Outlook 2015
Economic Prospects for Agriculture

CONTRIBUTORS

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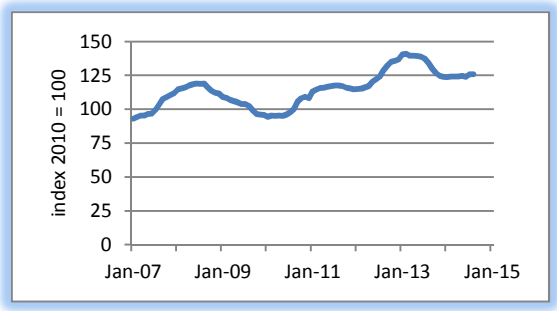
Executive Summary

Overall Sector: Summary Review of 2014

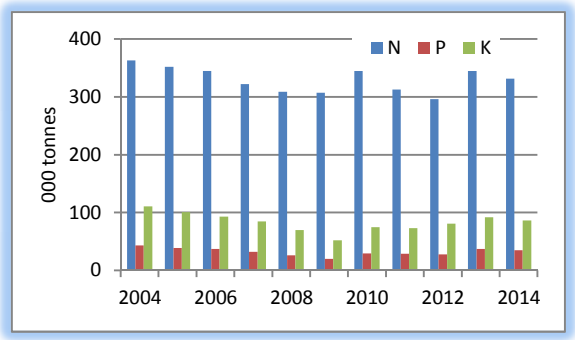
- Excellent weather through much 2014 meant that growing conditions were generally better than normal and this boosted grass growth and cereal yields.
- Lower input expenditure was a feature of all the grassland enterprises in 2014, driven by lower levels of feed and fertiliser use, as well as lower feed, fertiliser and fuel prices.
- Milk producers and beef finishers experienced a decrease in output prices in 2014 which eroded the benefit of these lower feed, fuel and fertilisers bills.
- Milk prices fell by 2 cent per litre, almost the same amount as the decline production costs. Dairy margins per litre declined only marginally in 2014.
- While suckler farmers saw their average output prices fall, the estimated decrease in input expenditure meant that 2014 margins improved on levels earned in 2013. Beef finishers also experienced lower production costs, but the impact of lower costs did not fully offset the impact of lower finished cattle prices and margins declined by 9 percent in 2015.
- Sheep farmers saw their margins improve in 2014 as their costs of production decreased while lamb prices on average were higher than in 2013.
- A favourable summer meant that cereal yields for major crops were above normal in 2014, but a large global harvest triggered a steep drop in cereal prices. While cereal direct costs were slightly down this was insufficient to negate changes in output value. Consequently, cereal margins were down for nearly all crops in 2014.
- Pig producers experienced a decrease in pig prices in 2014, which was mainly due to the Russian embargo, but benefitted from declining feed prices through most of the year. Overall, their margins increased in 2014.

Figure E1: Index of Irish Cattle Feed Prices.



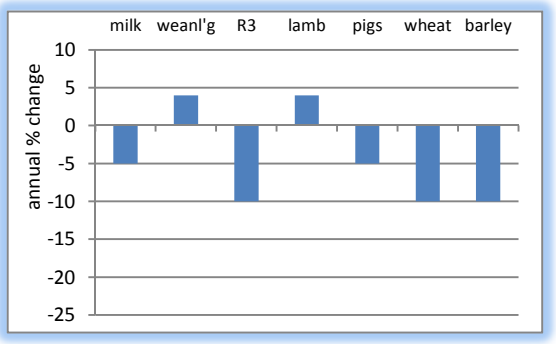
Source: CSO

Figure E2: Fertiliser sales volume 2014 - 2014



Source: DAFM (various years)

Figure E3: Change in Output Prices 2014 vs 2013

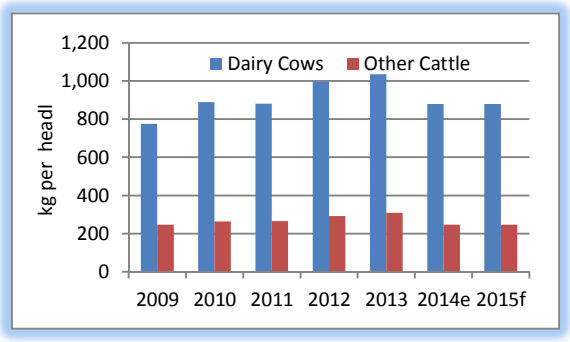


Source: Authors' estimates

Overall Sector: Summary Outlook for 2015

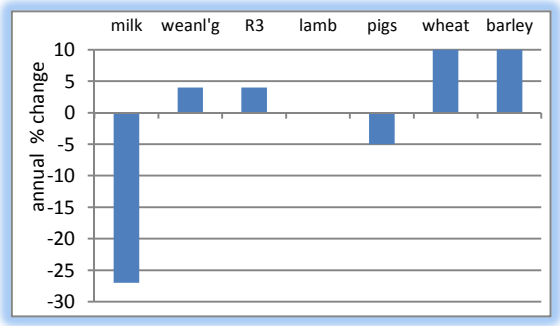
- The outlook for 2015 for the Irish agriculture sector as a whole is conditioned by the assumption that normal weather prevails.
- With normal weather there should be no significant change in feed bills in 2015 for all grassland enterprises.
- Rising fertiliser prices and stable fertiliser usage should lead to a moderate increase in fertiliser expenditure in all grassland systems in 2015.
- Tillage producers will experience a slight increase in fertiliser prices and pig producers will face a slight upward movement in feed costs in 2015.
- A further decline in fuel prices is forecast in 2015, with electricity prices remaining stable.
- Milk prices are expected to be much lower in 2015, perhaps by as much as 28 percent.
- Beef prices should improve in 2015 and with costs of production relatively unchanged, margins should be up for all systems.
- Sheep prices are expected to remain stable in 2015 and, along with a minor reduction in production costs, this would be expected to lead to increased sheep margins. However, the decoupling of the Sheep Grassland Scheme payment in 2015 is forecast to lead to a reduction in the mid-season lowland lamb enterprise gross margin.
- Stock levels on international grain markets remain at relatively low levels in spite of the good global harvest in 2014. This means that, yet again, cereal prices will be highly dependent on growing conditions globally. The current outlook for cereals prices for harvest 2015 is for an increase over 2014 levels of around 10 percent. Overall costs on cereal farms look set to increase very slightly. If yields revert to normal levels, then cereal margins in 2015 will be only very slightly improved on 2014 levels.
- Pig meat prices are set to fall slightly in 2015 due to increased EU supplies, and marginally higher feed prices will also negatively impact on margins in 2015.

Figure E4: Dairy and Beef Feed Use 2009 - 2015



Source: Authors' estimates derived from DAFM and CSO data
Note: e = estimate f= Forecast

Figure E5: Forecast Change in Output Prices 2015 vs 2014

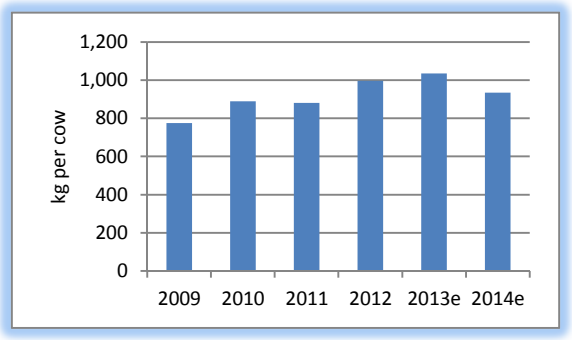


Source: Authors' estimates

Dairy: Review of 2014

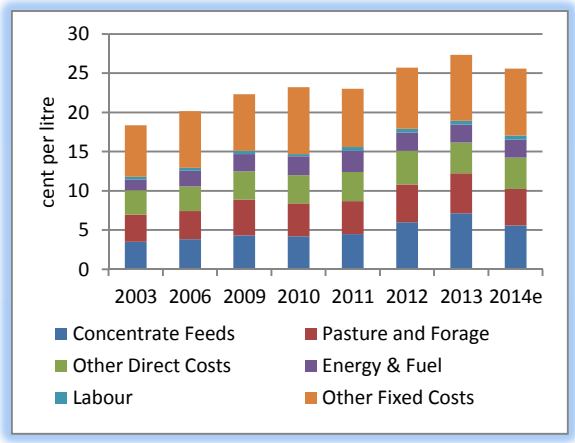
- Irish milk prices remained at elevated levels through the peak delivery period of 2014 but fell late in the year, reflecting the depressed world market. As a result, the annual average national milk price for 2014 is estimated to have fallen by 5 percent to an average of 37.6 cent per litre.
- At the close of 2014 milk production levels were substantially above normal, with a superlevy bill of over €100 million in 2015 now a serious possibility. It is estimated that aggregate milk production increased by 4 percent in 2014.
- Following two years of weather related elevated feed use in 2012 and 2013, feed usage on dairy farms is estimated to have fallen by 15 percent in 2014. Declining usage combined with an 8 percent reduction in price resulted in an estimated 22 percent reduction on dairy feed expenditure in 2014.
- Fertiliser use had been quite elevated in 2013 following the fodder crisis but declined 6 percent in 2014, while prices are estimated to have declined by 8 percent in 2014 on the 2013 level. Falling usage and price is estimated to have resulted in a 14 percent decrease in fertiliser expenditure.
- Following a high cost year in 2013, total milk production costs are estimated to have declined by 7 percent in 2014.
- The reduction in production costs was insufficient to fully offset the declining milk price and it is estimated that the net margin per litre of milk produced declined by 1 percent in 2014 to a national average of 12 cent per litre.
- Given the increase in national milk production in 2014, it is likely that production also increased at a per hectare level. With a 4 percent increase in milk production per hectare, it is estimated that the net margin per hectare increased by 2 percent to a national average of €1,287.

Figure E6: Irish Dairy Cow feed use 2009 to 2014



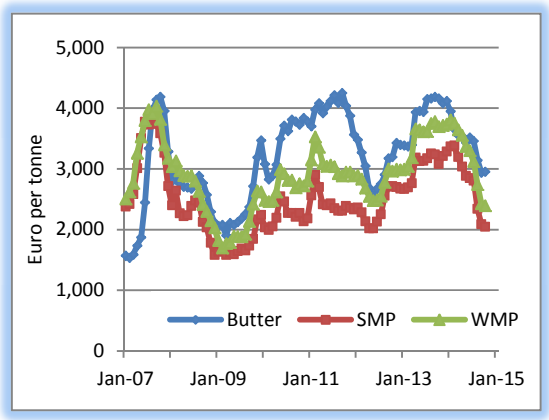
Source: FAPRI-Ireland (adapted from DAFM and CSO data) 2014 figure is an estimate

Figure E7: Average Total Milk Production Costs (cent per litre) in Ireland: 2003 to 2014



Source:Teagasc National Farm Survey and Authors' Estimate

Figure E8: European Dairy Product Prices

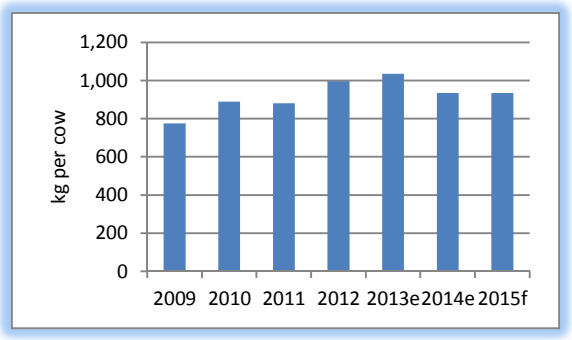


Source: Dairy Co UK

Dairy: Outlook for 2015

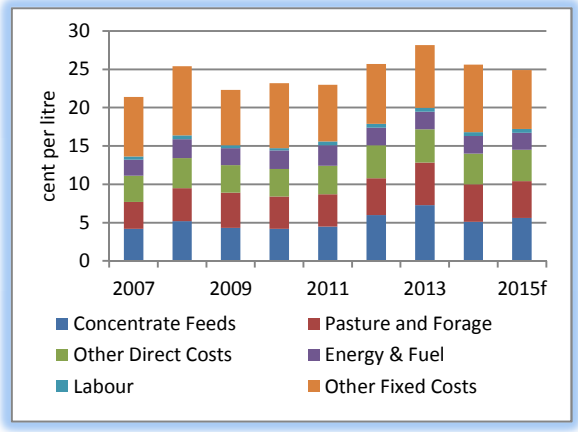
- Dairy markets are expected to remain at very depressed levels into the first half of 2015. It is forecast that milk price will decline by 28 percent in 2015 relative to the 2014 level, bringing the annual average milk price to 27 cent per litre.
- Assuming normal weather conditions in 2015, feed expenditure on dairy farms is expected to remain normal on farms, but may increase on farms that expand production. Fertiliser prices are expected to increase in 2015 by approximately 7 percent.
- With declining fixed costs, total production costs per litre of milk produced are forecast to decline by 3 percent in 2015 relative to the 2014 level, to an average of approximately 25 cent per litre.
- With the removal of the milk quota, 2015 presents the first substantive opportunity to increase milk production since the introduction of the milk quota over 30 years ago.
- An intentions survey conducted by the Teagasc National Farm Survey suggests that Irish national milk production will increase by 10 percent in 2015 relative to the 2014 level. It is expected that the bulk of this expansion will come from existing cows on existing farmland.
- On a per litre basis, net margins are forecast to fall by 82 percent in 2015 relative to the 2014 levels, to an average of 2 cent per litre.
- The annual net margin per hectare is forecast to be €230 per hectare in 2015 assuming no change in output per hectare.
- Farmers expanding production are assumed to benefit from some economies of scale. Farmers expanding production by 10 percent per hectare will see net margins falling by approximately 76 percent to an average of €308 per hectare.

Figure E9: Irish Dairy Cow feed use 2009 to 2015



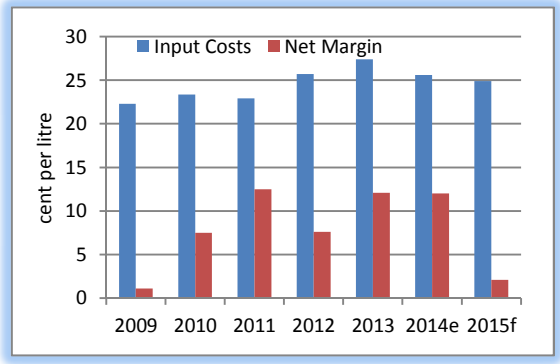
Source: FAPRI-Ireland (adapted from DAFM and CSO data) 2013 and 2014 figures are estimates and 2015 figures is a forecasts

Figure E10: Average Total Milk Production Costs (cent per litre) in Ireland: 2003 to 2015



Source:Teagasc National Farm Survey,Authors' Estimate for 2014 and Author's Forecast for 2015

Figure E11: Dairy Production Costs and Net Margin

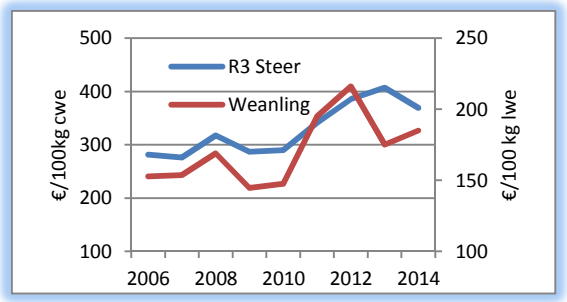


Source: Teagasc National Farm Survey,Authors' Estimates for 2014 and Authors' Forecast for 2015

Cattle: Review of 2014

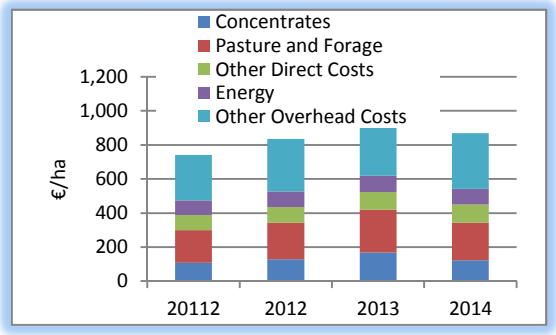
- 2014 saw decreases of over 10 percent in the price of finished cattle relative to 2013, while prices of weanlings on average increased in 2014 by 4 percent.
- Diverging output price trends in finished cattle and weanling prices have meant that while the estimated value of output on Single Suckling and Cattle Finishing enterprises both declined in 2014, the magnitude of the declines are quite different.
- Large decreases in the volume of feed used and reductions in fertiliser use as well as lower feed, fertiliser and fuel prices led to large decreases in direct costs of production on all cattle farms in 2014 when compared with 2013.
- The decrease in costs of production offset fully the impact of lower finished cattle prices on margins earned by Single Suckling enterprises. With higher weanling prices and significantly lower direct costs of production, margins on Single Suckling enterprises are estimated to have increased by 10 percent when compared with 2013.
- In 2014 the average gross margin per hectare earned on Single Suckling enterprises is estimated to be €325 per hectare.
- Cattle Finishing enterprise output value decreased due to both lower prices of finished cattle sold off of the farm and some increases in the prices of weanlings purchased in 2014.
- The large decrease in output value per hectare on Cattle Finishing enterprises was only partially offset by the large reductions in direct costs of production.
- Gross margins per hectare for Cattle Finishing enterprises in 2014 are estimated to have decreased by 9 percent when compared with 2013.
- In 2014 the gross margin earned on Cattle Finishing enterprises was €360 per hectare.

