in Ireland has remained relatively static at 30,000 since the late 1980s. France remains our main export destination, accounting for almost 75% of exports with the balance going to the UK, Germany and Spain.

**Table 2: Gross indigenous sheep production 1990 – 1999 ('000 head)**

	1990	1992	1994	1996	1998	1999
Live exports	243	304	200	131	135	135
Live Imports	-109	-90	-90	-250	-400	-400
Slaughtering at Export Plants	3,029	3,448	3,640	3,737	3,497	3,903
Other Slaughtering	859	890	830	629	570	470
<b>Total</b>	<b>4,022</b>	<b>4,552</b>	<b>4,580</b>	<b>4,247</b>	<b>3,802</b>	<b>4,108</b>

*Source:* An Bord Bia, Dublin.

The dependency of Irish sheep producers on the export market is clearly indicated in Table 2 with approximately 90 per cent of total disposals exported. Slaughtering for the domestic market at non-exporting abattoirs have declined from 859,000 head in 1990 to 420,000 head in 1999.

Five companies slaughter and process 90% of Irish lamb exports, with a number of smaller abattoirs and butchers supplying the domestic market. A recent study by An Bord Bia showed that whilst there is approximately 30% over capacity in the export processing sector, it is as efficient and competitive as plants in other EU countries. However, the bulk of Irish exports are still in carcass form whilst our main competitors to the EU market i.e. the UK and New Zealand have moved to preparing, packaging and marketing meat cuts, including primal carcass cuts.

The processing sector requires a balanced supply of quality carcasses throughout the year. Lamb quality has been excellent in the early part of the season but tends to become overweight with excessive fat as the season progresses. The lamb carcass classification scheme introduced in 1996 should provide a valuable link between producers and processors. The scheme is operated by the meat plants but is independently monitored by the Department of Agriculture, Food and Rural Development. The classification system is based on the EUROP grid and is similar to that in operation in other EU countries. The letters E,U,R,O,P, describe conformation and the numbers 1, 2, 3, 4 and 5 describe the level of fat on the carcass.

## FINANCIAL AND TECHNICAL PERFORMANCE OF SHEEP PRODUCTION

The results in this section are derived from farms participating in the National Farm Survey, carried out annually by Teagasc. Records from approximately 600 flocks were used to produce results for the main systems of sheep production. The survey data are for all years up to 1998 with estimated results for 1999.

### Mid-season lamb system

Mid-season lamb production is the predominant system with lambs being born in March and finished off grass from July onwards. At least 70% of lambs reared are sold as finished before the end of the calendar year. A summary table of key financial and physical factors for the years 1993 to 1999 are shown in Table 3.

**Table 3: Mid-season lamb production: financial and technical performance 1993-1999**

	1993	1994	1995	1996	1997	1998	1999 <sup>1</sup>
	<b>£/ewe</b>						
Gross output	72.2	72.8	68.3	81.3	79.2	72.4	65.9
<i>Of which subsidies</i>	25.0	22.5	21.8	24.7	16.3	19.6	19.6
Direct costs	17.8	20.2	22.7	23.1	22.6	21.0	22.8
Gross margin	54.5	52.6	45.7	58.1	56.6	51.5	43.1
Overhead costs	23.0	23.5	23.1	24.3	23.3	21.0	21.0
Net margin	31.5	29.1	22.6	33.8	33.3	30.5	22.1
	<b>£/ha</b>						
Gross output	652	677	621	754	726	668	589
Direct costs	160	188	206	215	207	193	210
Gross margin	492	489	415	539	519	474	379
Overhead costs	207	219	210	225	214	193	193
Net margin	285	270	205	314	305	281	186
	<b>Technical Performance</b>						
Weaning rate (lambs/ewe)	1.31	1.26	1.27	1.26	1.33	1.30	1.30
Stocking rate (ewes/ha)	9.0	9.3	9.1	9.3	9.2	9.2	9.2

<sup>1</sup>estimate

Source: Teagasc National Farm Survey

Gross output from the sheep sector is composed of sales of lambs and cull breeding stock plus all direct payment, i.e. the ewe and rural world premia plus headage payments. Overall there has been little change in output per ewe or per hectare over the 7-year period.

The survey data show that output in 1998 was almost identical to that of 1993. Over the six years, direct payments contributed on average 30% of gross output. Gross and net margins remained virtually static over the period without taking inflation into account.