Figure E12: Finished Cattle and Young Cattle Prices



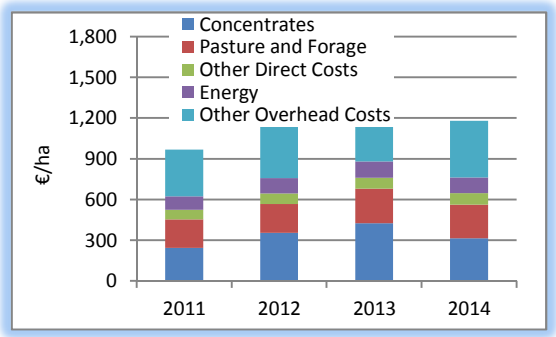
Source: 2005-2013 DG Agri, CSO, 2014 Authors' estimate

Figure E13: Costs of Production Single Suckling (SS)



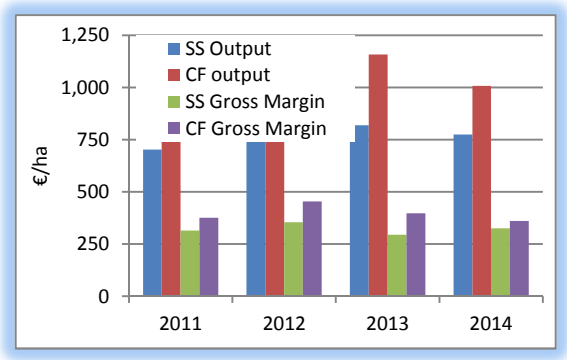
Source: 2011,2012 & 2013 Teagasc NFS, 2014 Authors' Estimate

Figure E14: Cost of Production Cattle Finishing (CF)



Source: 2011, 2012 & 2013 Teagasc NFS, 2014 Authors' Estimate

Figure E15: Output and Gross Margin

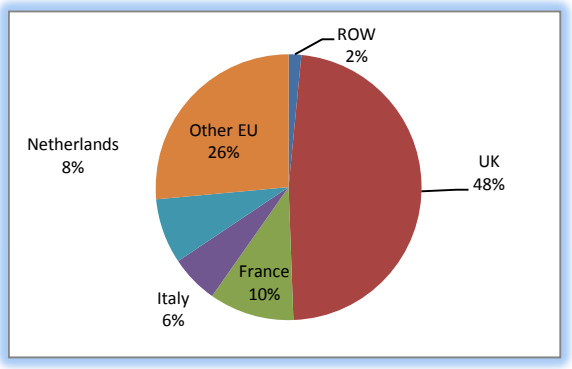


Source: 2011,2012 & 2013 Teagasc NFS, 2014 Authors' Estimate

Cattle: Outlook for 2015

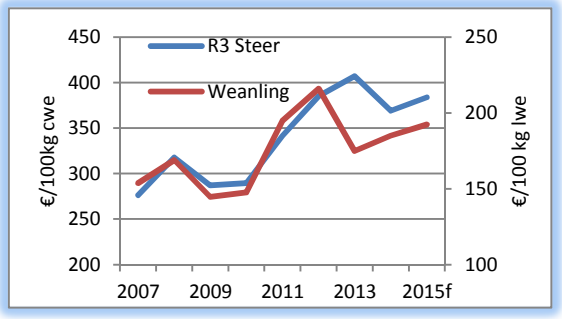
- EU supplies of beef are forecast to be stable with weakness in the Eurozone demand likely to partially offset the positive impact of tighter supplies in Ireland and the UK on Irish prices.
- Global beef markets in 2015 will remain relatively tight and imports of beef into the EU are forecast to grow in 2015.
- The UK remains Ireland's most important beef market and the relatively strong growth in the UK economy and falling unemployment is forecast to lead to increased demand for beef in 2015.
- The continuation of the Eurozone recession and falling demand for beef in continental Europe remains the major threat to the recovery of Irish cattle prices.
- Our forecast is for Irish finished cattle prices to increase by 4 percent in 2015 relative to the 2014 level. Young cattle prices are forecast to grow in line with finished cattle prices.
- Direct costs of production in 2015 are not forecast to dramatically change relative to 2014, with expenditure 3 percent higher due largely to increases in pasture and forage costs.
- While input use volumes in 2015 are forecast to remain unchanged on the 2014 levels, expenditure is forecast to increases as a result of increases in fertiliser prices and other direct costs. Expenditure on purchased feed is forecast to be unchanged from 2014.
- Direct costs of production on Single Suckling and Cattle Finishing enterprises are forecast to increase by 4 and 3 percent respectively.
- With higher output values, as a result of the forecast growth in cattle prices and somewhat higher direct costs of production, changes in margins on Single Suckling and Cattle Finishing enterprises in 2015 will be very small.
- In 2015 gross margins per hectare on Single Sucking enterprises are forecast to increase by 5 percent to €340 per hectare.
- Higher young cattle prices moderate the impact of improvements in finished cattle prices to leave forecast gross margins on Cattle Finishing enterprises 6 percent higher at €383 per hectare.

Figure E16: 2014 Irish Beef Export by Volume



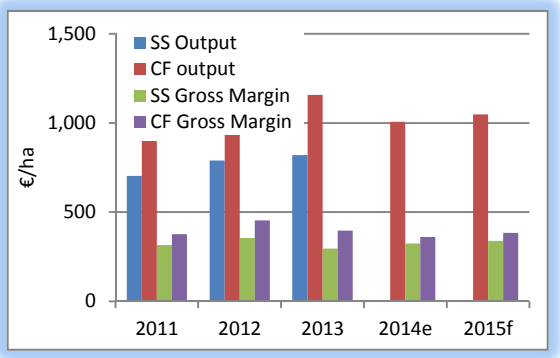
Source: Eurostat COMEXT (year through September)

Figure E17: Forecast 2015 Cattle prices



Source: Authors' forecast

Figure E18: Single Suckling (SS) and Cattle Finishing (CF) Output and Gross Margin per ha

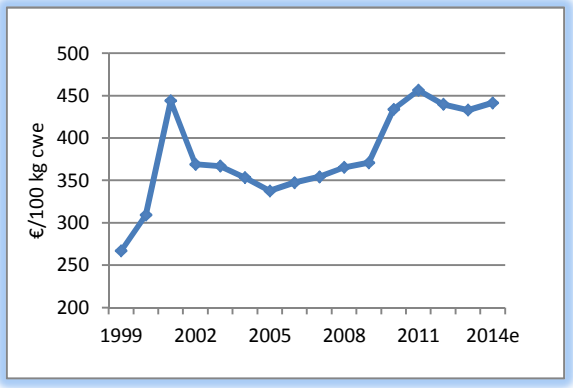


Source: 2011-2013 NFS; 2014 Authors' estimate, 2015 Author's forecast

Sheep: Review of 2014

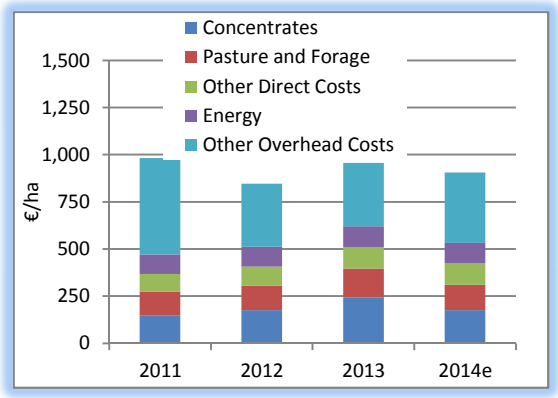
- European lamb market prices in 2014 were higher than in 2013.
- 2014 prices in Ireland are estimated to have been on average 4 percent higher than in 2013.
- Declining EU production of lamb and lower imports of lamb from outside of the EU led to higher lamb prices despite the on-going weakness in demand for sheep meat due weak economic growth in the Eurozone.
- Costs of production for Irish mid-season lowland lamb enterprises declined dramatically in 2014 due to the return to normal input use levels following the fodder crisis of 2012/13.
- The positive impact of lower volumes of input use was augmented by generally lower input prices, particularly for feed.
- Gross margins per hectare for Irish mid-season lowland lamb producers are estimated to have increased in 2014 due to significantly lower direct costs per hectare and higher output value due to improvements in lamb prices in 2014.
- In 2014 gross margins per hectare on mid-season lowland enterprises are estimated to be €651 per hectare.

Figure E19: Irish Sheep price with estimate for 2014



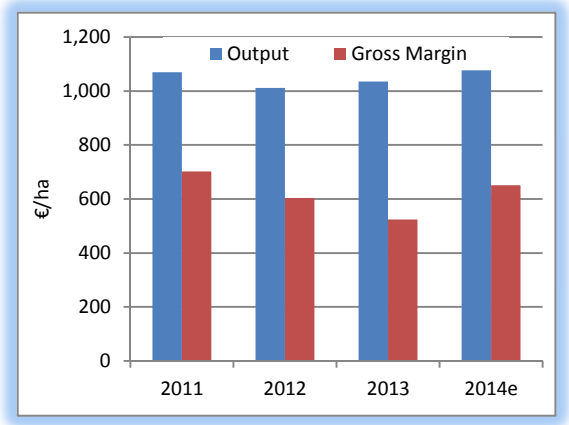
Source: 1999-2012 DG Agri; 2014 Authors' Estimate

Figure E20: Average Sheep production costs 2011-2013 and estimate for 2014



Source: 2011-2013 NFS; 2014 Authors' estimate

Figure E21: Average Sheep output & margin estimate for 2014

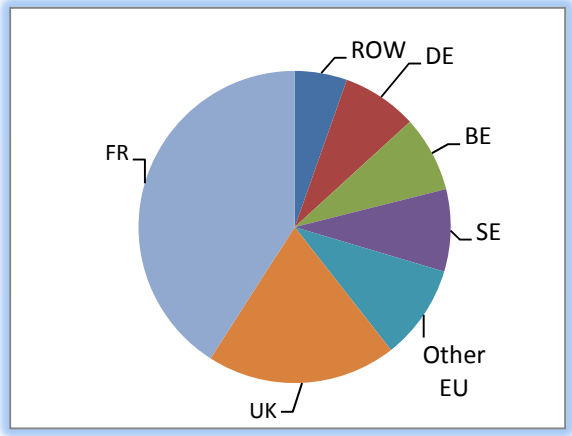


Source: 2010-2013 NFS; 2014 Authors' estimate

Sheep: Outlook for 2015

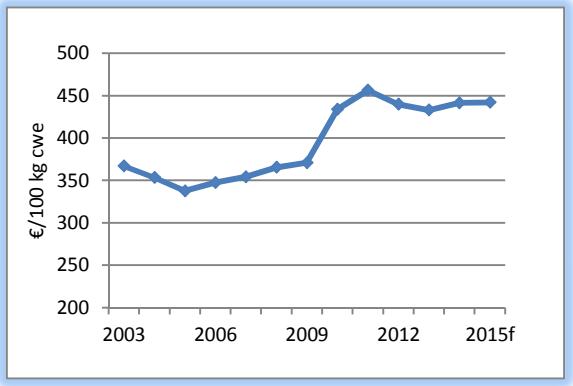
- The outlook for Irish and EU lamb prices for 2015 should be characterised by stability, but there are important downside risks due to the weakness of EU demand.
- The tightening in global supplies of mutton and lamb observed in recent years is forecast to continue in 2015.
- Despite reduced third country lamb imports in to the EU and stable to contracting EU supplies of lamb, prices are not forecast to increase in 2015 due to forecast contraction in demand for lamb on EU markets.
- Sheep feed expenditure is forecast to decline in 2015. Sheep feed is mainly consumed in the first half of the year. Even though feed prices are forecast to rise in the back end of 2015, prices in the first half of 2015 are forecast to be below prices in the same period of 2014.
- Fertiliser prices are forecast to increase in 2015.
- Feed and fertiliser volumes are expected to remain at close to the normal levels of use observed in 2014.
- With slightly higher costs of production in 2015 and lower output value - because of the decoupling of the Sheep Grassland Scheme payment from sheep production - gross margins for mid-season lowland lamb enterprises in 2015 are forecast to decrease by 9 percent.
- In 2015 the average gross margin per hectare earned by Irish midseason lowland lamb enterprises is forecast to be €593 per hectare.

Figure E22: 2014 Irish Lamb Exports by Volume



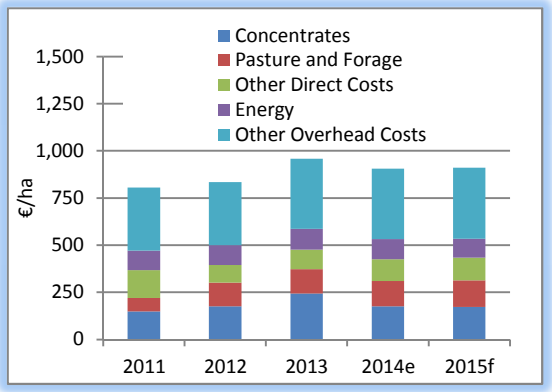
Source: Eurostat COMEXT (year to end of September)

Figure E23: Sheep price forecast for 2015



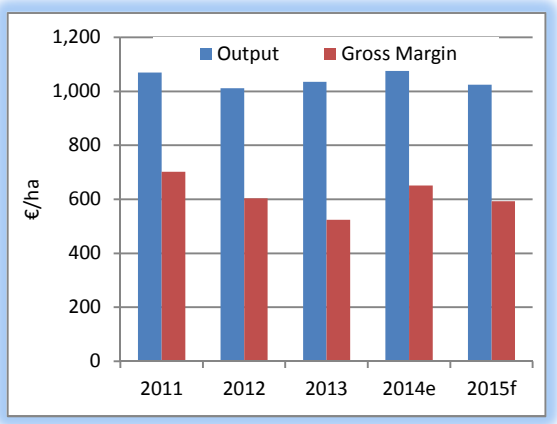
Source: 2003-2013 DG Agri; 2014 Authors' Estimate; 2015 Authors' forecast

Figure E24: Sheep production cost forecast for 2015



Source: 2011-2013 Teagasc NFS, 2014 Authors Estimate, 2015 Author Forecast

Figure E25: Average Sheep output & margins with forecast for 2015

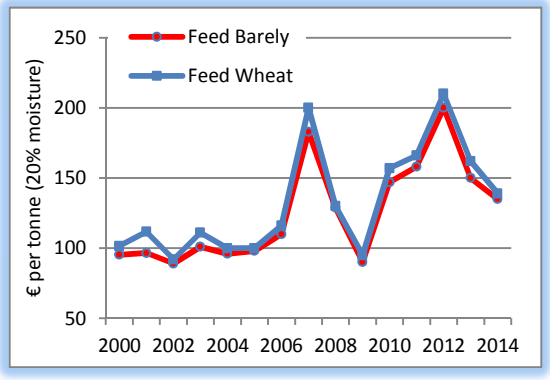


Source: 2011-2013 Teagasc NFS, 2014 Authors Estimate, 2015 Author Forecast

Cereals: Review of 2014

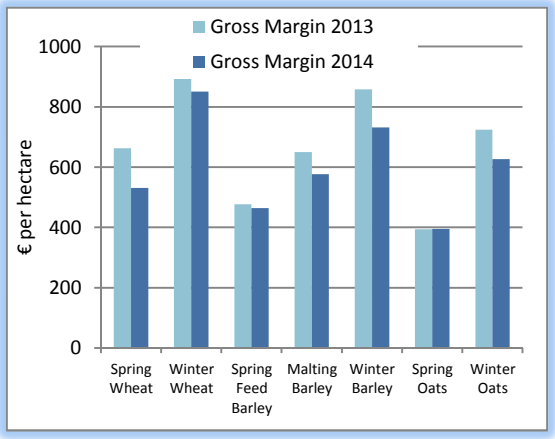
- Improved cereal yields across the key growing regions of the world led to an increase in production and decreases in grain prices in 2014. Final prices received by farmers (accounting for quality, straw receipts and forward sales) are estimated to have decreased by about 10 percent.
- However, these price decreases were offset to some extent by above average yields of the main cereal yields in 2014. For example, Spring barley yields increased by 0.4 tonnes per hectare, while Winter wheat yields increased by 0.9 tonnes per hectare, compared to 2013.
- Direct costs of production on cereal farms decreased in 2014 compared to 2013, but not to the same extent as that witnessed on livestock farms. Seed costs on cereal farms witnessed the largest per cent increase but seed costs remain a relatively small component of costs overall on these farms. Declines in other cost components such as fertiliser and energy meant that direct costs of production decreased by about 5 percent in 2014. Overhead costs increased very marginally between the two years.
- The net effect of output value and input cost changes on cereal gross margin was a decline in the gross margins on nearly all cereal crops in 2014. The gross margin for winter wheat is estimated to be down by about €50 per hectare, while the margins for the other main crops, winter barley and spring barley, are estimated to be down by about €125 and €10 per hectare respectively.
- There remains a wide variation in terms of economic performance of individual cereal farms nationally. It is estimated that the average cereal enterprise on specialist tillage farms will return a slightly negative market based net margin in 2014. But behind this average figure is a range, with the bottom 1/3 of farms receiving a negative market based net margin of - €300 to the top 1/3 of farms receiving €260 per hectare.

Figure E26: Irish Farm Gate Cereal Prices 2000-2014



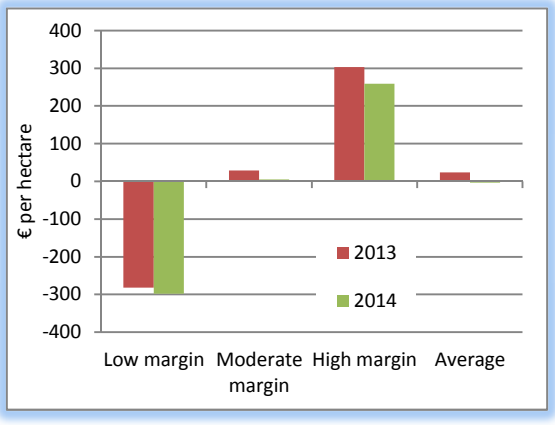
Source: Teagasc, National Farm Survey Data & Author' estimate for 2014

Figure E27: Gross Margin for Main Cereal Crops (2013 Actual and 2014 Estimated)



Source: Teagasc, National Farm Survey Data & Authors' estimate for 2014

Figure E28: Cereal Enterprise Net Margin on Specialist Tillage Farms (2013 Actual and 2014 Estimated)

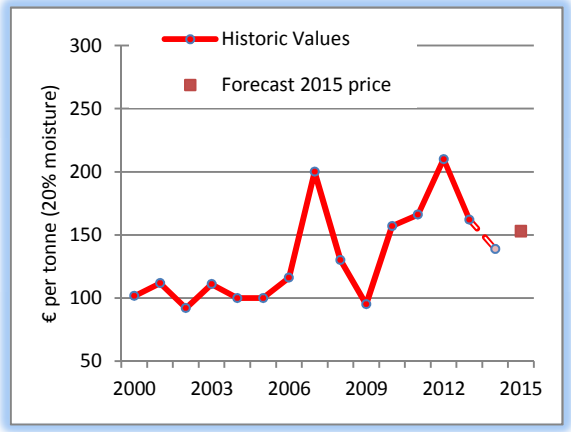


Source: Teagasc, National Farm Survey Data and Authors' estimates for 2014

Cereals: Outlook for 2015

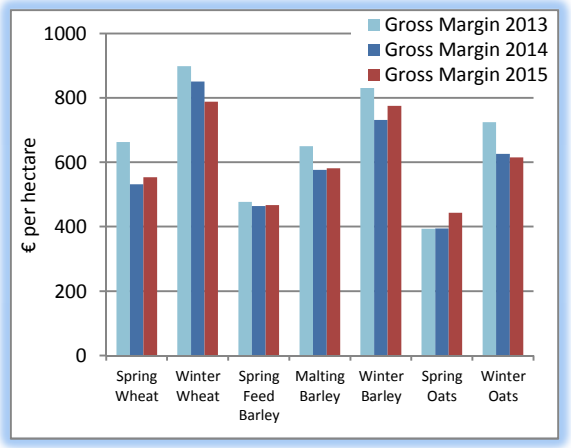
- Given that world grain stocks remain at low levels, the outlook for cereal prices in 2015 is hugely dependent on how sowing and growing conditions impact on the size of the 2015 harvest. At present (November 2014) futures markets indicate that 2015 harvest prices will be about 10 percent higher than 2014 harvest prices.
- Assuming a return to more normal Irish cereal yields in 2015, yields of most cereal crops are likely to increase slightly over the levels recorded in 2014.
- Costs of production on cereal farms are expected to increase very slightly in 2015, with key inputs such as fertiliser, crop protection and other direct costs set to decrease. Any decrease in fuel and seed costs forecast for 2015 are not enough to negate the cost increase in the other items.
- The net effect of an increase in output value, reversion to trend yields, and a slight increase in direct costs, means that the 2015 forecast for gross margins for most cereals is for a very slight increase over 2014 gross margins.
- The gross margin for spring barley and winter barley is forecast to increase by less than €50 per hectare. However, due to projections for winter wheat yields it is forecast that gross margins could actually be slightly less than those achieved in 2014, by about €60 per hectare.
- The forecast for cereal enterprise market based net margin on specialist tillage farms in 2015 is virtually unchanged from the 2014 level, with the average farmer left with only €6 per hectare after all costs are paid.
- It must be remembered that these margin forecasts are very dependent on global growing and harvest conditions in 2015. Bearing this health warning in mind, historic futures prices were evaluated to determine how accurate a measure of actual harvest prices they have been over the past decade. This validation check was used to put a confidence interval on the forecast in cereal price for 2015. This confidence interval tells us that the 2015 feed wheat price could be as low as €122 or as high as €237 per tonne.

Figure E29: Historic, Estimated and Forecasted Farm Gate Feed Wheat Price (2000 – 2015)



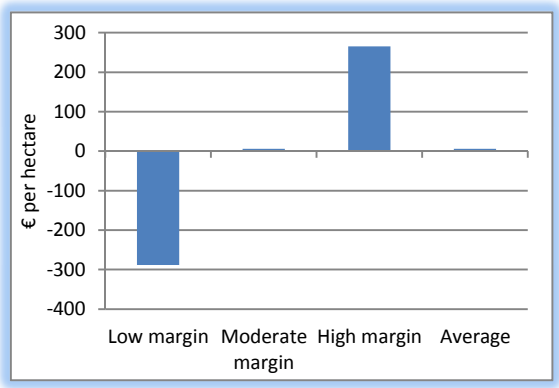
Source: Authors' own estimates and 2015 forecast

Figure E30: Gross Margin for Main Cereal Crops (2013 Actual, 2014 Estimated & 2015 forecast)



Source: Teagasc, National Farm Survey Data & Authors' estimate for 2014 & forecast for 2015

Figure E31: Cereal Enterprise Net Margin on Specialist Tillage Farms, 2015 Forecast

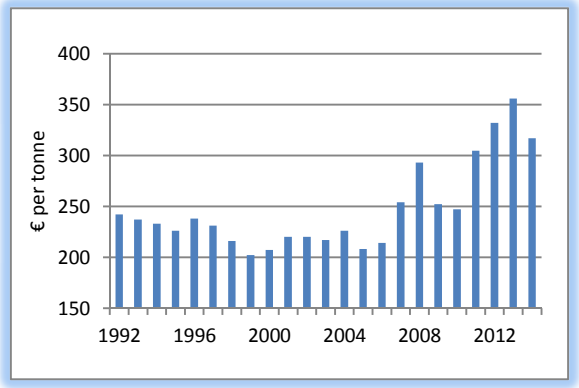


Source: Teagasc, National Farm Survey Data and Authors' forecast for 2015

Pigs: Review of 2014

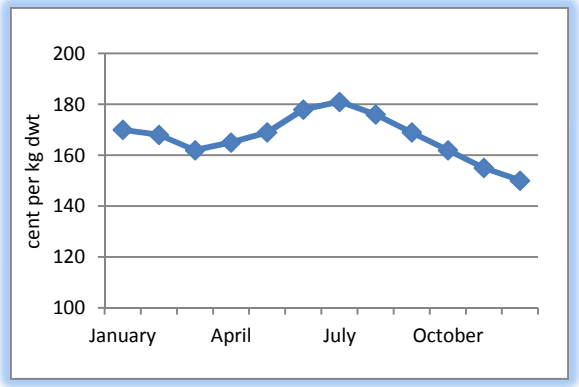
- Following a price rise during 2013 for the main pig feed ingredients, prices stabilised in early 2014.
- Subsequently, prices decreased in the second and third quarters resulting in an annualised drop of 11 percent in compound feed cost per tonne when compared to 2013.
- In spite of this price drop, the 2014 annualised compound pig feed price was still one of the highest in over twenty years.
- The estimated average pig price in 2014 was 167 cent per kg which was significantly above the previous five year average (2010-2014) of 160 cent per kg.
- The Irish pig price fell by 5 percent in comparison with 2013, but was still relatively high.
- The maintenance of this relatively high price arose from a continuing strong Irish export market outside the EU (excluding Russia) combined with a marginally reduced EU pigmeat supply.
- The 'Margin Over Feed' per kg deadweight was 49 cent per kg in 2014, the highest since 2009.
- When the 2014 margin over feed is compared with the average margin over feed of the last five, ten, fifteen and twenty years, the difficult trading conditions and low profitability of recent years is evident.

Figure E32: Irish Compound Pig Feed Price 1992 to 2014



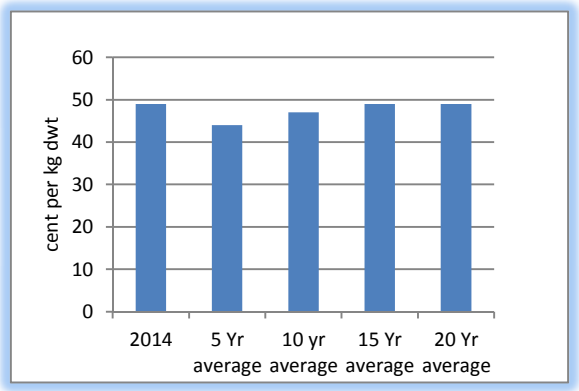
Source: Teagasc Pig Department

Figure E33: Monthly Irish Pig Prices 2014



Source: Teagasc Pig Department
December Figure is an Estimate

Figure E34: Margin Over Feed

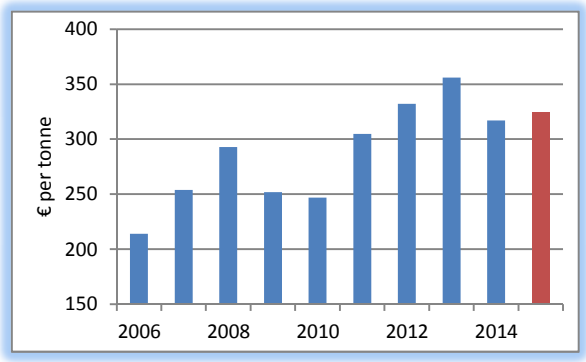


Source: Teagasc Pig Department

Pigs: Outlook for 2015

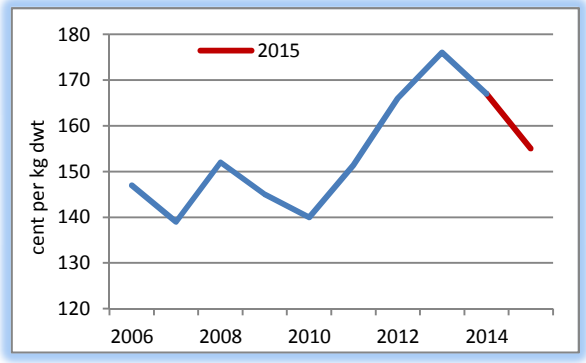
- The bumper wheat and maize harvest from the Black Sea Region and US will filter into Europe during the January – June 2015 period. This is forecast to generate stable prices until mid-2015, where-upon harvest prices for 2015 will dictate feed prices for the latter half of 2015.
- The forecast for the South American soyabean harvest in January 2015 is for one of the largest harvests ever. While this should lead to a fall in soyabean prices in 2015, it may be offset by the forecast increase in Chinese imports.
- The outlook for 2015 is for the annualised composite pig feed cost to rise marginally when compared to 2014 by 3 percent. This would increase the compound feed price from €317 to €325 per tonne.
- The stabilisation in the size of the EU sow herd and increased born alive will lead to a rise in the supply of European pigs in 2015. It is estimated this may be in the region of 2 to 2.5 percent. This increased volume of pigs on the market could trigger an annualised drop of up to 8 percent in pig meat price when compared to 2014, if export volumes are not further increased.
- Two significant factors may give the pig price a boost; the re-opening of the Russian market and the emergence of PEDv or African Swine Fever in Europe. Either of these outcomes would significantly improve the price outlook.

Figure E35: Historical Compound Pig Feed Price and forecast for 2015



Source: Teagasc Pig Department

Figure E36: Historical Irish Pig Prices and forecast for 2015 (c/kg dwt)



Source: Teagasc Pig Department

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Review of Dairy Farming in 2014 and Outlook for 2015

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1. Introduction

Following the adverse impacts of the fodder crisis in 2012, dairy farm incomes made a recovery in 2013 and increased by 28 percent to an average of €63,000. Excellent production conditions in 2014 contributed to a reduction in production costs on dairy farms. However, declining milk prices in 2014 mean that the returns to milk production in 2014 are estimated to be more or less unchanged on the 2013 level. Due to favourable weather and weaker than anticipated import demand, world dairy product markets are currently in a situation of oversupply. Markets are expected to remain depressed in the first half of 2015 and the outlook for Irish dairy farm incomes in 2015 is particularly poor. While it is difficult to be certain how long and how deep the decline in milk prices will be in 2015, at this point the likely outcome for margins in 2015 will be reminiscent of 2009.

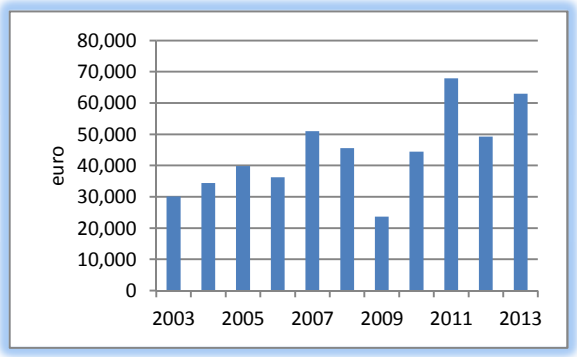
This paper looks back on dairy farm performance in 2013, reviews the outcome for 2014 and looks ahead to the prospects for 2015. Data from the Teagasc National Farm Survey (Teagasc NFS) are used in our review of 2013. The milk price and key input cost estimates for 204 are used to produce an overall estimate of dairy farm margins for 2014. Finally, in the concluding sections of the paper, the forecast for milk price, production costs and dairy farm margins in 2015 is presented.

2. Review of the Economic Performance of Dairy Farms in 2013

National Farm Survey results for 2013 were finalised in May 2014, and the results for dairy farms are summarised here. To examine the economic performance of dairy farms in 2013, we first look at how dairy farm income has changed over the last number years. Figure 1 presents the average Family Farm Income (FFI) on *Specialist Dairy* farms over the years 2003 to 2013. Dairy farm incomes reached an unprecedented high in 2011, averaging almost €70,000. However, the very poor production conditions in 2012 put downward pressure on incomes which fell by 27 percent to an average close to €50,000. Some of that decline in farm incomes was reversed in 2013. The strong growth in milk output value, associated with a milk price of close to 40 cent per litre in 2013 more than offset the impact of rising input expenditure and, as a result, the average income on specialist Dairy farms increased by 28 percent to €62,994.

To further explore the economic performance of dairy farms in 2013, we next to look at how margins have changed in the past few years. Table A1 (see appendix) presents the average gross output, gross margin and net margin per litre of milk produced in 2012 and 2013. Farms producing mainly liquid milk are excluded from the sample, as are herds of 10 cows or less.

Figure 1: Average Income on Irish Specialist Dairy Farms 2003 to 2013



Source: Teagasc National Farm Survey (various years)

The gross output measure includes the value of milk and calf sales minus replacement costs. The value of milk sales typically accounts for more than 95 percent of the gross output of dairy enterprises. Gross output per litre was up 19 percent in 2013 relative to 2012, due to record milk prices. Total direct costs were up by 8 percent in 2013 compared to 2012, mainly due to high levels of expenditure on feed related to the latter stages of the fodder crisis. As a result, the average gross margin in 2013 increased by 28 percent on a cent per litre basis relative to 2012. In 2013, total fixed costs increased by 6 percent relative to 2012. The average net margin in 2013 was 12.1 cent per litre, representing a 58 per cent increase on the 2012 level.

Table A2 (see appendix) presents gross output, total costs and net margin per hectare of forage area

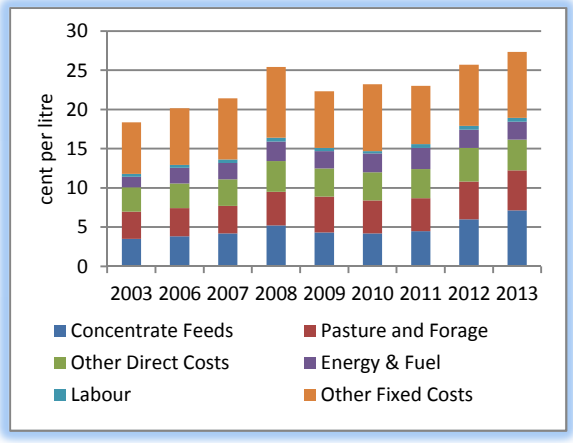
allocated to the dairy enterprise for 2012 and 2013. The decline in production that occurred in 2012 as a result of the fodder crisis was reversed in 2013, with production per hectare increasing by 9 percent.

The cost and margin data in Table A3 (see appendix) allow us to examine the variability in economic performance across dairy farms in 2012 and 2013. Farms are classified on the basis of gross margin per hectare: the best performing one-third of farms (Top), the middle one-third (Middle) and the least well performing one-third (Bottom). On a per litre basis, production costs for the Bottom group (30.0 cent) are 20 percent higher than for the Top group (25.6 cent) and the net margin is almost double for the Top group (14.9 cent) compared to the Bottom group (8.8 cent).

Table A4 (see appendix) presents the variation in output and profit per hectare for the Top, Middle and Bottom groups. Gross margin per hectare for the Top group (€2,634) is almost two and three-quarter times higher than that of the Bottom group (€962). These greater rates of profitability are driven by productivity (higher output per hectare) and efficiency (lower use of concentrate feed and other direct costs per unit of output).

As shown in Figure 2, in 2013 total milk production costs increased for a third successive year. The main drivers of the cost increase in 2013 were expenditure on concentrate feed, which increased due to higher levels of feed usage, higher feed prices, and higher expenditure on other fixed costs.

Figure 2: Total Milk Production Costs (cent per litre) in Ireland: 2003 to 2013



Source: Teagasc National Farm Survey Data

3. Review of 2014 Estimated Performance

This section of the paper presents a review of dairying in 2014. Teagasc NFS results for 2014 will not be available until mid 2015. Therefore, it is necessary to estimate the price and volume of inputs and outputs in 2014, in order to assess the outcome for margins. The following section of the paper first discusses cost estimates for 2014, looking at both input prices and input usage volumes. Finally, the development of dairy product markets in 2014 and the impact on Irish milk prices is discussed.

3.1 Estimated Input Usage and Price 2014

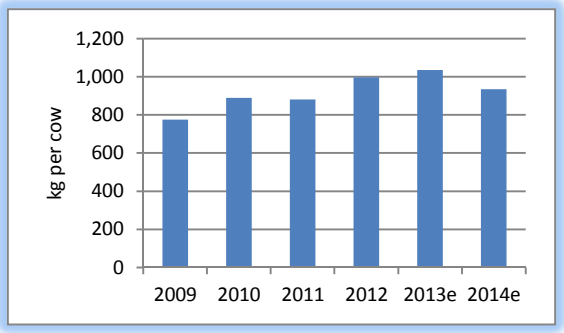
3.1.1 Feedstuff – usage and price 2014

Purchased feed (concentrates) is an important element of dairy production costs in Ireland, typically accounting for about 20 percent of total input expenditure, although this varies by farm and by year.

Following two years of weather related elevated feed use in 2012 and 2013, feed usage volumes are estimated to have returned to a level which would be considered normal in 2014.

Figure 3 shows the average volume of compound feed use per cow, including an estimate for 2014. These data are derived from Department of Agriculture, Food and Marine (DAFM) figures on feed sales, from Central Statistics Office (CSO) data on animal numbers and estimates by the authors.

Figure 3: Compound Feed Purchases per Dairy Cow in Ireland: National Average for 2009 to 2014



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

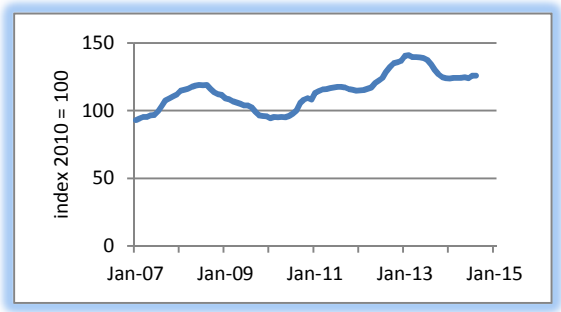
The volume of feed purchased through the first 9 months of 2014 was well below that of the corresponding period in 2013. While official data

are not yet available, it is likely that feed use was also down significantly in the fourth quarter of 2014. Producers may try to rein in milk production, following an extremely high level of production through the peak delivery months in 2014, which will more than likely create a super levy obligation in 2014/15. The outcome in terms of feed use for 2014 will vary by farm and by region, but for dairy farms on average it is likely to be 15 percent lower in volume terms than in 2013.

Weather conditions globally for cereal and other grain producers were quite good in 2013 leading to a good harvest and a fall in international cereal prices. Conditions were even better in 2014, giving rise to a record harvest globally and a continuing recovery in grain stock levels. As it became increasingly evident that cereal crop yields in 2014 would surpass those of 2013, this led to a fall in international grain and animal feed prices. These price reductions were eventually transmitted to the Irish feed market, leaving feed prices at a lower level in 2014 than in 2013.

Figure 4 shows an index of monthly Irish cattle feed prices from 2007 to 2014. The annual average feed price for 2014 is estimated to be €305 per tonne, corresponding to an 8 percent price decrease on the average 2013 level. This decrease in feed prices in 2014, combined with a 15 percent decrease in dairy feed use, suggests that total expenditure on dairy feed in 2014 decreased by 22 percent on the level recorded in 2013.

Figure 4: Monthly Price Index of Cattle Meal in Ireland 2007 to 2014



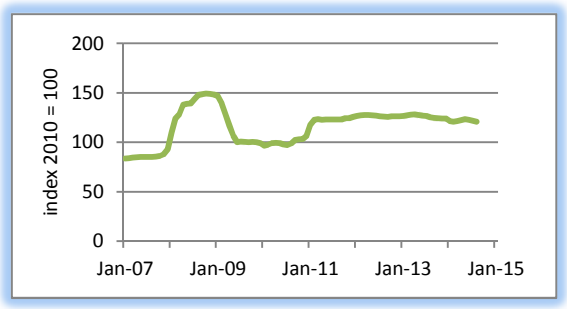
Source: Central Statistics Office (Various Years)

3.1.2 Fertiliser – usage and price 2014

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

Following a period of high volatility in the period 2008 to 2012, fertiliser prices have been more stable over the last three years. Overall fertiliser prices in 2014 are estimated to have declined by about 8 per cent on the 2013 level, reflecting an easing in international energy prices and due to the fact that there were no interruptions to fertiliser supply, despite geopolitical concerns. Figure 5 charts the Irish monthly index of farm level fertiliser prices from 2007 through to 2014.

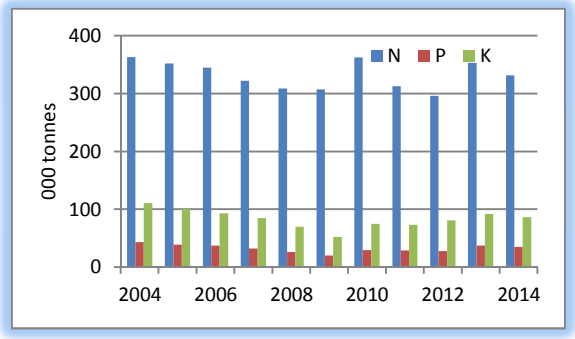
Figure 5: Monthly Price Index of Fertiliser in Ireland for 2007 to 2014



Source: Central Statistics Office (Various Years)

Fertiliser sales rose in 2013 as farmers increased usage to ensure that they had adequate grass supplies and a capacity to rebuild silage stocks. It seems that the good weather conditions of 2014 have allowed farmers to ease back slightly on fertiliser use. DAFM sales figures for 2014 indicate a uniform 6 percent volume reduction across nitrogen (N), phosphorus (P) and potassium (K) sales relative to 2013. These fertiliser sales data are reported in Figure 6.

Figure 6: Irish Fertiliser Sales by Compounders 2004 to 2014



Source: DAFM (various years)

Overall, taking account of the decline in the level of fertiliser sales and the decline in price, this suggests that there has been a decrease of about 14 percent

in fertiliser expenditure on dairy farms in 2014 compared with the 2013 figure.