The two key factors in relation to technical performance are weaning and stocking rates. The data indicate that there has been no significant change in either of those two factors over the period shown. In 1993 there were 11.8 lambs produced per hectare which, at an estimated 18 kg per carcass, resulted in 212 kg carcass produced per hectare. In 1998 the corresponding figures were 12.0 lambs produced and 215 kg of carcass per hectare, i.e. a drop of 7 kg carcass per hectare. The weaning rate of Irish lowland sheep production has not improved over the last two decades with stocking rate showing only a slight improvement.

### Mainly Store Lamb Production

This is the second most common lowland system and is defined as having less than 70% of lambs reared sold as finished lamb by the end of the recording year and having not more than 10% of the reared lambs being purchased. A summary of key financial and technical performance data are shown in Table 4 for the years 1993 to 1999.



**Table 4: Mainly store lamb production : financial and technical performance 1993 to 1999**

	1993	1994	1995	1996	1997	1998	1999 <sup>1</sup>
	<b>£/ewe</b>						
Gross output	70.5	68.3	66.6	74.9	80.9	76.7	69.3
<i>Of which subsidies</i>	26.5	26.6	25.5	26.1	19.0	23.8	23.1
Direct costs	18.7	20.3	22.8	20.8	20.0	22.6	23.2
Gross margin	51.8	48.0	43.7	54.1	60.9	54.1	46.1
Overhead costs	23.4	21.8	22.4	20.8	25.3	22.5	22.5
Net margin	28.4	26.3	21.3	33.3	35.6	31.6	23.6
	<b>£/ha</b>						
Gross output	570	582	519	587	630	648	585
Direct costs	151	173	178	163	156	191	185
Gross margin	419	409	341	424	475	458	400
Overhead costs	189	186	175	163	197	190	190
Net margin	230	224	167	262	278	267	210
	<b>Technical Performance</b>						
Weaning rate (lambs/ewe)	1.23	1.15	1.16	1.15	1.26	1.25	1.20
Stocking rate (ewes/ha)	8.1	8.5	7.8	7.8	7.8	8.5	8.0

<sup>1</sup>estimate

Source: Teagasc National Farm Survey.

Output per ewe was lower than for the mid-season system and changed little over the period shown. Direct payments contributed 34% to gross output on average over the 6 years of recorded data. Direct costs were similar to mid-season lamb. Gross and net margins showed little change and were approximately £2 per ewe less than margins for mid-season lamb production. However the margins per hectare were £68 lower for mainly store lamb due to poorer technical performance.

#### Early lamb production

This is an intensive high cost system of production, as lambs are finished, on concentrates in April and May to avail of high prices for the Easter market. Concentrate cost is therefore £6 per ewe higher than for the mid-season system. This system depends on producers obtaining a premium price for producing out-of-season lamb at a high cost per kg carcass. Data in Table 5 show that returns per ewe and per hectare are more variable than for the other lowland systems. The data also show that margins per hectare are on average up to £80 higher than for the mid-season lamb system due to higher gross output and superior technical performance. Stocking and weaning rates were higher for this system than either of the other two lowland systems. Overall gross and net margins have remained static for early lamb producers since 1993.

**Table 5: Early Lamb; financial and technical performance, 1993-1999**

	1993	1994	1995	1996	1997	1998	1999 <sup>1</sup>
	<b>£/ewe</b>						
Gross output	79.1	78.6	70.7	87.5	81.6	82.9	87.3
<i>of which subsidies</i>	23.4	19.9	20.4	25.1	13.5	18.2	18.0
Direct costs	21.0	26.3	27.1	27.4	22.6	24.4	26.9
Gross margin	58.1	52.3	43.6	60.1	58.9	58.6	60.4
Overhead costs	28.5	25.7	24.3	28.7	25.6	29.0	28.0
Net margin	29.6	26.6	19.3	31.4	33.3	29.6	32.4
	<b>£/ha</b>						
Gross output	813	710	830	966	887	934	983
Direct costs	216	238	318	303	246	274	302
Gross margin	598	472	511	663	641	660	681
Overhead costs	293	233	285	316	277	326	315
Net margin	305	239	226	347	364	333	366
	<b>Technical Performance</b>						
Weaning rate (lambs/ewe)	1.30	1.23	1.29	1.19	1.33	1.31	1.30
Stocking rate (ewes/ha)	10.3	9.0	11.7	11.0	10.9	11.3	11.0

<sup>1</sup>estimate

Source: Teagasc National Farm Survey.