3.1.3 Contractor Costs usage and price 2014

Contractor costs comprise the remaining 50 percent of the pasture and forage cost element. While no official figures are available, there is anecdotal evidence to suggest that contracting charges for slurry spreading and silage making have been subject to increased price competition and that prices have fallen by 5 percent in 2014. Due to good grass growth levels, the volume of silage making has likely increased in 2014. By contrast the volume of slurry spreading activity may have decreased as animals were housed for shorter than normal over the winter months of 2013/14. On balance, it is estimated that expenditure on contracting was 5 percent lower in 2014 than in 2013.

3.1.4 Pasture and Forage – usage and price 2014

With fertiliser expenditure estimated to be down 14 percent in 2014 relative to 2013 and expenditure on contracting estimated to be down 5 percent, pasture and forage expenditure is estimated to have decreased by 9 percent in 2014 relative to 2013.

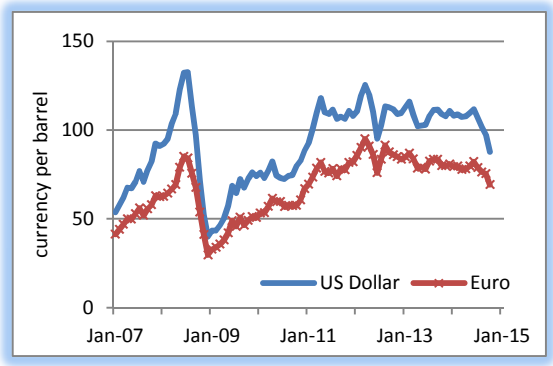
3.1.5 Energy and Fuel – usage and price 2014

Energy and fuel are less important inputs than feed and fertiliser, comprising less than 10 percent of total costs on dairy farms. Electricity typically comprises about 30 percent of the total expenditure on energy and fuel on dairy farms, with motor fuel accounting for the remaining 70 percent.

Motor Fuel: Crude oil prices are presented in Figure 7. Brent crude oil prices moved over a relatively narrow range through much of 2014, but dipped rapidly in the final quarter as it became evident that the market seemed to be moving into an excess supply situation, with oil returning to the market from regions which had been subject to political unrest. Concern about short term international economic growth prospects have also led to a downward revision of oil demand growth expectations in the short term. It is unclear whether OPEC can achieve a consensus to reduce its oil production to drive prices back up. Hence Brent crude oil prices have tumbled to a four year low, dipping below the US$80 mark in November 2014. In spite of this significant decline in oil prices, the average annual price for 2014 will be about US$100, which represents a reduction of just 8 percent on the average oil price in 2013 (US$108).

The Euro/US dollar exchange rate has been volatile in 2014, with the euro appreciating in the first half of 2014 and then weakening considerably against the US currency in the second half of the year. The monthly average rate, as of November 2014, declined to just US$1.25. In spite of this, on an annual average basis, the euro is more or less unchanged in its value against the US dollar in 2014, moving from an average $1.32 in 2013 to $1.33 in 2014. Hence, the estimated average crude oil price for 2014 was over €76 pb, a decrease in euro terms of about 7 percent on the 2013 value of €82pb. Overall, fuel costs in Ireland experienced a decrease in 2014, with diesel prices approximately 3 percent lower in 2014 relative to the 2013 level.

Figure 7: Monthly Average Brent Crude oil prices in Euro and US dollar from 2007 to 2014



Source: St Louis Fed.

Electricity: Electricity costs change infrequently in Ireland due to price regulation. Price increases occurred in 2013, reflecting the rise in the basket of energy costs associated with Irish electricity production. Prices have been relatively stable through 2014. On an annual average basis, prices rose by about 3 percent in 2014 relative to 2013.

Energy and Fuel: Demand by farmers for fuel and electricity tends to be relatively inelastic with respect to price. Therefore, it is assumed that usage in 2014 will be on a par with the 2013 level. The overall expenditure on both electricity and fuel is estimated to have decreased by 2 percent in 2014 relative to 2013.

3.1.6 All Other Direct and Fixed Costs–usage and price 2014

It is estimated that there was a 1 percent increase in agricultural wages in Ireland in 2014. Again, it is assumed that the quantity of labour used on farms is likely to have changed little year on year.

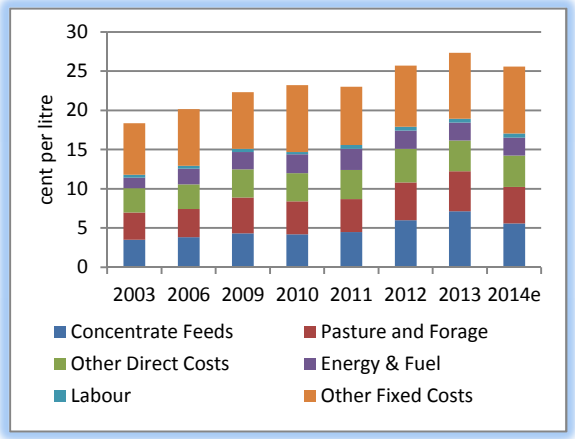
Reflecting the continued low price inflation environment in the general economy, it is estimated that the price of other input items was up 2 percent in 2014. It is assumed that usage of these input items will be unchanged and, as a result, the increase in prices is reflected in a corresponding increase in expenditure on these items.

Fixed costs on a farm are not assigned to a specific enterprise and for the purposes of this analysis here fixed costs are allocated to each enterprise on the farm based on the relativities of the output value from the various outputs of the farm. The high annual average milk price in 2014, especially when considered relative to the declining cattle price in 2014, means that a higher share of the fixed costs of the dairy farm are allocated to the dairy enterprise in 2014 than in 2013. Therefore, it is estimated that fixed costs for the dairy enterprise increased by 2 percent in 2014.

3.1.7 Estimate of Total Input expenditure for 2014

Figure 8 charts the average total cost of production and its subcomponents for selected years from 2003 to 2013 and the associated estimates for 2014.

Figure 8: Total Costs of Milk Production in Ireland for selected years and estimate for 2014



Source: Teagasc National Farm Survey Data and Authors' Estimates
Note: e = estimate

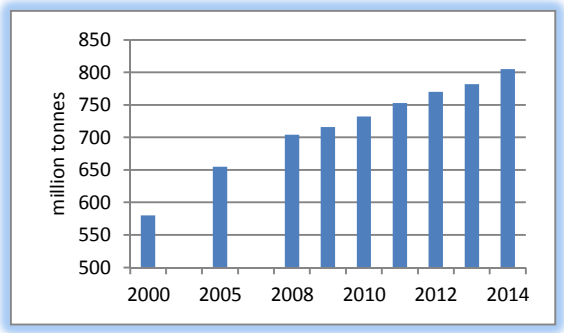
It is estimated that the total cost of production in Ireland in 2014 was 25.6 cent per litre compared to an average of 27.4 cent per litre in 2013. This is equivalent to a 7 percent decrease in costs in 2014 relative to 2013.

3.2 Estimated Output Values 2014

Global milk production figures are shown in Figure 9. In 2014 there was a substantial increase in milk production in the main dairy surplus regions globally (New Zealand, European Union and United States). Provisional estimates suggest that global milk production increased to 805 million tonnes (mt) in 2014, compared with 782 mt in 2013. This annual rate of increase of 3.5 percent is above the trend of the last fifteen years, which was 2.3 percent per annum (IDF, 2014).

The key factors behind the strong increase in global milk production growth in 2014 were the very favourable weather conditions and favourable milk price to feed price ratio, particularly in the first half of the year. New Zealand milk production is estimated to have increased by 9 percent in the 2013/14 season and is forecast to increase by 8 percent in the 2014 calendar year. EU Milk production is likely to be up 4 percent in 2014, while US milk production is also showing an increase of 2.5 percent in 2014.

Figure 9: Global Milk Production selected years from 2000 to 2014



Source: IDF and Authors' estimates
Note: e = estimate

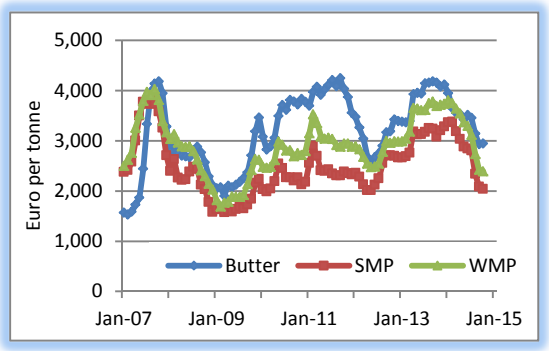
Strong growth in production in the main exporting regions, added to the increase in the volume of milk available for world dairy trade in 2014. This has placed strong downward pressure on international dairy product prices since early in Q2 of 2014. On the demand side China has been a less active buyer in 2014, given that its milk production deficit was smaller than expected. In the knowledge that there was an excess of milk supply globally, buyers retreated from the market waiting to see where

prices would bottom out and this exacerbated the decline in prices in Q2 and Q3 of 2014. The announcement, in August 2014, of an embargo on EU exports to Russia gave international dairy prices further negative momentum. European wholesale dairy product prices are shown in Figure 10.

By the middle of Q4 of 2014 there were signs that prices had stabilised on international dairy markets, but further negative movement in the market leading New Zealand Global Dairy Trade (GDT) Auction remerged in November 2014. Of greater concern is the fact that there had yet to be a full transmission of the decline in dairy prices to the farm gate milk prices, including those in the EU and in Ireland. The rate of decline in farm gate prices was slowed by the fact that processors had contracted to sell product at prices that were higher than the spot rates.

Milk production has therefore remained profitable and production volumes have not yet adjusted to the current market surplus. A slowdown in milk production growth globally is not expected until early in 2015. The delayed transmission between movement in commodity prices and movement in farm milk prices will lengthen the period required for the market to recover.

Figure 10: European Dairy Product Prices 2007-14

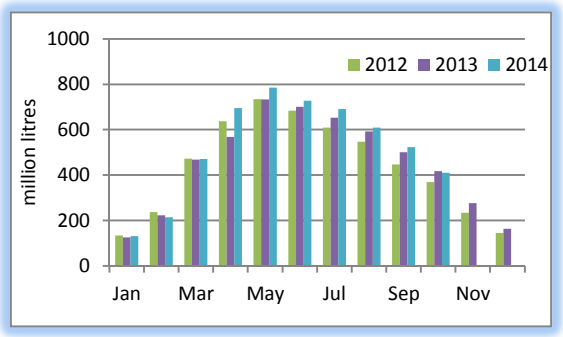


Source: DairyCo UK

Under CAP policy there was no increase in Member State milk quotas in the 2014/15 year. However, as illustrated in Figure 11, Irish milk deliveries in 2014 surged ahead in spite of the fact that the quota system remains in place until April 2015. Excellent grass growing conditions, combined with very favourable milk prices through the peak delivery months and declining production costs, have together created a serious superlevy situation in Ireland in the final year of the quota system. As of October 2014, Irish milk production was 7 percent above the milk quota profile, a trend which if maintained would lead to an Irish superlevy liability of over €100 million in 2015. An excess over quota of 7 percent is equivalent to a super levy bill of about €6,000 for a producer with an average sized farm.

Overall, milk production in the 2014 calendar year is estimated to be up by about 4 percent on the 2013 level. Irish dairy cow numbers, as recorded in June, increased in 2014 to 1.226 million, compared with 1.163 million in 2013, an increase of 5.4. percent (CSO 2014).

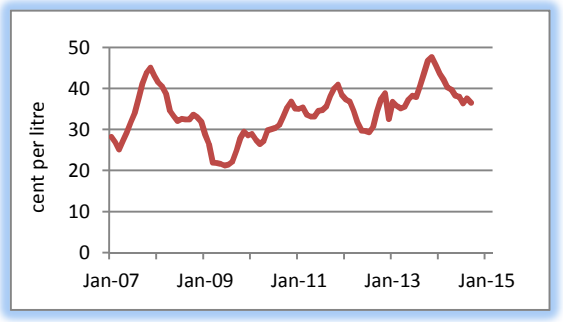
Figure 11: Monthly Irish Milk Deliveries in 2012, 2013 and 2014



Source: CSO, DAFM

Figure 12 presents monthly Irish milk prices recorded by the CSO from January 2007 through to September of 2014. In Ireland the 2014 manufacturing milk price is estimated to have decreased by about 5 percent relative to the 2013 level. Milk prices remained at elevated levels through the peak delivery period of 2014, but began to decline in the second half of the year, beginning to reflect the decline in dairy product prices on the world market. The annual average national milk price is estimated to be 37.6 cent per litre (vat inclusive) in 2014. This is a decline of just 5 percent meaning that producers have yet to experience the full impact of the decline in dairy commodity prices in 2014.

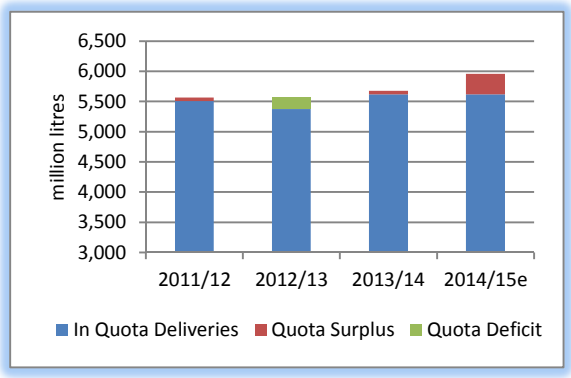
Figure 12: Irish Farm Gate Milk Prices Actual fat (vat incl.) 2007 – Sept 2014



Source: CSO.
Note: Actual fat (VAT inclusive)

Figure 13 illustrates that, on a calendar year basis, Irish milk deliveries in the 2013/14 milk quota year were about 1 percent over quota. With cumulative monthly milk deliveries at the end of 2014 substantially above normal, the sector is in an unprecedented over quota situation in 2014/15 and a large superlevy bill in 2015 is now a certainty.

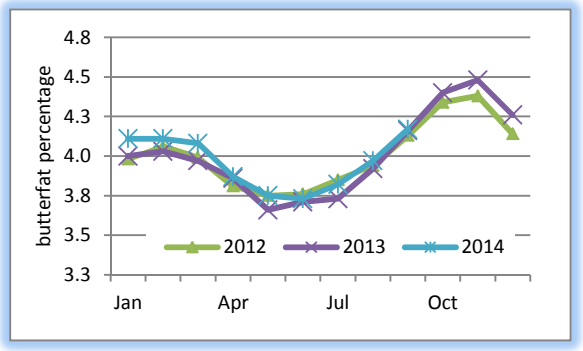
Figure 13: Irish Milk Deliveries (fat adjusted) and Quota Surplus/Deficit (quota year basis)



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

Monthly butterfat levels in 2014 have generally been above the corresponding levels in 2013 as illustrated in Figure 14. The average fat content of Irish milk deliveries in 2014 is likely to rise to about 3.97 percent. When the butterfat adjustment is taken into account, this will further exacerbate the extent of the superlevy bill.

Figure 14: Butterfat in Irish Milk Deliveries 2012-2014

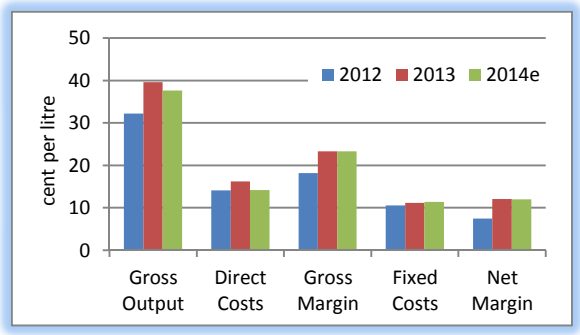


Source: CSO

3.3 Review of Dairy Enterprise Net Margins in 2014

The review of milk prices showed that the average milk price for 2014 was down 5 percent on the 2013 level, while the review of input costs concluded that total production costs on a per litre basis are estimated to have decreased by 7 percent in 2014 relative to 2013. Figure 15 presents the estimated average gross output, production costs and net margin per litre for 2014 in comparison to earlier years.

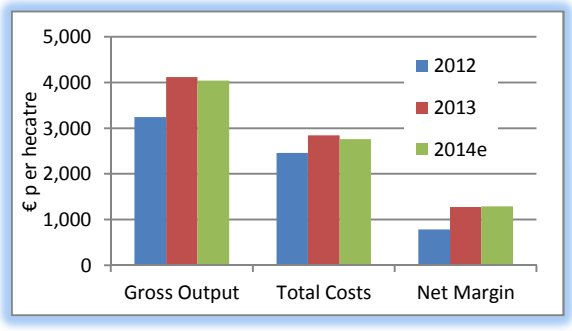
Figure 15: Average Gross Output, Costs & Margins per litre for Irish milk production in 2012, 2013 and estimates for 2014



Source: Teagasc National Farm Survey Data and Authors' Estimates
Note: e = estimate

Gross output per litre is estimated to have decreased in 2014 to 37.6 cent per litre. Input costs also decreased due, in the main, to lower, feed, fuel and fertiliser expenditure. The estimated decrease in direct costs was partially offset by an increase in fixed costs. Overall, the 2 cent per litre drop in total costs in 2014 was almost sufficient to offset the drop in milk prices, meaning that the estimated net margin in 2014 of 12 cent per litre was just 1 percent down on the 2013 level. Estimated average net margin per hectare is shown in Figure 16.

Figure 16: Average Gross Output, Costs & Margins per hectare for Irish Milk Production in 2012, 2013 & estimate for 2014



Source: Teagasc National Farm Survey Data and Authors' Estimates
Note: e = estimate

For 2014 the net margin for milk production averaged €1,287 per hectare. This makes 2014 one of the best years since 2009, with an increase in net margin per hectare of 2 percent relative to 2013. However, it must be cautioned that this production

increase in 2014 will have negative consequences for incomes in 2015 due to the super levy that will be triggered. See Table A5 and Table A6 for estimates of output, costs and margins on a per litre and a per hectare basis.

4. Outlook for 2015

The discussion of production costs in 2015 is complicated by expectations that milk production will increase in 2015 with milk quotas being removed. An increase in production would lead to increased overall levels of input usage on farms where expansion takes place. The extent of this increase will be highly farm specific and therefore the discussion of input usage volumes in 2015, in this section, does not consider the impact of increased milk production. The impact of increased production on the value of milk output and input expenditure is considered separately in the discussion of margins in Section 4.4.

4.1 Outlook for Input Expenditure 2015

4.1.1 Feed usage and price 2015

Animal feed prices are driven by a combination of Irish cereal harvest prices and the prices of imported feed. Having fallen 30 percent in 2013, cereal prices fell by a further 10 percent in 2014. This reflected a good international harvest across much of the main production regions of the world for the second year in succession.

Having had two successive years of favourable weather conditions and above average yields, futures markets appear to be betting on a reversion to normal weather conditions, lower yields and some contraction in area planted, leading to a reduced harvest in 2015 and hence higher international cereal prices than in 2015.

With the assumption of normal weather in Ireland in 2015, feed volume requirements for grassland enterprises are expected to remain at normal levels, similar to 2014. Farmers purchasing feed in the first half of 2015 can expect to pay lower prices than prevailed in the first half of 2014. However, feed prices may rise in the latter half of 2015, if futures markets are correct in anticipating a 10 percent rise in international cereal prices for 2015 harvested crops.

Taking account of 2014 harvest prices and projected harvest prices in 2015, average annual Irish feed prices in 2015 should be more or less in line with average 2014 feed prices.

Overall, it is expected that the volume of concentrate use per head on dairy farms in 2015 will be on a par with that of 2014, but this is contingent on normal weather conditions prevailing in 2015. It remains to be seen to what extent dairy farmers choose to boost production via additional feeding after the milk quota system expires, so an increase in feed use per cow in 2015 cannot be ruled out.

Overall, with no change in feed prices or feed volume per head anticipated in 2015, no change in feed expenditure is forecast.