### **Hill Sheep - Blackface Mountain System**

In this system ewes must be Blackface Mountain type and be eligible for headage payments and at least 90% of lambs reared must be produced on the farm. Data in Table 6 show output, costs and gross margin per ewe for this system from 1993 to 1999. Data are not presented on a per hectare basis, as this would be meaningless on mountain and hill land.

**Table 6: Hill : Blackface Mountain sheep system : financial and technical performance, 1993 to 1999**

	1993	1994	1995	1996	1997	1998	1999 <sup>1</sup>
	<b>£/ewe</b>						
Gross output	47.6	50.0	48.0	58.1	52.1	48.0	45.0
<i>of which subsidies</i>	34.2	36.8	34.6	38.8	28.9	35.6	34.8
Direct costs	9.8	13.0	11.3	12.5	11.1	13.0	14.0
Gross margin	37.8	36.9	36.7	45.5	41.0	35.0	31.0
Overhead costs	10.9	11.5	10.8	13.4	14.7	11.0	12.0
Net margin	27.0	25.4	25.9	32.1	26.2	24.0	19.0
	<b>Technical Performance</b>						
Weaning rate (lambs/ewe)	0.75	0.74	0.69	0.77	0.70	0.80	0.70

<sup>1</sup>estimate

Source: Teagasc Farm Survey, various years.

Output per ewe peaked in 1996 at £58.1 but declined to £48 and £45 per ewe in 1998 and 1999 respectively. Subsidies contributed approximately 66 per cent of output on hill farms and sales of stock on these farms were not sufficient to cover total expenses resulting in a negative net margin were it not for subsidies. The per ewe data in Table 6 refers to ewes let to the ram, which can differ from the average number of ewes and the number of ewes on which premia was applied for. The fall in output in 1998 was due to collapse of demand and prices for light hill lambs destined for the Mediterranean market. Technical performance remains low on hill farms with a stocking rate of 0.7 LU per ha and a weaning rate of only 80 per cent. However overhead costs are also low on hill farms averaging £12 per ewe over the period.

#### **Hill Sheep Cheviot System**

This system is defined by the same criteria as the previous hill system except in this case the ewe breed is a Cheviot type. A summary of financial and technical performance for this system is shown in Table 7 for the years 1993 to 1999.

**Table 7: Hill-Cheviot system : financial and technical performance  
1993-1999**

	1993	1994	1995	1996	1997	1998	1999 <sup>1</sup>
	<b>£/ewe</b>						
Gross output	63.4	68.6	68.8	73.2	75.5	64.7	57.0
<i>of which subsidies</i>	33.8	37.8	35.1	35.4	28.8	33.9	33.1
Direct costs	17.6	19.1	19.4	19.0	19.1	20.4	20.8
Gross margin	45.8	49.7	49.2	54.2	56.3	44.3	36.2
Overhead costs	21.8	20.9	21.6	28.9	29.5	25.7	25.7
Net margin	24.0	28.9	27.5	25.3	26.8	18.6	10.5
	<b>Technical Performance</b>						
Weaning rate (lambs/ewe)	1.0	1.0	1.0	1.0	1.1	1.1	1.1

Source: Teagasc National Farm Survey

<sup>1</sup>estimate

Output per ewe for this system was almost as high as for the main lowland systems already discussed. The lower lamb sales were partially compensated for by higher subsidies, which in 1995 were £35.1 per ewe compared to £21.8 for mid-season lamb production. Stocking rate was lower at approximately four ewes per hectare compared to nine ewes on lowland farms. Direct costs and gross margin per ewe were similar to lowland flocks. Returns per hectare, however, were lower than for lowland systems due to the poorer stocking rates.

## FACTORS CONTRIBUTING TO VARIATION IN LOWLAND SHEEP MARGINS

Mid-season lamb production is the predominant lowland sheep system. Technical research on increasing production efficiency of sheep production can be divided into grass production/utilisation studies and animal performance (ewe productivity, lamb growth rate etc) studies. Data from the National Farm Survey (NFS) consistently show a wide range of variation in mid-season flocks in gross margin analyses and in physical indicators such as stocking rate and lamb output per ewe. Data analysed on a per unit area basis have underlined the importance of stocking rate and weaning rate as the most important factors contributing to variation in profit margins. Data analyses on a per ewe basis have highlighted the importance of weaning rate on profit margins. The objective of study was to analyse the joint contribution of the major variables affecting profit margins.