4.1.2 Fertiliser & Contracting Costs– usage and price 2015

Despite the recent moderation in energy prices, a weaker euro and concern with regard to security of supplies, suggest that fertiliser prices may rise in 2015 relative to the average level in 2014. An average increase in prices of about 7 percent is forecast relative to 2014.

Fertiliser use increased in 2013, most likely as a hedging strategy to ensure an end to the fodder shortage. There was a slight reduction in fertiliser use in 2014, which had much better growing conditions, allowing a significant build-up of silage stocks. It is assumed that on average fertiliser use in 2015 will be on a par with the 2014 level, acknowledging that there is potential for an increase in fertiliser use per hectare in 2015 on farms with more ambitious expansion plans.

With fertiliser prices forecast to be up 7 percent and usage levels projected to be unchanged, this would leave total expenditure on fertiliser up 7 percent in 2015.

No reduction in agricultural contracting charges is forecast, with the volume of contracting undertaken and the associated expenditure assumed to remain unchanged in 2015. This would leave total pasture and forage costs down 3 percent in 2015 relative to 2014, assuming no increase in milk production in 2015 relative to the 2014 level.

4.1.3 Energy and Fuel – usage and price 2015

An analysis of futures prices indicates that the balance of market opinion sees Brent crude oil prices remaining close to $85 over the course of 2015. This equates to about €68 pb at the current euro exchange rate of $1.25, which would

represent a decrease of about 11 percent in crude oil prices in euro terms on the average 2014 level. However, if this transpires, the decline in retail fuel prices will be smaller in percentage term, since taxes, duties, refining and distribution costs create a wedge that limits the transmission of crude oil price changes into retail fuel prices. Therefore a decline in fuel price of 6 percent in 2015 is forecast. Electricity prices are assumed to remain unchanged in 2015. This would leave overall dairy farm expenditure on energy and fuel down about 4 percent in 2015 relative to the 2014 level.

4.1.4 Other Direct and Fixed Costs – usage and price 2015

There is increasing optimism with regard to the economic growth prospects for the Irish economy and that labour market conditions in Ireland will continue to improve in 2015. Growth prospects for our main trading partners, the UK and US, remain good. Irish unemployment is forecast to fall from 11 percent (November 2014) to 10 percent by the end of 2015 (ESRI, 2014). This still represents a high level of unemployment, so it is reasonable to assume that wage inflation will be quite limited in the short term. Therefore the increase in labour costs in 2015 is forecast to be no more than 1 percent. The increase in the general inflation affecting other farm costs in 2015 is assumed to be 2 percent.

The extent to which other fixed costs are allocated to the dairy enterprise on a dairy farm will depend on the value of milk production relative to the value of the other outputs of the farm. As milk quotas are being removed in 2015, the volume of milk produced will increase and this increase will be farm specific. This means that it is not possible to generalise about the extent to which the fixed cost allocation to the dairy enterprise will change. On balance the fixed costs associated with the dairy enterprise should be lower, given that milk prices in 2015 will be significantly lower, but this will be offset to a degree by an increased volume of milk production of farms.

For the dairy farm with an average level of profitability and where milk production remains unchanged in 2015, fixed costs for the dairy enterprise will fall by about 5 percent. On the other hand, if that farm expands its milk production then fixed costs will be closer to the 2013 level.

4.2 The Outlook for Dairy Markets in 2015

As of November 2014, international dairy markets remain in a weak position, with mixed indications on when and where the protracted decline in international dairy commodity prices will bottom out. It is likely that dairy markets will remain depressed over the first half of 2015, as the surplus in dairy products that has arisen on world markets in 2014 is absorbed.

The removal of milk quota in the EU and the expected increase in EU milk production in 2015 presents a new complication to gauging developments on world dairy markets. Estimates of the future expansion capacity of EU dairy production post quota elimination are now more optimistic than they were even 3 years ago, when many expected no overall increase in EU milk production when milk quotas were eliminated - the so called soft landing scenario.

For the EU as a whole, dairy cow numbers have declined historically, but that decline was arrested in 2013 and EU dairy cow numbers have remained stable since then. The experience of 2014 has demonstrated that if the economics are favourable, EU milk production can expand. Even though there was no quota increase in the EU in 2014/15, the fact that quotas were no longer binding in many EU member states, allowed for significant growth in EU production of over 4 percent. Even in countries where quotas were binding, such as Ireland, producers have pushed production into superlevy territory.

More generally, it seems that the EU can be expected to expand production by anything from 0.6 percent to 1.2 percent per annum over the next decade, with perhaps a larger rate of increase of the order of 1.5 to 2 percent in the short term, reflecting the pent up capacity arising from the stabilisation and increase in total EU28 dairy cows numbers in the last two years.

Assuming normal weather conditions, and considerably lower levels of profitability, we should see a weaker expansion in New Zealand milk production for the 2014/2015 season of the order of 2 percent.

The transmission of lower world dairy prices to the US dairy market and US farm milk prices will happen more slowly than in the EU. USDA estimates that US production in 2015 is set to grow

by 3 percent. This is a larger production increase than is estimated to have taken place in 2014, reflecting a delayed supply response to the depressed global market conditions.

Turning to the demand side, internationally, consumption of dairy products has not grown by as much as had been anticipated in 2014. Chinese dairy importers were less active in the world market in 2014 because Chinese dairy production was higher than anticipated. The fall in dairy prices is said to have caused international buyers to postpone purchasing decisions, in the hope of securing a better deal at lower prices.

Taking these factors into consideration, it is likely that a weak dairy market situation will persist into the latter half of 2015. Due to the seasonal production profile, Irish dairy producers escaped much of the impact of the decline in dairy markets that took place in the second half of 2014. From an Irish perspective a protracted dip in dairy markets beyond the first half of 2015 is particularly bad news. It means that Irish dairy producers are likely to see no significant improvement in dairy markets until after the peak delivery months have passed in 2015. Allied to this, milk production in Ireland in the January to March period of 2015 is going to have to be reined in, in order minimise the superlevy obligation, or alternatively, Irish dairy producers will face unprecedented penalties for over-production just when the quota system has been dismantled.

Current (November 2014) Irish milk prices are well below the average price for 2014 as a whole, but above the level currently being returned by the market. With little prospect of a price improvement in the short term, this means that annual average Irish milk prices in 2015 will be considerably below the 2014 level. Overall, it is estimated that the annual average farm milk price in 2015 could be 28 percent lower than that of 2014, giving an annual average price of 27 cent per litre on an actual fat, vat inclusive, basis.

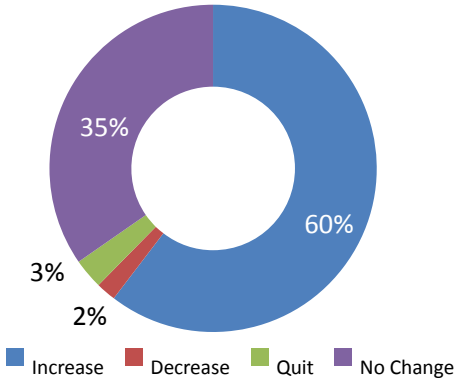
4.3 The Outlook for Milk Production in 2015

The removal of the milk quota regime in April of 2015 will present the first substantive opportunity in over 30 years to expand milk production at the national level in Ireland. As such, it is difficult to predict with any certainty the extent to which aggregate milk production in Ireland will increase in the short term. Clearly, individual farmer's production decisions will be influenced by the milk price, input costs, production conditions, their on farm expansion capacity as well as a range of personal factors, all of which are difficult to predict. Despite the deteriorating outlook for margins in 2015, it is inevitable that we will see a considerable increase in Irish milk production due to the increase in cow numbers over the last three years.

In order to inform our forecasts of milk production levels post quota removal, a special supplementary survey of the Teagasc National Farm Survey was conducted in the second half of 2013.

A representative sample of existing Irish dairy farmers was questioned about their production plans from the point of quota elimination in 2015 through to the end of 2017. The aggregated results in Figure 17 show that almost two-thirds of dairy farmers, or 11,000 farmers, plan to expand milk production in the 2015 to 2017 period.

Figure 17: Existing Dairy Farmers' Production plans to 2017

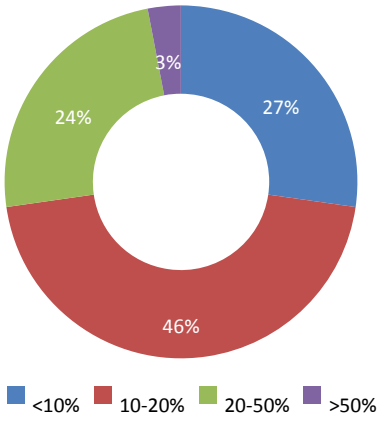


Source: Teagasc National Farm Survey Data

A further one-third of farmers plan to maintain their current production level, while a small proportion, 5 percent, plan to either decrease or exit milk production. The average current herd size of those planning to increase production is 79 cows, which is above the national average herd size of 66 cows. While those planning no change in production have an average herd size of 51 cows at present.

Figure 18 illustrates that almost three-quarters of the 11,000 farmers planning to expand production in the 2015 to 2017 period plan to expand by less than 20 percent, relative to their existing level of production. Only 3 percent of farmers plan to expand production by 50 percent or more.

Figure 18: Planned Milk Production increase to 2017 for expanding Dairy Farmers



Source: Teagasc National Farm Survey Data

Taking existing production levels, as recorded by the NFS in 2013, and applying each farmer's stated production plans for the 2015 to 2017 period, it is possible to estimate the change in aggregate production that would result. If farmers follow through on their stated plans to increase, exit or maintain production levels, the total milk production of this group of farmers would increase by 14 percent in this period. It is important to note however that this figure does not allow for new entrants.

In order to arrive at an estimate of the number of new entrants to dairy farming in the short term, non-dairy farmers were also questioned in the same survey about their intentions to enter dairy farming. Just 902 farmers or 1.5 percent of the non-dairy farms represented by the Teagasc NFS expressed an interest in entering dairy farming in the 2015 to 2017 period. However, only 40 percent of those with intensions of entering dairying had engaged in active planning by discussing their dairy start-up plan with a bank manager and only 25 percent had completed a business plan. It is therefore likely that the number of new entrants to dairy in the 2015 to 2017 period would be closer to 360 than the 902 that had expressed an interest. The 360 non-dairy farmers that have discussed a dairy business start-up plan with their bank manager collectively plan to stock 40,000 cows or an average herd of 126 cows, almost double the current national average herd size. Assuming these cows produce the average national milk yield, these new entrants would bring a further 3 percent to the Irish national milk pool.

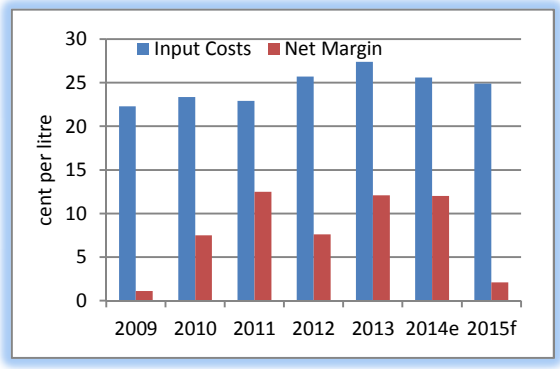
Combining the additional production of existing farmers with the production from new entrants would lead to a 17 percent increase in national milk production in the 2015 to 2017 period over the 2013 level. It is probable that farmers planning to expand will do so in the initial years following milk quota removal and as such we expect that the bulk of the additional production will be front loaded and will occur in the 2015 and 2016.

In spite of the large forecast decline in milk prices in 2015, the removal of quotas should still result in an increase in milk production in Ireland. Cow numbers have risen in the run up to quota removal and it is unlikely that many producers will destock in the face of a short-term decline in profitability. We therefore forecast that at the national level Irish milk production will increase by 10 percent in 2015.

4.4 The Outlook for Dairy Enterprise Net Margins in 2015

This section considers the impact of the declining milk price on gross and net margins on dairy farms. Figure 19 presents a margin forecast on a per litre basis for the average dairy farm where production is unchanged in 2015 relative to the 2014 level. Given the 28 percent decrease in milk price, gross and net margins are forecast to fall significantly in 2015. Net margin per litre is forecast to fall by 82 percent in 2015, to an average of 2 cent per litre.

Figure 19: Average Milk Production costs and Net Margin per litrein Ireland 2009 to 2014, with Forecast for 2015



Source: National Farm Survey Data (Various Years) and Authors' Estimates
Note: e = estimate f = forecast

In the era of milk quotas, production volumes were constrained and emphasis was placed on minimising the cost of production per litre of milk produced, within the confines of the quota constraint, in order to maximise profitability. However, while still relevant in a post quota era, economic analysis on a per litre basis should be supplemented by analysis based around other

measures, such as profit per hectare or profit per hour worked, which become more relevant measures when the milk quota no longer exists.

The price of the main subcomponents of production costs are not expected to increase to any great extent in 2015 relative to 2014, but production costs per hectare may be pushed upward due to an increased volume of milk production per hectare as post quota expansion begins. It is not possible to generalise about the impact of quota removal on the cost of production per hectare for all producers, since this is likely to be highly farm specific. Suffice it to say that if production costs per hectare increase in 2015, it will be mainly due to greater volumes of input usage, with a view to increasing milk production, rather than input price pressures.

The ultimate impact on net margins in 2015 will be highly farm specific, reflecting individual farm expansion plans and the costs associated with additional milk production. For practical purposes, we investigate the impact on gross and net margins for the average farm in 2015, under two scenarios.

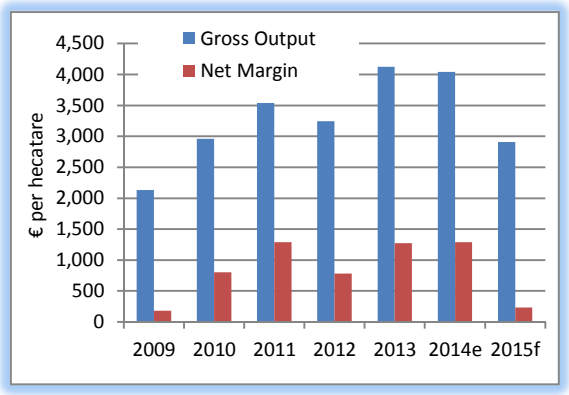
In the first scenario milk production on the farm is assumed to remain unchanged on the 2014 level when the milk quota is removed. In the second scenario the farm's milk output volume increases by 10 percent in 2015.

For simplicity of comparison with the farm's performance in 2014, we further assume that expansion in 2015 takes place on the same land area that was used in 2014 i.e. it is assumed that milk production per hectare will increase by 10 percent in 2015 relative to 2014.

In 2015, profitability per hectare, as measured by the net margin on the average dairy farm, producing an unchanged level of milk production is forecast to decrease, in line with the per litre figure by, approximately 82 percent as illustrated in Figure 20. Average net margin per hectare is estimated to be €1,287 for 2014, but is forecast to decrease to just €231 in 2015.

In 2015, profitability per hectare on the average dairy farm, expanding its milk production by 10 percent is forecast to decrease by approximately 76 percent as illustrated in Figure 21. Due to the forecast milk price of 27 cent per litre, average net margin per hectare is forecast to decrease dramatically to €308 in 2015, but this is higher than the margin achieved on the average farm which maintains an unchanged level of production.

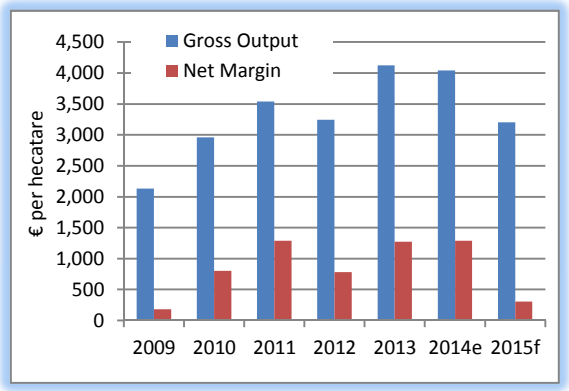
Figure 20: Average Milk Production Gross Output and Net Margin per hectare for 2009 to 2014 with Forecast for 2015 (based on an unchanged level of production)



Source: Teagasc National Farm Survey Data and Authors' Estimates. Note: e = estimate f= forecast

In this case the additional milk production can be produced at a lower marginal cost, which contributes to the margin achieved per hectare. Production costs for the marginal litres are lower since some cost items do not increase in a linear fashion when production increases, eg. fertiliser expenditure, other direct costs, energy and hired labour.

Figure 21: Average Milk Production Gross Output and Net Margin for per hectare for 2009 to 2014 with Forecast for 2015 (based on 10 percent milk production increase)



Source: Teagasc National Farm Survey Data and Authors' Estimates. Note: e = estimate f= forecast

5. Concluding Comments

Dairy margins increased in 2013, with higher milk prices more than offsetting higher costs of production. Production costs decreased marginally in 2014 due, in the main, to much reduced expenditures on feed, and to a lesser extent a decline in fertiliser and fuel expenditure. However, there was also a decrease in milk prices in 2014 that

nullified the benefit of the decline in input costs. As a result the average net margin for milk production is estimated to have declined by 0.1 cent per litre in 2014 to an average of 12.0 cent or €1,287 per hectare.

International dairy market prices will remain depressed in the first half of 2015, and while a price recovery may take hold as the year progresses, the possibility also exists that the weak market could continue for the full year. Even if a recovery takes place in the second half of 2015, a highly negative impact on the Irish milk price for 2015 is inevitable given the seasonality of Irish production, which, in contrast to 2014, will coincide with the period of maximum market weakness. In 2015, an annual average decrease in milk prices of about 28 percent compared with 2014 is forecast.

Overall milk production cost inflation should be relatively benign in 2015. An increase in overall production costs per hectare in 2015 relative to 2014 can be expected on farms that increase production, but this will largely be on the basis of higher levels of input utilisation, rather than input price inflation.

Based on these forecast production levels, output price and input cost movements, dairy margins per hectare are likely to fall substantially in 2015 compared with 2014, even on farms that expand production, with average net margins likely to be no more than €300 per hectare.

At this point a super levy situation at the end of the 2014/15 quota year is inevitable and steps to minimise the extent of the liability that will arise, by limiting production in the remaining months of the quota year are required. Accordingly producers who end up over quota in 2014/15 will also face a superlevy bill in 2015, which typically will be much larger than any which have arisen in the past.

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Table A1: Average Gross and Net Margin of Milk Produced

	2012	2013	% Change
	cent/litre		
Total Gross Output	33.3	39.5	+19
Concentrate Costs	6.0	7.1	+19
Pasture and Forage Costs	4.8	5.1	+7
Other Direct Costs	4.3	3.9	-8
Total Direct Costs	15.1	16.1	+8
Gross Margin	18.2	23.3	+28
Energy and Fuel	2.3	2.4	+2
Labour	0.48	0.53	+12
Other Fixed Costs	7.8	8.4	+7
Total Fixed Costs	10.6	11.25	+6
Net Margin	7.6	12.1	+58

Source: Teagasc National Farm Survey Data

Table A2: Average Gross and Net Margin per hectare*

		2012	2013	% Change
Milk Produced	litres/ha	9,496	10,375	+9
Total Gross Output	€/ha	3,182	4,098	+29
Total Costs	€/ha	2,399	2,817	+17
Net Margin	€/ha	783	1,290	+65

* - Hectare of forage area allocated to the dairy enterprise
Source: Teagasc National Farm Survey Data

Table A3: Costs and profit (cent per litre) for Top, Middle and Bottom one-third of farms in 2013

	Top	Middle	Bottom
		cent/litre	
Concentrate Feeds	6.55	6.85	8.02
Pasture & Forage	4.58	4.86	5.89
Other Direct Costs	3.77	3.91	4.09
Energy & Fuel	2.07	2.26	2.74
Labour	0.74	0.52	0.33
Other Fixed Costs	7.85	8.30	8.93
Total Costs	25.57	26.70	30.00
Net Margin	14.85	12.73	8.75

Source: Teagasc National Farm Survey Data

Table A4: Output and profit per hectare for Top, Middle and Bottom one third of farms in 2013

		Top	Middle	Bottom
Stocking rate	cows/ha	2.24	1.85	1.59
Milk Sold	Litres per ha	12,571	9,200	6,759
Concentrates fed per cow	kg	1,049	959	1,026
Concentrates fed per litre of milk produced	kg	0.18	0.19	0.24
Gross output	€ per ha	4,356	3,055	2,151
Direct Costs	€ per ha	1,722	1,335	1,189
Gross Margin	€ per ha	2,634	1,720	962

Source: Teagasc National Farm Survey Data

Table A5: Average Gross and Net Margin per litre of Milk Produced 2012-2014

	2012	2013	**2014e**
	cent/litre		
Total Gross Output	33.3	39.5	37.6
Concentrate Costs	6.0	7.1	5.6
Pasture and Forage Costs	4.8	5.1	4.6
Other Direct Costs	4.3	3.9	4.0
Total Direct Costs	15.1	16.1	14.2
Gross Margin	18.2	23.3	23.3
Energy and Fuel	2.3	2.4	2.3
Labour	0.48	0.53	0.5
Other Fixed Costs	7.8	8.4	8.5
Total Fixed Costs	10.6	11.25	11.4
Net Margin	7.6	12.1	12.0

Source: Teagasc National Farm Survey Data. Figures for 2014 are estimates

Table A6: Average Gross and Net Margin per hectare 2012 -2014

	2012	2013	**2014e**
	€ per hectare		
Total Gross Output	3243	4121	4043
Concentrate Costs	585	749	601
Pasture and Forage Costs	447	525	499
Other Direct Costs	417	412	430
Total Direct Costs	1449	1686	1530
Gross Margin	1794	2435	2512
Energy and Fuel	213	234	249
Labour	62	75	58
Other Fixed Costs	735	851	918
Total Fixed Costs	1010	1160	1225
Net Margin	784	1275	1287

Source: Teagasc National Farm Survey Data. Figures for 2014 are estimates

Review of Cattle Farming in 2014 and Outlook for 2015

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1. Introduction

This paper presents a review of the economic performance of Irish cattle production in 2013 based on data provided by the Teagasc National Farm Survey (Hanrahan et al. 2014). Estimated returns from cattle production in 2014 and the forecast outlook for 2015 are also presented.

Undoubtedly 2014 has been a year of controversy in the Irish beef sector. Falling finished cattle prices and low incomes in the sector have given rise to conflicts between famers, their representative organisations and the meat processing industry. Much of the controversy has related to the growth of the differential between Irish and British prices. This paper does not attempt to resolve this matter or in any sense take sides in the debate. The UK is obviously Ireland's most important export market for beef, but it is not the only destination to which Irish beef is exported. Continental EU markets in aggregate are as important as the UK. The weakness in demand for beef on these markets, together with the surge in cattle available for slaughter in Ireland in 2014, has led to lower Irish prices and growth in the differential between Irish and British prices.

The evolution of Irish cattle prices of different age categories in 2014 differed. Prices of finished cattle in 2014 have declined significantly on levels observed in 2013, with R3 steer prices, on average, 10 percent lower than in 2013 (young bull prices have declined on average by close to 13 percent). Calf prices in 2014 were also lower, with prices for beef calves in the spring of 2014 approximately 8 percent lower than in 2013. Weanling prices in contrast have been stronger in 2014 than in 2013. These differing price dynamics across different cattle types means that at an individual farm level the timing of marketing of cattle and the type of farm system operated will be important in the extent to which movements in output prices affect farm output.

On Single Suckling enterprises changes in calf, weanling, store and finished cattle prices directly affect the value of output per hectare. On Cattle Finishing enterprise lower (higher) prices paid for calves and weanlings purchased in increases (decreases) the value of enterprise output. As a result of the different developments in young and finished cattle prices in 2014, the value of output per hectare on Cattle Rearing and Cattle Finishing enterprises is estimated to have declined by differing amounts.

Lower levels of expenditure on inputs in 2014, particularly on purchased feed, fertiliser and energy, are estimated to have offset the negative impact of output price developments on margins. On cattle finishing farms lower finished cattle prices and higher weanling prices have combined to lower output value, however, reductions in input expenditure in 2014 are estimated to have partially offset the negative impact of lower output value on margins earned. On single suckling enterprises the estimated fall in output is lower than on cattle finishing farms as a result of the fact that weanling prices in 2014 are estimated to have been slightly higher than in 2013. The decline in estimated input expenditure on single suckling farms in 2014 will have been large enough to leave average margins on single suckling enterprises higher than in 2013.

While on average gross margins on single suckling farms are estimated to have improved in 2014, this increase is off of a very low base and, on average, net margins earned on single suckling farms continue to be negative. On Cattle Finishing enterprises the decline in finished cattle prices in 2014 has generated considerable controversy – however the impact of lower prices on profitability in 2014 was partially offset by lower direct input costs. Nevertheless gross margins earned on cattle finishing enterprises continue to be very low and average net margins continue to be negative.

The outlook for Irish cattle markets in 2015 is more positive than 2014. The drivers of finished cattle prices are an issue of on-going controversy. Ultimately, supply and demand for cattle and beef in Ireland and the EU will determine Irish cattle prices. Tighter supply in Ireland and the UK and continued growth in demand for Irish beef from the British market will support Irish cattle prices in 2015. However, continued weakness in the wider

EU and global economy and relatively stable continental EU beef production will limit the extent of the forecast price recovery.

The evolving macroeconomic uncertainty relating to the Eurozone will continue to represent the key risk factor to Irish and EU cattle prices. The CEPR (2014) Euro Area Business Cycle Dating Committee concluded that the recession that began in 2011Q3 has not concluded. Recently the IMF and European Commission have forecast continued weak to negative economic growth in the Eurozone. With lower incomes and increases in unemployment the demand for beef in continental EU has contracted significantly since the onset of the global financial crisis. The continuation of the Eurozone recession will constrain beef demand and consequently limit the scope for improvements in finished cattle prices.

On balance our forecast is that Irish cattle prices will increase in 2015, but that the continued weakness in the Eurozone and stable aggregate EU beef supply will prevent a return to finished cattle price levels observed in 2013.

Unless stated otherwise, all figures referred to in this paper are in nominal terms and all enterprise income and profit estimates exclude the value of decoupled income support payments. The measures announced in October 2014 by the Minister for Agriculture, as part of Budget 2015, (the *Beef Data Programme* and *Beef Genomics Programme*) are incorporated in our forecasts of cattle rearing enterprise output value for 2015. The impact of the outcome of the recent Beef Roundtable meeting in mid-November on beef prices is difficult to assess at this point and no attempt has been made to formally incorporate the agreed measures in the forecasts in this paper.

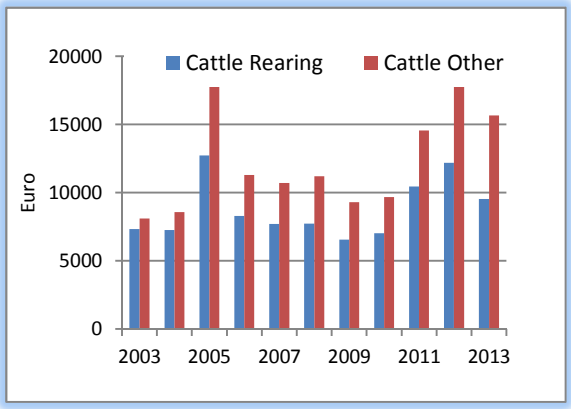
2. Review of the Economic Performance of Beef Farms in 2013

The trends in average family farm income (FFI) for the two types of cattle farms identified in the Teagasc NFS over the period 2003 to 2013 are shown in Figure 1. In 2013 the average FFI on Teagasc NFS *Cattle Rearing* and *Cattle Other* farms decreased substantially compared with 2012 levels. The 2013 FFI on cattle rearing farms decreased by 22 percent when compared with the 2012 level, while the decrease in FFI on Other Cattle farms was 12 percent. FFI on both cattle farm types remains very low, at only €9,541 and €15,667 respectively. Figure 1 also illustrates that the gap between the average FFI earned on farms in the cattle rearing system and the average income earned on the cattle other system continued in 2013.

In this year's analysis we present results based on the two way categorisation of Irish cattle enterprises: *Single Suckling* and *Cattle Finishing* enterprises used in Breen and Hanrahan (2012) and the Teagasc NFS cattle enterprise fact sheets (Teagasc, 2014a and 2014b).

Single Suckling enterprises in the analysis that follows are enterprises with more than 10 cows, while the Cattle Finishing enterprises analysed were those with more than 10 livestock units and where more than 70 percent of the animals sold off of the farm were sold for slaughter. In total these two enterprises were present on more than 40,000 farms nationally.

Figure 1: Family Farm Income on Cattle Rearing and Cattle Other Farm Systems: 2003 to 2013



Source: Teagasc National Farm Survey (2014)

2.1 Irish Beef Enterprise Performance in 2013

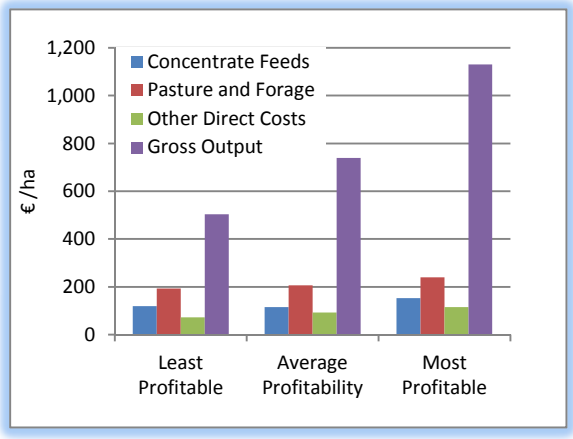
This section discusses the cost structure of Single Suckling and Cattle Finishing enterprises in Ireland. Farms with these two enterprises have been ranked on the basis of gross margin earned per hectare and each farm enterprise group has been broken into three equally sized groups, which we have termed farms that are *least profitable,* those that have *average profitability* and those that are *most profitable*.

Single Suckling: In 2013 the average direct cost of production per hectare for Single Suckling enterprises ranged from €462 per hectare, on

those farms with the lowest average gross margin, to €610 per hectare on the most profitable farms (see Figure 2). The cost of concentrate feed, along with the cost of pasture and winter forage typically accounts for approximately 80 percent of the direct costs of production on Single Suckling farms. The average expenditure on concentrate feed varied from €154 per hectare on the low profitability farms to €192 per hectare on the high profitability farms. There was considerably more variability in the average gross output per hectare between the least profitable and most profitable farms.

The most profitable third of Single Suckling enterprises earned an average gross output of €1,198 per hectare compared with an average gross output of €507 per hectare on the least profitable one third of Single Suckling enterprises. This variability in average gross output is largely due to the higher average stocking on the more profitable farms. The most profitable Single Suckling enterprises had an average stocking rate of 1.71 livestock units (LU) per hectare compared with only 1.09 LU per hectare for those Single Suckling enterprises with the lowest profitability. The capacity of farms to operate at high stocking rates is limited by the soil quality of the land farmed. In 2013 69 percent of the most profitable Single Suckling enterprises farmed *very good* soils, whereas the proportion of the least profitable farms on very good soils was considerably lower at 29 percent.

Figure 2: Variation in Total Production Costs and Gross Output on Single Suckling enterprises in 2013



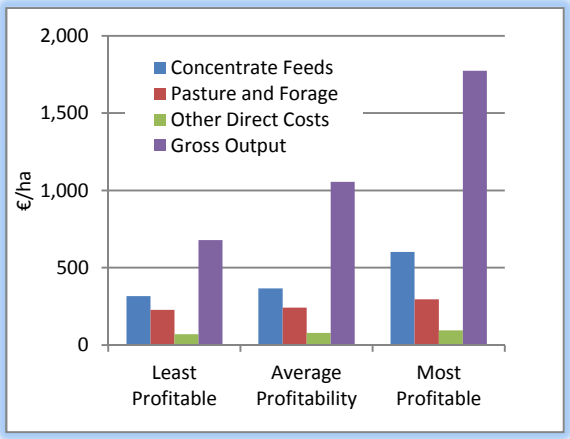
Source: Teagasc National Farm Survey (2014)

The most profitable one third of Single Suckling enterprises in 2013 had an average gross output per hectare that was 136 percent higher than the average output per hectare on the least profitable one third of Single Suckling enterprises, while average direct costs per hectare were only 32 percent higher.

Cattle Finishing: The second cattle enterprise category analysed is Cattle Finishing enterprise. The enterprises analysed were again ranked on the basis of gross margin per ha and assigned to three equally sized groups which we have termed farms with *least, average* and *most* profitable.

Average direct costs of production were highest on the most profitable farms and lowest on those farms with lower levels of profitability (see Figure 3). Total expenditure on concentrate feed is substantially higher on Cattle Finishing enterprises than on Single Suckling enterprises. The most profitable one third of Cattle Finishing enterprises had a gross output of €1,774 per hectare compared with €680 per hectare on the least profitable Cattle Finishing enterprises.

Figure 3: Variation in Total Production Costs and Gross Output on Cattle Finishing Enterprises in 2013



Source: Teagasc National Farm Survey (2014)

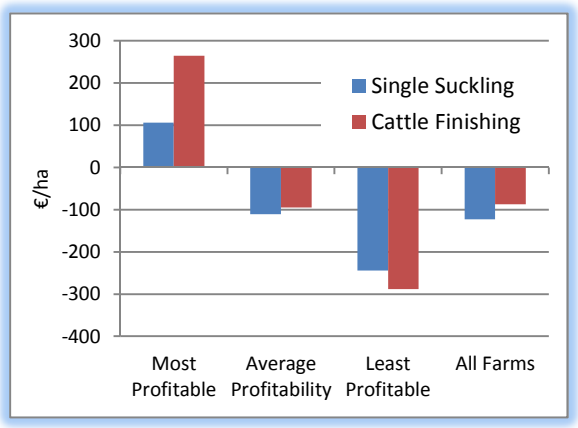
As in the Single Suckling enterprises there is a large degree of heterogeneity in gross output per hectare across the Cattle Finishing enterprises analysed. This diversity reflects the differing levels of production intensity on different farms. The average stocking rate on the least profitable Cattle Finishing enterprises was 1.30 LU per hectare, while the average stocking rate on the most profitable one third of Cattle Finishing enterprises was 1.84 LU per ha. In general more profitable Cattle Finishing enterprises were on farms with better soil. Over 70 percent of the most profitable Cattle Finishing enterprises farmed very good soils

while only 56 percent of the least profitable farms farmed *very good* soils.

The results presented in Figures 2 and 3 highlight the differences in costs per hectare on Single Suckling and Cattle Finishing enterprises. However, it is important to recall that there is even greater variation in gross output across different farm enterprises. While higher levels of gross output per hectare are in general associated with high levels of direct costs of production, and with farming on better than average soils, the difference in technical performance and productivity between the top one third and bottom one third of Cattle Finishing enterprises remains striking.

Average overhead costs per hectare on the Cattle Finishing and Single Sucking enterprises were €530 and €418 per hectare respectively (see Appendix Table A1 and Table A2 at the end of the paper). The higher level of overhead expenditure on Cattle Finishing farms reflects both the higher average intensity of production on these farms when compared with Single Suckling enterprises and their higher average stock of non-livestock capital (buildings and machinery) per hectare.

Figure 4: Cattle Enterprise Net Margins per hectare in 2013



Source: Teagasc National Farm Survey (2014)

The increase in output value in 2013 was insufficient to offset the increases in total costs of production. The magnitude of the average negative net margins earned on cattle enterprise increased. Figure 4 shows the net margins earned on the two cattle enterprises analysed and illustrates that only the most profitable one third of Cattle Finishing and Single Suckling enterprises earned positive net margins in 2013.

3. Estimated Performance of Irish Cattle Farms in 2014

This section of the paper presents a review of the economic performance of Irish cattle enterprises in 2014. A discussion of the estimated changes in input usage and input costs in 2014 is first presented and this is followed by a discussion of estimated changes in output value. Estimates of margins earned by Single Suckling and Cattle Finishing enterprises in 2014 are then presented. Estimates for 2014 and Forecasts for margins in 2015 (which are presented in Section 4) are based on an assumption of unchanged intensity of production per hectare. The impact of an increase in the intensity of production on individual enterprises would vary from enterprise to enterprise. In some cases it could increase profitability in others it could give rise to lower margins.

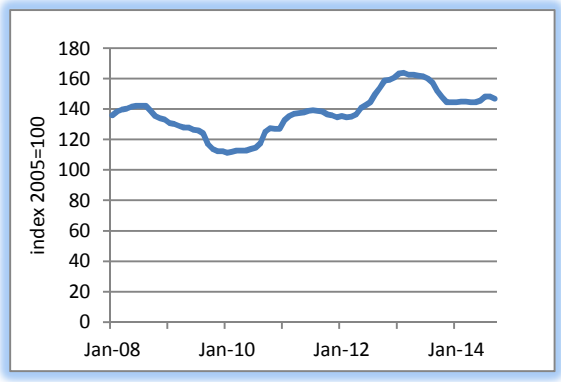
3.1 Estimated Input Usage and Price 2014

3.1.1 Feedstuffs

Purchased feed (concentrates) is an important element of the direct cost of beef production in Ireland. Typically this cost item accounts for approximately 30 percent of total direct costs on Single Suckling enterprises and 40 percent of direct costs on Cattle Finishing enterprises. The adverse weather conditions that characterised 2012 and 2013 were not repeated in 2014. It is likely that 2014 will be recalled as close to ideal in terms of the spring, summer and autumn grazing and grass growing conditions. The good grass growing conditions in 2014, that contrast so sharply with those of 2012 and 2013, have had a dramatic impact on the volume of purchased feed used by Irish cattle farms and the reduction in volume allied with a significant reduction in feed prices has substantially reduced a key element of the direct costs of production on Irish cattle farms.

Figure 5 presents the CSO monthly price index for cattle feed stuffs for the years 2008 to September 2014. Cattle feed prices have declined particularly through the first two quarters of 2014 over the course of the full year cattle feed prices are estimated to have declined by 8 percent.

Figure 5: Monthly Price Index of Cattle Meal in Ireland 2008 to 2014



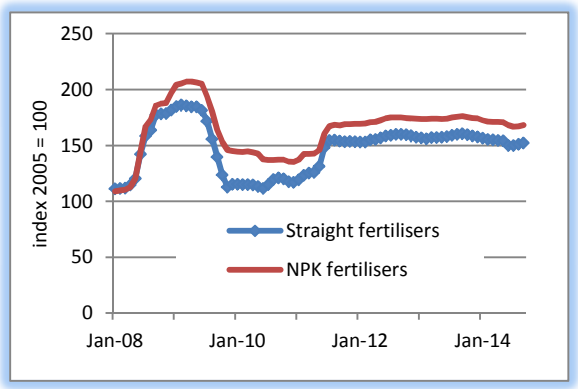
Source: CSO (2014)

The significantly lower volume of feed purchased by cattle farms (estimated to have declined by 20 percent) when combined with feed prices that are estimated to have decreased by 8 percent mean that expenditure on concentrates by Irish cattle farmers is estimated to have decreased by over 26 percent in 2014.