The results from this study are obtained from regression analysis of variation in gross margin (GM) based on models which simultaneously include explanatory variables, such as stocking rate, lambs weaned per ewe, lamb price and feed costs. NFS data for the three years 1993 to 1995 were used and restrictions on farms included were applied. Flocks of under 20 ewes were excluded as were flocks trading in in-lamb ewes. This was to ensure that results were applicable to well defined and consistent sheep flocks and to minimise any effects of trading in breeding stock. Direct payments were excluded from gross margins, as they are not directly linked to efficiency and are more dependent on the geographical location of the flocks. The set of explanatory variables considered in the analyses were:

- stocking rate (4.5 ewes = 1LU)
- lambs weaned per ewe joined (LW<sub>J</sub>)
- average sale price of lambs (£)
- concentrate cost (£/ewe or per ha)
- replacement cost (£/ewe joined)

The mean and variability for the variables are presented in Table 8 for the 1994 data together with the coefficient of variation. The differences between years were quite small except for gross margin which was lower in 1995 (£219 per ha) than in the other years. The relative variation was quite high for gross margins and there was even higher variability in feed costs. Numbers of lambs reared per ewe and lamb price showed the smallest degree of variation among flocks. The extremely high variability in feed costs suggest that farmers should carefully examine this aspect of their production system. There was no relationship between concentrate costs and stocking rate and only a positive association with ewe productivity.

**Table 8: Description of variables based on 1994 data set**

Variable	Mean	Coefficient of variation (%)
Gross margin (£)		
- per ewe	30.3	59
- per ha	263	52
Stocking rate (ewes/ha)	9.5	30
Lambs weaned per ewe joined	1.24	18
Lamb price (£)	42.5	16
Replacement cost (£/ewe)	7.4	51
Feed costs (£/ewe)		
- concentrates	8.7	65
- forage	6.6	65

The analyses of variation in gross margin per ewe showed that the most important explanatory variables were number of lambs weaned, lamb price and replacement costs with smaller but significant effects associated with feed costs.

**Table 9: Effects of changes in explanatory variables on gross margin per ewe (averaged over 3 years)**

Change	Effect
Increase stocking rate by 1 ewe/ha	-£0.53
Increase LW <sub>J</sub> by 0.1	+£3.04
Increase lamb price by £1	+£0.91
Reduce replacement costs by £1/ewe	£0.96

The effects, averaged over three years, of changes in stocking rate, LW<sub>J</sub>, lamb price and replacement costs on gross margin per ewe are shown in Table 9. These estimates are from analyses in which feed costs were omitted from the statistical model since it may be unrealistic to estimate effects of changes in stocking rate and LW<sub>J</sub> while holding such constant. The small negative effect of stocking rate reflects a positive association between this variable and forage costs. The average increase in gross margin for an extra of 0.1 lambs per ewe increased to £3.83 if concentrate and forage costs were held constant. This should be achievable in practice for such a modest increase in prolificacy. However, this may not be sustainable for larger increases in litter size.

Analyses of gross margins per ha showed that stocking rate, lambs weaned per ewe and lamb prices were equally important sources of variation with each of these explanatory variables accounting for 18 to 20% of the observed variation. Replacement cost was the next most important source of variation and accounted for about 5% of the total. These effects were consistent across years. The average effects of changes in stocking rate, LW<sub>J</sub>, lamb price and replacement cost on GM/ha are shown in Table 10 from analyses involving only these explanatory variables. These results show that a 10% increase in stocking rate (0.95 ewes/ha) has a smaller effect on GM/ha than an equivalent proportional change in LW<sub>J</sub> (0.12) (£19.7 vs £30.3).

**Table 10: Effects of changes in explanatory variables on gross margin per ha (averaged across 3 years)**

Change	Effect
Increase stocking rate by 1 ewe/ha	£20.7
Increase LW <sub>J</sub> by 0.1	£24.4
Increase lamb price by £1	£9.1
Reduce replacement costs by £1/ewe	£6.9

Since stocking rate and number of lambs weaned per ewe are essentially independent, the gross margin per ha can be substantially increased by simultaneous changes in both of these components. Thus if stocking rate is increased from 9.5 to 11 ewes/ha and lambs weaned per ewe is raised from 1.24 to 1.4 the expected increase in GM/ha is £70. This represents an increase of 26% on the average GM/ha (excluding direct payments) recorded for 1994 and over 30% relative to the average in 1995.

The analyses described above showed that a statistical model involving stocking rate, number of lambs weaned, lamb price and replacement cost simultaneously account for just over 50% of the variation in gross margin per ewe and a slightly larger proportion (55%) of the observed variation in gross margin per hectare. When feed costs were added to these models the proportion of variation accounted for increased to around 70%. This means that if all of these variables are held constant the coefficient of variation in gross margins will still be relatively large (> 25%). This indicates that other factors, such as income from sale of cull sheep and wool and miscellaneous costs, need to be examined to determine how these can be manipulated to increase margins.

The principal results of this study is that gross margin is strongly influenced by the number of lambs reared per ewe joined, whether considered on a per unit area or per ewe basis. Stocking rate is equally important when margins are being examined on a per unit area basis.

Results from research on grassland management and breeding have identified clearly defined methods which can be used to increase stocking rate and ewe productivity and these options have been tested and incorporated in mid-season production systems which have yielded consistent performance over time at Blindwell, Knockbeg and Athenry. Thus, the use of planned and controlled grazing management systems at Blindwell and Knockbeg have supported annual stocking rate equivalent to around 14 ewes/ha while breed evaluation studies have consistently shown that Belclare-cross ewes yield at least an extra 0.2 lambs weaned per ewe joined relative to any other ewe type typically used on lowland farms. Given the essential independence of these two factors it is arguable that gross margin per hectare can be increased by about £120 provided other variable costs do not increase disproportionately. Perhaps a more modest target for lowland flocks would be a stocking rate of 12 ewes/ha and 1.5 lambs reared per ewe joined. Movement to this target from current average values is expected to yield an increase of £90 in gross margin per ha.

The increases indicated represent relative improvements of between one third and one half in margins calculated net of any direct payments. Even with some safety discount on these projections the results presented show that sheep producers can achieve substantial increases in gross margins by effectively exploiting available and tested information on grazing management and breeding.

## EU SHEEP MEAT POLICY

The EU introduced a Common Agricultural Policy for sheepmeat in 1980 and the policy has been modified on a number of occasions since then. The most fundamental reform was in 1992 under the McSharry Reform, which took effect in 1993. The method of financial support are now the same in each EU country and are based on a common ewe premium with an additional special “Rural World” premium and headage payment paid on ewes within disadvantaged areas. Additional elements of the policy include voluntary restraint agreements (VRA) and quotas on sheepmeat from non-EU countries plus an aid to private storage scheme.

EU policy supports are critical to the financial viability of the Irish sheep sector and in 1999 direct payments to sheep producers was £122.38 million compared to £153.5 million from the sale of wool and sheepmeat.

The 1999 reform of CAP made no specific reference to the sheep sector. However these reforms could have implications for the sheep enterprise by changing the relative profitability of the beef and sheep enterprises. The majority of Irish sheep producers also have a cattle enterprise and farmers adjustments to the beef proposals will impact on their sheep numbers.

The projected decline in beef and white meat prices will result in a decline in demand for sheepmeat. The ewe premium will not fully compensate Irish sheep producers for the decline in revenue due to the changes introduced in calculating the common EU ewe premium in 1992. This will result in sheep profit margins declining relative to cattle and lead to farmers switching resources out of sheep production, as has occurred from 1992 onwards.

Beef farmers have been compensated for the expected decline in beef prices by increases in premia on suckler cows, steers and bulls. A new slaughter premium of £63 payable on all slaughtered beef animals will further enhance cattle margins relative to sheep. These increases, which are not linked to the market price will make profit margins from cattle more attractive than from sheep production where no additional payments are being proposed.

Increase in extensification premium from £28 to £63 per eligible beef animal at stocking rate of 1.6 LU per ha or less could lead some farmers reducing sheep number to ensure eligibility for extensification premia. The new methodology for calculating stocking rate based on actual livestock numbers with the inclusion of heifers could also lead to reduced sheep numbers to qualify for extensification on cattle.