3.1.2 Fertiliser – usage and price 2014

Figure 6 presents data on fertiliser prices over the past seven years. Fertiliser prices have declined through the course of 2014, with both compound fertilisers and straights declining in price when compared with 2013. This decline in Irish fertiliser prices reflects global dynamics where cheaper energy prices and some structural oversupply of fertilisers internationally have contributed to lower fertiliser prices.

Figure 6: Monthly Price Index of Fertiliser in Ireland from 2008 to 2014



Source: CSO (2014)

In combination with lower fertiliser prices, overall fertiliser use on Irish cattle farms is also estimated to have declined in 2014. In contrast with 2013 where fertiliser use increased over 2012 levels as farmers attempted to rebuild stocks of conserved forage, in 2014 good grass growing conditions allowed fertiliser use volumes to revert to normal levels. As a result of both lower prices and lower volumes of fertiliser use on Irish cattle farms overall expenditure on fertiliser on Irish cattle farms is estimated to have decreased by almost 14 percent in 2014.

3.1.3 Energy and Fuel – usage and price 2014

In 2014 the average price for crude oil in was $104 per barrel (pb). Given movements in the euro/US dollar exchange rate which saw the euro depreciating against the dollar; this translates into a price of approximately €78 pb, which represents a decrease of 6% on the price in 2013. As a result of the decrease in oil prices when expressed in euro, and the inelastic nature of farmers demand for fuel, fuel costs are estimated to have decreased by 4 percent in 2014 relative to the 2013 level. The smaller decrease in farm level fuel costs as compared to crude oil prices reflects the impact of taxes and other activity along the energy supply chain.

While no official data on contractor charges exist, lower diesel prices and anecdotal evidence of profitability pressures within the contracting industry are indicative of lower costs to farmers. We estimate that for 2014 farmer contracting costs have declined by 5 percent compared with 2013. When combined with reduced expenditure on fertiliser, the lower costs of motor fuel means that overall expenditure on pasture and forage by cattle farmers is estimated to have decreased by close to 14 percent in 2014.

Electricity costs change infrequently in Ireland due to energy price regulation. Price increases that have occurred during 2014 reflect the rise in the costs associated with Irish electricity production and distribution in Ireland. On an annual average basis, prices are estimated to have increased by almost 3 percent in 2014 relative to 2013.

3.1.4 All Other Direct and Overhead Costs– usage and price 2014

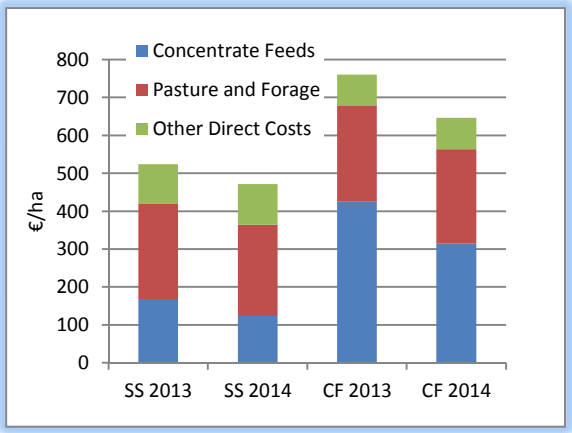
Agricultural wages in Ireland are not estimated to have increased significantly between 2013 and 2014. While the quantity of labour used on farms is assumed to have remained unchanged, the strengthening of national labour markets is

estimated to have led to some growth in these costs of production. Overall the magnitude of other overhead costs is estimated to have increased marginally in 2014. Given the nature of overhead costs, there is little capacity for changes in volume used, and therefore the change in expenditure on other fixed costs is estimated to be 1 percent higher in 2014 compared to 2013.

3.1.5 Estimate of Total Direct Costs for 2014

Figure 7 compares the average direct costs of production for the Single Suckling and Cattle Finishing enterprises in 2013 with the estimated direct costs for 2014. Average direct costs are estimated to have decreased strongly in 2014, with total direct costs on Single Suckling enterprises estimated to have decreased by 14 percent, while total direct costs on Cattle Finishing enterprises are estimated to have decreased by 15 percent. The larger reduction on cattle finishing enterprises is due to the greater importance of purchased feed in their direct costs of production. The main drivers of this strong decrease in direct costs of production in 2014 are the lower volumes of purchased feed, and the lower prices of feed, fertiliser and fuel used.

Figure 7: 2013 Direct Costs and Estimated 2014 Direct Costs for Single Suckling (SS) and Cattle Finishing (CF) Enterprises



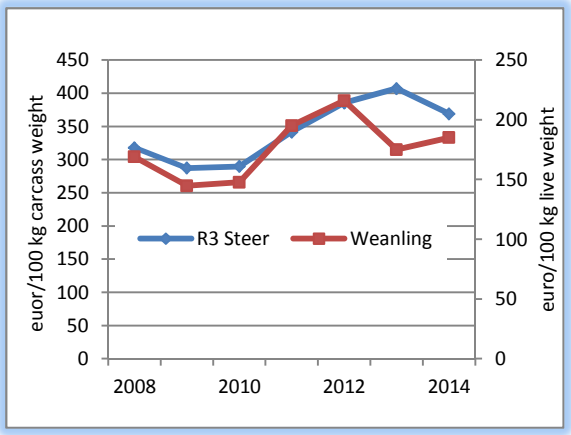
Source: Teagasc National Farm Survey (2014) and Author's Estimates 2014

3.2 Estimated Output Values 2014

The value of gross output on Single Suckling is estimated to have decreased in 2014, due to lower average prices for cattle. Though weanling prices have not declined in line with finished cattle prices, calf and store cattle prices have declined in line with finished cattle prices. Average weanling prices in 2014 are estimated to be 4 percent higher than in 2013. In contrast finished cattle prices decreased strongly in 2014. The estimated average R3 steer price in 2014 of €370/100kg represents a 10 percent decrease in the price level in 2013. The average decline in young bull prices in 2014 was closer to 13 percent. Figure 8 presents average steer and weanling prices for the period 2008 to 2013 and an estimate for 2014.

The somewhat higher level of weanling prices received by Single Suckling (and other types of farm) enterprises indirectly decreases the value of output on Cattle Finishing enterprises by increasing costs of cattle purchased in, however, this negative impact on cattle finishing output has likely been offset to some extent by lower calf prices in the spring of 2014 as compared with 2013.

Figure 8: Irish Cattle Prices 2008 to 2014

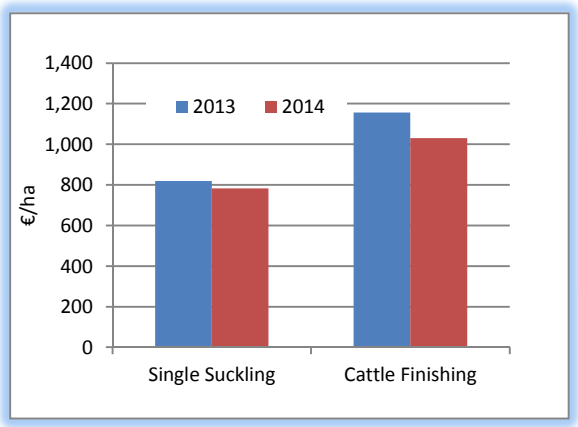


Source: DG Agri. and CSO

Gross output per hectare on Single Suckling farms in 2014 is estimated to have decreased by 5 percent to €777 per hectare. The most profitable one third of Single Suckling enterprises, due to higher stocking rates and other factors, continue to achieve significantly higher output per hectare (€1,136 per hectare) as compared to the average (€715 per hectare) and least profitable (€481 per hectare) enterprise groups.

Gross output per hectare in 2014 was on average higher on Cattle Finishing enterprises than on Single Suckling enterprises. This largely reflects the higher stocking density per hectare on these farms. In 2014 the gap in the level of output per hectare narrowed due to relative movements of finished cattle and young cattle prices. The average level of gross output per hectare for Cattle Finishing enterprise in 2014 is estimated to be €1,007 (a decrease of 13 percent on the level in 2013).

Figure 9: 2013 Gross Output for Single Suckling (SS) and Cattle Finishing (CF) Enterprises and Estimate for 2014



Source: National Farm Survey (2014) and Author's Estimates 2014

Again, as with the Single Suckling enterprise, there is a large degree of variation in the value of gross output per hectare between the least profitable, average profitability and most profitable groups of Cattle Finishing enterprises. The most profitable Cattle Finishing enterprises are estimated to have produced an average level of gross output per hectare (€1,543 per hectare) that was 160 percent of the average value of output per hectare on the least profitable group of Cattle Finishing enterprises (€592 per hectare).

3.3 Beef Enterprise Margin Estimates for 2014

As shown in Figure 7, the estimated expenditure on concentrate feed and fertiliser by cattle enterprises decreased in 2014. The large decrease in direct costs offset the negative impact of lower output prices on margins earned in Cattle Finishing and Single Suckling enterprises in 2013.

The gross margins earned on the Single Suckling are estimated to have increased in 2014 by 10 percent the increase in gross margins earned on the average single suckling enterprise is due to a combination of significantly decreased costs of production and declines in output value that have lagged the decline in finished cattle prices. Margins on those single suckling enterprises that are specialised in raising cattle to finish are estimated to have declined by approximately 4 percent, for those enterprises that sell cattle as weanlings it is likely that the increase in gross margins will have been greater than that estimated for the average single suckling enterprise.

Average gross margins earned on Cattle Finishing enterprises in 2014 are estimated to have declined by 9 percent in 2014, with the significant decrease in direct costs (driven mostly by reduced feed expenditure bills) almost, but not completely, offsetting the decline in the value of output. The large reduction in input use volumes on cattle farms marks a reversion to more normal use levels after the abnormally high levels associated with the fodder crisis years 2013/2013.

Single Suckling enterprises in 2014 are, on average, estimated to have earned a negative net margin of €96 per hectare, while Cattle Finishing enterprises are estimated to have earned, on average, a negative net margin of €166 per hectare.

Table A3 and Table A4 decomposes the Single Suckling and Cattle Finishing population into 3 groups of equal number on the basis of profitability (gross margin per hectare) and presents estimates of gross output, direct costs, gross margin and net margin for 2014. The share of purchased feed expenditure in the direct costs of the least profitable farms is in general greater than average and as a result they are estimated to have gained more from the reduction in expenditure on feed in 2014.

For both Single Suckling and the Cattle Finishing enterprises only the top one third of farmers on average earn a positive net margin. The estimated gross margins earned by the bottom one third of both Single Suckling and Cattle Finishing enterprises of less than €100 per hectare highlight the un-economic nature of cattle production on many Irish farms.

4. Outlook for 2015

In this section we forecast the expenditure for various input items, the beef price that is expected to prevail in 2015 and the incomes from the production of cattle in 2015.

4.1 The Outlook for Input Expenditure

4.1.1 Feedstuffs in 2015

Global cereal and oilseed futures market prices point to reduced feed prices through early 2015. This outlook for prices is due to the excellent global harvest in 2014 and the consequential rebuilding of cereal and oilseed stocks in 2013 and 2014. Lower cereal and oilseed prices in 2014 are forecast to result in a reduction in the global cereal and oilseed area harvested in 2015. Assuming that

yields at harvest time in 2015 are normal global feed markets are expected to tighten in the second half of 2015. Thus Irish farmers purchasing animal feed over the course of 2015 are unlikely, on average, to pay considerably lower prices for feed than they have paid in 2014.

For 2015 our feed use forecasts are based on an assumption of normal grass growing conditions. This is likely to lead to little or no change in feed use in 2015. With cattle feed prices are forecast to be unchanged in 2015 relative to 2014 and volumes used also unchanged no change in overall feed expenditure is forecast over and above that in 2014.

4.1.2 Fertiliser in 2015

Despite the recent and forecast future reductions in energy prices, a weaker euro and concern with regard to security of supplies of fertiliser suggest that fertiliser prices may rise in 2015 relative to the average level in 2014. An average increase in prices in 2015 of 7 percent is forecast.

Fertiliser use increased in 2013 as farmers sought to rebuild stocks of conserved forage following the fodder crisis of 2012/2013. Fertiliser use on grassland farms fell in 2014 as a result of better grass growing conditions that allowed for a significant build-up of silage stocks and a grazing season that in some areas has extended into November. In our 2015 forecast we assume that on average fertiliser use in 2015 will be on a par with the 2014 level.

With prices forecast to increase by 7 percent and usage levels remaining stable, total expenditure on fertiliser is forecast to increase by 7 percent in 2015. With contracting costs not forecast to change in 2015 overall, total expenditure on pasture and forage by Irish cattle farmers is forecast to increase by 6 percent in 2015 when compared to the 2014 level.

4.1.3 Energy and Fuel

An analysis of futures prices indicates that the balance of market opinion sees Brent crude oil prices averaging close to the current (November 2014) spot price of to US $87 pb for 2015. This futures contract price, if reflected in spot prices through 2015, would represent a decrease of about 12 percent on the 2014 level. However, exchange rate movements between the euro and the US dollar remain an area of uncertainly and a potential source of energy price inflation in the eurozone.

Electricity prices in 2014 were about 3 percent higher than in 2013. Given the regulation of these prices, further increases are only likely on foot of wider increases in energy prices and power generation costs. Given that the outlook for energy prices is negative, our forecast is that that electricity prices in 2015 will decline on the 2014 level by 3 percent. This would leave overall farm expenditure on energy and fuel down approximately 6 percent in 2015 relative to the 2014 level.

4.1.4 Other Direct and Fixed Costs

Increases in the cost of labour and in general inflation are likely to be relatively low given the continued extremely low inflation environment. An increase in other direct costs of 2 percent with no volume change is assumed. Other overhead (fixed) costs are also forecast to increase by 1 percent in 2015 relative to their level in 2014.

4.2 The Outlook for Cattle and Beef Markets 2015

Ireland exports close to 85 percent of its beef production and is the sixth largest exporter of beef in the world (CSO 2012b, USDA 2014). Conditions in markets to which Irish beef and cattle are exported largely determine Irish cattle prices, though supply developments in Ireland, as in the second half of 2014, can cause Irish cattle prices to deviate from export market prices over the short run.

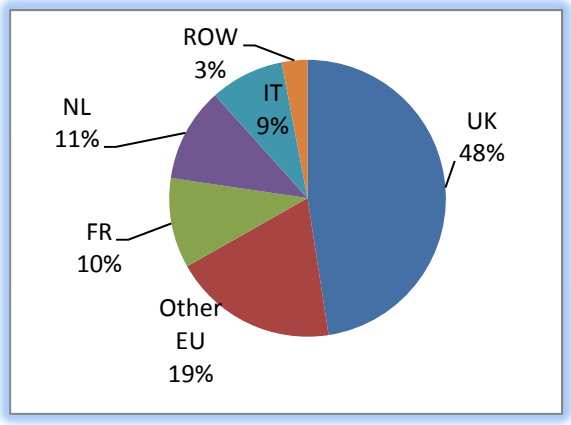
Supply and demand developments on the key export markets for Irish beef in 2015, as well as the reduced availability of cattle for slaughter in Ireland in 2015, will together determine the outlook for cattle prices for Irish beef farmers.

Figure 10 provides an estimate of 2014 Irish beef export destinations based on trade data for the year to the end of September 2014 and illustrates the continuing dominance of the UK in Irish beef exports and the relatively minor role of extra-EU markets in the current Irish beef export mix to date.

The dominance of the UK as an export destination when measured by volume in 2014 is also reflected in the value of beef exports by destination, with the UK accounting for almost 46 percent of exports when measured by value. The lower share of beef

exports to the UK, when measured by value rather than volume, indicates that the unit value of the average tonne of beef shipped to the UK is somewhat lower than the value of the average tonne of beef shipped to other destinations, in particular continental destinations.

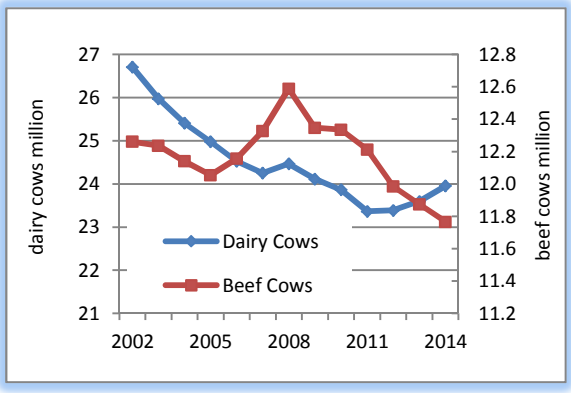
Figure 10: Estimate of Irish Beef Export Markets by Volume in 2014



Source: Eurostat COMEXT, January to September (2014)

In the short run the outlook for finished cattle supplies and for beef supply are determined by the current inventories of animals aged 1-2 years. Inventories for these animals in Ireland are now lower than in 2013, while inventories in the rest of the EU are slightly lower than in 2013. This status indicates that EU production of beef in 2015 will be at best stable relative to that in 2014 while supplies of finished cattle in Ireland and beef production will be below that observed in 2014. In the medium term (beyond 2015) inventories of breeding animals are the key determinant of beef supply. Figure 11 illustrates the recent trends in dairy and beef cow inventories in the EU (readers should note that the different scales on right and left axes). The imminent abolition of milk quota has in 2013 and 2014 led to increases in the numbers of dairy cows in the EU. Since dairy cows account for over two thirds of the stock of cows in the EU, the upturn in dairy cows number has meant that cow numbers have increased marginally in 2013 and 2014. This development could represent a trend break and a change from the historical trend of declining aggregate (dairy and suckler) EU cow numbers. Further increases in dairy cow numbers will underpin EU aggregate supplies of beef in the medium term, despite on-going contraction in the EU suckler cow herd. As a result of stabilising aggregate cow numbers , that results from expanding dairy production, The outlook for EU beef production in the near to medium term remains stable (EC, 2014; OECD 2014; EBLEX 2014).

Figure 11: EU28 Cow Numbers (June) 2002 - 2014



Source: Eurostat

Given the stability forecast for EU beef production in 2014, the outlook for EU (and Irish) finished cattle prices depends largely on the prospects for demand in the UK and the eurozone. The forecast tightening of supplies in Ireland and the UK in particular will also affect the basis between Irish and UK cattle prices in 2015.

The macroeconomic outlook for the Eurozone remains gloomy. The CEPR Eurozone Business Cycle Dating Committee has recently concluded that the Eurozone remains in the recession it entered in Q3 2011 (CEPR, 2014). The macroeconomic outlook for the UK, the Irish beef sector's largest export market, by contrast seems to offer the prospect of growth in consumer demand (HM Treasury, 2014). The UK economy is now growing at a relatively strong rate, and with falling unemployment and some increases in disposable incomes, demand for beef should grow. With lower beef production forecast in Ireland and the UK in 2015, growth in the UK economy should provide space for higher cattle prices in both Ireland and UK.

The European Commission's most recent forecasts (EC, October 2014) show both EU beef consumption and production declining in 2015 compared to 2014 and EU average cattle prices remaining largely unchanged as a result. The uncertainty associated with EU beef consumption is much greater than that associated with production. The likelihood of a greater contraction in demand for beef across the EU is increasingly strong and this factor will continue to constrain the outlook for EU and Irish cattle prices.

Beef imports into the EU in 2015 are unlikely to grow over and above the volumes imported in 2014 and are unlikely to be a source of downward pressure on EU prices. Imports into the EU will in part remain constrained by sanitary and phytosanitary (SPS) non-tariff barriers to trade. However, for 2015 the forecast strength of the global beef markets and the export opportunities created for non-EU exporters of beef to Russia by the trade embargoes imposed on the EU as a result of the on-going political crisis in Ukraine will limit the volumes of beef entering the EU in 2015.

Overall our forecast is that Irish cattle prices will increase by 4 percent over their 2014 level, while average EU prices are forecast to be unchanged on their 2014 levels.