FAPRI-Ireland produced “base-line” projections to 2007 for the EU and Irish sheep sector in early 2000. The main objectives of FAPRI Modelling Project is to provide a benchmark against which policy development can be measured and to analyse and model effects of differing policy scenarios. The FAPRI outlook for sheep in the EU to 2007 is shown in Table 11.

**Table 11: EU-15 Main Sheep Variables 1998 With Baseline Projections for 2007**

	1998	2007	% Change 1998 - 2007
Reference price (euro/100 kg)	326	332	2%
Ewes ('000 head)	70,253	69,312	-1%
Production ('000 t)	1,137	1,128	-1%
Imports ('000 t)	238	234	-2%
Domestic use ('000 t)	1,377	1,359	-1%
Exports ('000 t)	2	3	50%

*Source: Westhoff and Young (2000).*

Sheep prices in the EU increased post BSE resulting in increased supplies of sheepmeat. This in turn resulted in declining prices in the late 1990's and falling sheep numbers. FAPRI projects that there should be some contraction in EU supply of sheepmeat over the period 1998 to 2007.



FAPRI projections for sheep numbers in Ireland to 2007 are shown in Table 12. The reasons for the projected decline are as already stated i.e. changes introduced under the 1990 CAP Reform and also a reduction in hill sheep numbers for environmental reasons.

**Table 12: Irish Main Sheep Variables 1998 Baseline Projections for 2007**

	1998	2007	% Change 1998 – 2007
Sheep Price, (IR£) 40-49kg	47	48	2%
Ewes ('000 head)	4,532	3,629	-20%
Volume of Output	4,031	3,362	-17%
		IR£M	
Value of Output (IR£M (1))	163	139	-15%
Direct Payments (IR£M) (2)	117	93	-21%
Sector Revenue (IR£M) (1)+(2)	280	232	-17%

*Source: FAPRI-Ireland Model.*

*\*Does not include REPS payments.*

## CONCLUSIONS

- Irish sheep numbers peaked in 1992 with 5.3 million ewes claimed on for ewe premium. In 1999, 4.7 million ewes were claimed on for premium.
- The 1992 CAP Reform introduced changes which reduced level of ewe premium and also delivered additional direct payments to cattle and cereals. Farmers responded by switching resources to beef production.
- Output and gross margins for the two main lowland systems, viz. mid-season lamb and mainly store lamb production, has actually declined over the period 1993 to 1999 in current terms. This represents a substantial decline when inflation is taken into account.
- Output and gross margin for early lamb production have increased slightly over the period 1993 to 1999 but have shown more variability than the two main lowland systems.
- Output and margins per hectare for early lamb production have been on average 10 per cent higher than for mid-season lamb due to better technical performance.
- Output, costs and margins for the two hill systems remained virtually static over the period 1993 to 1998.
- The two main indicators of technical performance are weaning rate and stocking rate. There was no change in technical performance over the period investigated.
- Direct payments contributed approximately 30 per cent gross output for the main lowland systems and 70 per cent of the net profit margins. Direct payments formed 69% of gross output for the Blackface Mountain system and there would have been a negative net margin each year were it not for direct payments, as production costs exceeded sales of lamb and wool.
- Analysis of National Farm Survey data showed that an extra 0.1 lambs per ewe increased the gross margin per ewe by £3.83. Analyses of variation in gross margin per ha showed that stocking rate, lambs weaned per ewe and lamb prices were equally important sources of variation with each accounting for 18 to 20% of observed variation.
- A 10% increase in lambs weaned per ewe has a larger effect on gross margin per ha than an equivalent proportional change in stocking rate (£30.3 v £19.7 per ha). However since stocking rate and weaning rate are essentially independent, the gross margin per ha can be substantially increased by simultaneous changes in both variables.
- Gross profit from sheep production is strongly influenced by the number of lambs reared per ewe joined whether considered on a per ewe or per unit area basis. Stocking rate is equally important when considered on a per unit area basis.
- EU policy supports are critical to the financial viability of the sheep sectors with direct payments amounting to £122.4 m in 1999 compared to £153.5m in from sale of animals and wool.
- The 1999 Reform of the Common Agricultural Policy will result in sheep profit margins declining viz a viz cattle and cereal margins. This will inevitably lead to farmers switching to the more profitable enterprises and consequently reduced sheep numbers.

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