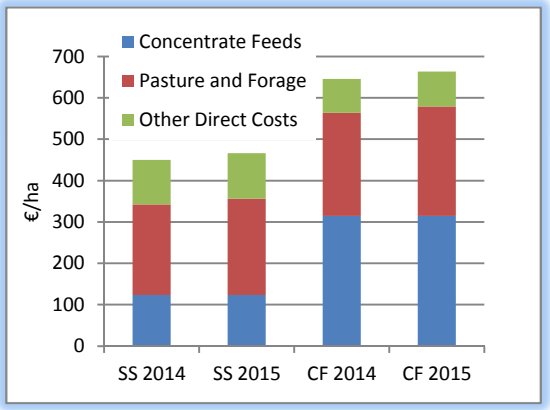
Prices of calves and weanlings in Ireland have in recent years fluctuated widely. Our expectation is that Irish calf and weanling prices will increase in 2015 in line with finished cattle prices The evolution of the supply of calves and weanlings will be a function of the evolution of the dairy and suckler cow inventories nationally. Given the continued low returns to beef farming we are likely to see continued contraction in suckler cow numbers and in supplies of beef calves and weanlings. The opposite dynamic is at play in the dairy component of the Irish beef supply equation. Despite the likely diminished profitability of dairy production in 2015, supplies of dairy calves and weanlings are likely to continue to increase and the spread between dairy and beef calf and weanling prices is likely to widen in 2015.

4.2.1 Outlook for Beef Enterprise Net Margins in 2015

Figure 12 compares the estimated and forecast average direct costs per hectare in 2014 and 2015 for the Single Suckling and Cattle Finishing enterprises. With prices for cattle of all ages forecast to increase in 2015, gross output on both Single Suckling and Cattle Finishing enterprises are forecast to grow on the estimated 2014 levels. With expenditure on feed forecast to be more or less unchanged in 2015 and pasture and forage expenditure costs expected to increase, margins earned on both Single Suckling and Cattle Finishing enterprises are forecast to improve over the level estimated for 2014.

In our 2015 forecast as in the forecast for 2014 (Hanrahan, 2013) we have attempted to incorporate the payments made to farmers under the Government's *Beef Data Programme* and the *Beef Genomics Scheme* into our forecasts of output value on cattle farms. Given the announcements in Budget 2015, we do not expect these schemes to contribute to the value of output on Irish cattle farms over and above the contribution in 2014.

Figure 12: Estimated Direct Costs for 2014 and Forecast Direct Costs for 2015



Source: Author's Estimates 2014 and Forecasts 2015

Gross margins for the Single Suckling enterprise are forecast to grow in 2015, with the 2015 level forecast to be 5 percent higher than that achieved in 2014. The forecast improvement in prices and output value is sufficient to outweigh the impact of increased in direct costs of production.

The forecast growth in gross margin per hectare on Cattle Finishing farms in 2015 is 6 percent. For cattle finishing enterprises modest improvements in output prices are sufficient to offset the forecast increase in pasture and forage costs. Importantly for finishers costs of concentrate feed are not expected to increase over the whole of the year though. The expected path of feed prices over the next year is one in which prices fall over the first two quarters of 2015 and then increase in the final two quarters of 2015. The timing of feed purchase and use across farms will have an impact of the extent to which the forecast stability in average annual concentrate feed expenditures is reflected in individual farm level outcomes.

The average net margin per hectare for Single Suckling enterprises in 2015 is forecast to be -€79, an improvement on the estimated net margin of -€96 in 2014. Net margins on average on Cattle Finishing farms are also forecast to improve in 2015, with the forecast average margin of -€144, lower than the average negative net margin of -€166 per hectare estimated for 2014. The forecast average margins earned on the least, average and

most profitable of the Single Suckling and Cattle Finishing enterprises are presented in Table A3 and Table A4.

5. Concluding Comments

In 2014 the economic performance of Cattle Finishing and Single Suckling enterprises was dominated by two factors: i) deteriorating finished cattle prices and ii) lower input expenditure as input use levels (in particular purchased feed) reverted to normal levels following the fodder crisis of 2012/2013 . Most of the discussion about the fortunes of the sector over the course of 2014 has understandably focused on the former aspect with the impact of lower costs, in general, not considered. The results presented here suggest that rather than causing a significant worsening of the economic basis of beef cattle production in Ireland the lower finished cattle prices, when considered in the context of reduced costs of production, have instead maintained the economic status of much of Irish beef production.

The estimated gross margins earned in 2014 on both the single suckling and cattle finishing enterprises have moved in different directions relative to 2013. Margins on single suckling enterprise have improved while those on cattle finishing farms have deteriorated, nevertheless, the changes in output and costs have left the estimated incomes earned well within the range of incomes earned in recent years. The continuing low level of the incomes that are being earned from beef farming, i.e. the endemic profitability problem of the Irish beef production sector, remains unchanged in 2014.

There are grounds for some optimism in relation to Irish cattle prices as a result of the reduced numbers of cattle that will be available for slaughter in Ireland in 2015. Based on AIMS, CSO and Eurostat data the numbers of animals available for slaughter in 2015 are likely to be between 8 and 10 percent lower than in 2014. UK production is also likely to be lower than in 2014. However, optimism about what this supply development will mean for prices is based on an "other things equal" mind-set; unfortunately from the perspective of Irish beef producers other things (in 2015) may not be equal. While the aggregate supply of beef in the EU market is likely to be stable, the aggregate demand for beef in the EU, and in particular from Eurozone member states, could contract in 2015. A significant further deterioration in the macroeconomic performance of the Eurozone and concomitant reduction in EU demand for Irish beef would severely constrain the scope for improved cattle prices in 2015.

On balance our forecast is for some modest improvement in Irish cattle prices in 2015 driven by tighter Irish cattle supplies and a farmer friendly shift in the UK beef supply and use balance. The continuing weak demand picture from continental Europe that accounts for close to 50 percent of Irish beef exports by volume and slightly more than 50 percent of exports by value will constrain the magnitude of the forecast price improvement.

Despite the improvement in gross margins forecast for Single Suckling farms in 2015, the absolute level of margin that is forecast to be earned per hectare on Cattle Finishing farms in 2015 (€383 per hectare) is 13 percent higher than the average gross margin per hectare that forecast for Single Suckling enterprises (€340 per hectare). This disparity in margins earned per hectare along the cattle supply chain has grown since the decoupling of direct payments from beef production in 2005. While movements in output prices among young and finished cattle can reduce the gap in earnings per hectare, some of the difference in earnings per hectare is structural and reflects underlying differences in quality of landed farmed on single suckling and cattle finishing enterprises. Narrowing the gap in earnings per hectare on average single suckling and cattle finishing enterprises via relative movements in finished and young cattle prices alone is unlikely to be successful and structural problems may require structural solutions.

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Table A1: 2013 and Estimated 2014 Financial Performance per hectare: Single Suckling Enterprise

	Most Profitable	Average Profitability	Least Profitable	Average
Gross Output 2013	1,198	756	507	819
Direct Costs 2013	610	501	462	524
Concentrate Costs	192	157	154	168
Pasture and Forage Costs	286	243	225	251
Other Direct Costs	132	101	83	105
Gross Margin 2013	588	255	45	295
Overhead Costs 2013	481	365	289	417
Net Margin 2013	106	-111	-244	--122
Gross Output 2014	1,133	715	480	775
Direct Costs 2014	526	431	394	450
Concentrate Costs	141	116	113	124
Pasture and Forage Costs	250	212	196	219
Other Direct Costs	135	103	85	107
Gross Margin 2014	607	284	85	325
Overhead Costs 2014	485	368	292	420
Net Margin 2014	122	-84	-207	-96

Source: Teagasc National Farm Survey Single Suckling Enterprise Fact Sheet 2013 (Teagasc NFS, 2014a) and Authors' Estimates 2014

Table A2: 2013 and Estimated 2014 Financial Performance per hectare: Cattle Finishing Enterprise

	Most Profitable	Average Profitability	Least Profitable	Average
Gross Output 2013	1,774	1,056	680	1157
Direct Costs 2013	993	688	614	760
Concentrate Costs	602	367	317	425
Pasture and Forage Costs	296	242	227	254
Other Direct Costs	95	79	70	81
Gross Margin 2013	781	368	66	397
Overhead Costs 2013	516	463	354	530
Net Margin 2013	265	-94	-288	--133
Gross Output 2014	1,543	919	592	1007
Direct Costs 2014	798	593	532	646
Concentrate Costs	443	270	233	315
Pasture and Forage Costs	258	242	227	249
Other Direct Costs	97	81	71	83
Gross Margin 2014	745	326	60	361
Overhead Costs 2014	520	466	357	526
Net Margin 2014	225	-140	-297	-166

Source: Teagasc National Farm Survey Single Suckling Enterprise Fact Sheet 2013 (Teagasc NFS, 2014a) and Authors' Estimates 2014

Table A3: Forecast 2015 Single Suckling Enterprise Financial Performance per hectare

	Most Profitable	Average Profitability	Least Profitable	Average
Gross Output 2015	1178	744	499	806
Direct Costs 2015	544	446	409	466
Concentrate Costs	141	116	113	*124*
Pasture and Forage Costs	265	226	209	*233*
Other Direct Costs	137	105	86	*109*
Gross Margin 2015	634	297	90	340
Overhead Costs 2014	483	367	290	419
Net Margin 2015	151	-69	-200	-79

Source: Author's forecast 2015

Table A4: Forecast 2015 Cattle Finishing Enterprise Financial Performance per hectare

	Most Profitable	Average Profitability	Least Profitable	Average
Gross Output 2015	1605	955	615	1047
Direct Costs 2015	817	610	547	663
Concentrate Costs	443	270	233	315
Pasture and Forage Costs	275	257	241	265
Other Direct Costs	99	82	73	84
Gross Margin 2015	788	368	66	383
Overhead Costs 2015	514	461	353	528
Net Margin 2015	274	-93	-287	-144

Source: Author's forecast 2015

Review of Sheep Farming in 2014 and Outlook for 2015

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1. Introduction

For this paper, data from farms in the Teagasc National Farm Survey (NFS), which have a mid-season lowland lamb enterprise, are used. This information, together with data from Bord Bia, the Central Statistics Office (CSO), European Commission DG Agri and Eurostat, is used to analyse the financial performance of Irish sheep farms. Estimates of enterprise margins for 2014 are based on 2013 Teagasc NFS data (Hanrahan et al. 2014) and CSO price indices for the year to date (CSO, 2014b). Forecasts for sheep enterprise margins for 2015 are based on our estimates of margins for 2014, and forecasts of input and output price changes in 2015.

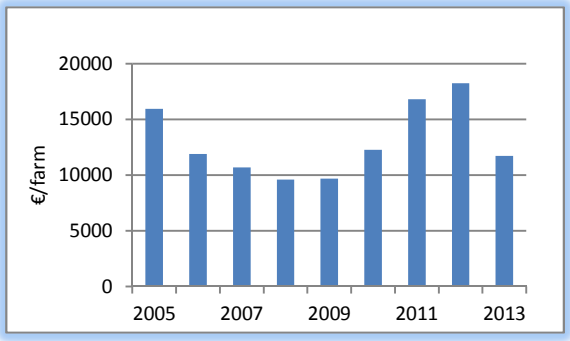
We begin the paper with a brief review of the outturn for family farm income (FFI) for the Teagasc NFS *mainly sheep* farms in 2013. A detailed assessment of the 2013 mid-season lowland lamb enterprise margins is then presented in section 3. This is followed by an overview of the current short term outlook for European and Irish sheep markets in section 4. Estimates and forecasts of margins for the lowland mid-season lamb enterprise for 2014 and 2015 are then presented in sections 5 and 6. The mid-season lowland lamb enterprise is the predominant lowland sheep system in Ireland. In our analysis we have limited the sample analysed to those enterprises with more than 20 breeding ewes.

National policy in relation to the sheep sector, namely the *Sheep Grassland Scheme,* has operated since 2010. This scheme has boosted sheep enterprise margins over the period 2010-2014. Implementation of the June 2013 CAP reform agreement in Ireland will involve the incorporation of the Sheep Grassland Scheme's payment within the decoupled direct payments (so-called Basic Payment) received by sheep farmers in 2015. Consequently, this element of farm gross output value, which was previously an element of enterprise gross output, will no longer contribute to sheep enterprise margins from 2015 onward. The payment remains a part of farm income but the change in the nature of the payment means that caution should be exercised when comparing 2015 forecast output and margins with those earned in the period 2010 to 2014.

2. Review of the Economic Performance of Sheep Farms in 2013

FFI on those farms classified by the Teagasc NFS as *mainly sheep* farms decreased strongly in 2013, with FFI on sheep farms decreasing by over 35 percent on the previous year. The average FFI earned on these farms for the period 2005 to 2014 are shown in Figure 1.

Figure 1: Average Income on Mainly Sheep Farms in Ireland: 2005 to 2013



Source: Teagasc National Farm Survey

The large decrease in FFI on sheep farms in 2013 was due to very large increases in input expenditure, particularly on feed and fertiliser and lower level of output. The decline in output was associated with the sheep enterprise and other farm enterprises on sheep farms.

In the remainder of this paper we focus exclusively on the mid-season lamb enterprise as the unit of analysis. This allows us to isolate the impact of developments in sheep output prices and related costs of production on profitability of Irish sheep production.

3. Sheep Margins in 2013

Changes in the value of output, costs and gross margin per hectare for the mid-season lowland lamb enterprise in 2013 are shown in Table A1 of the Appendix to this paper. The value of gross output for mid-season lamb enterprises in 2013 increased due to improvements in lamb prices over those that prevailed in 2012. The principal

determinant of gross margins in 2013 was the dramatic increase in direct costs of production associated with the higher feed expenditure in the winter and spring of 2012/2013.

Total direct costs per hectare on the average mid-season lamb enterprise increased dramatically in 2013. This increase in direct costs was largely due to increases in the cost of concentrates and other elements of direct costs. Large differences in the profitability of sheep farms operating the mid-season lamb system continue to persist, and reflect continuing differences in the intensity of production and farm management performance.

For comparison purposes, in Table A2 mid-season lowland lamb enterprises are ranked on the basis of gross margin per hectare, and assigned to three equally sized groups which we have termed *least, average* and *most* profitable. The average levels of output, direct costs and gross and net margin per hectare and indicators of technical performance across these three groups can then be compared.

The most profitable one third of mid-season lamb enterprises earned an average gross margin of €896 per hectare in 2013, while farms in the bottom group earned an average gross margin of only €187 per hectare. This means that the top producers earned, on average, almost 5 times more per hectare than their counterparts in the bottom group. The large differences in gross margin earned per hectare reflect differences in intensity of production, but also differences in direct costs per hectare (see Table A2). Total direct costs per hectare are greatest on the group with the highest level of profitability reflecting the higher stocking rate on these farms.

When direct costs of production per kilo of lamb carcass produced are compared, the impact of different levels of production intensity per hectare can be taken into account. Direct costs of production per kilo of lamb carcass produced on the least profitable farms are more than 40 percent higher than the costs per kilo incurred on the most profitable of the mid-season lamb enterprises.

The large differences between the values of output per hectare between the three groups of farms are due to differences in weaning and stocking rates. Higher levels of technical performance are reflected in the average carcass output per hectare of 231 kg on the most profitable mid-season lamb enterprises, versus 144 kg on the least profitable enterprises.

The average net margins for midseason lamb enterprises have remained positive in 2013 despite the large increase in the direct costs of production incurred in 2013. The average net margin earned on the mid-season lamb enterprises analysed in 2013 was €41 per hectare. As the data in Table A2 show, the large variation in gross margin earned per hectare is also reflected in variation in the net margins earned.

4. Sheep Meat Markets: Short run outlook

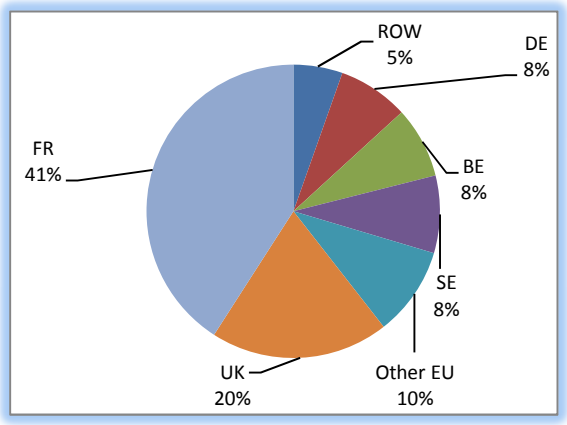
The bulk of Irish lamb output is destined for foreign markets and in 2013 over 80 percent of Irish lamb production was exported (Bord Bia, 2014). This means that anticipating 2015 lamb price developments for Ireland's export markets remain critical in determining the prices that Irish sheep farmers receive for their output. The relative prices of competing meats (beef, pig and poultry meat) also have an impact on demand for Irish lamb, both in Ireland and on export markets, and hence also affect the prices for lamb that Irish sheep farmers receive.

Though continental EU markets account for the majority of Irish lamb exports, the UK market remains important as a market for Irish exports. UK lamb, together with non-EU imports, competes with Irish lamb on Continental EU and UK markets. The UK in 2014 accounted for an estimated 20 percent of Irish sheep meat exports as illustrated in Figure 2. Aggregate EU demand for lamb has been contracting in recent years and the European Commission's latest forecasts are for consumption to stabilise in 2015 (EC, 2014). The continued gloomy outlook for the Eurozone macroeconomy in 2015 (CEPR, 2014) means that in our view growth in the per capita demand for lamb in 2015 is likely to be negative. This weak European demand outlook, combined with developments in sheep supply, both within the EU and on the world market, will determine the short-run outlook for European (and Irish) lamb prices.

The outlook for the supply of sheep meat within the EU is forecast to be stable in 2015, with growth in heavy lamb output limited to the UK and this growth is likely to be offset by contractions in other northern European countries. Recent growth in Irish ewe numbers has effectively ground to a halt according to the latest (June 2014) CSO survey

(CSO, 2014a), with inventories of breeding ewes 2 percent lower than in 2013.

Figure 2: Irish Sheep and Lamb Meat Exports (Volume) by Destination in 2014



Source: Eurostat COMTRADE database

The indigenous production of lamb in the EU in 2015 will largely be a function of the 2014 ending inventory of breeding ewes. Total EU ending inventories of ewes in 2014 are forecast to be lower than in 2013. The UK sheep breeding flock in June 2014 decreased marginally over the level in 2013, while UK stocks of ewes intended for first time breeding were down over 3 percent (DEFRA, 2014). Despite lower June 2014 inventories EBLEX expects that breeding ewe numbers in December 2014 will be marginally higher than in 2013 (EBLEX, 2014). Continental EU inventories of breeding sheep and lambs available for slaughter are forecast to be stable in 2015 (EC, 2014). Overall, the EU supply of sheep meat is forecast to be relatively unchanged as compared to 2014.

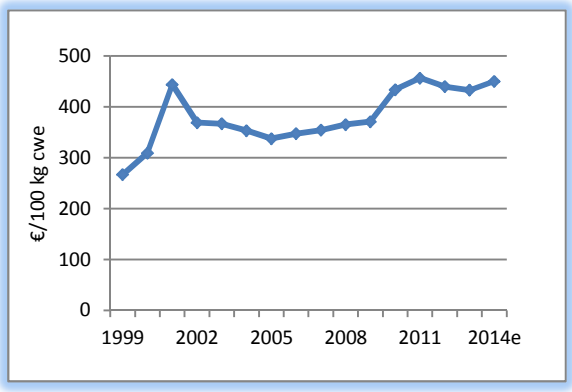
Beef and Lamb New Zealand (B&LNZ, 2014) and the New Zealand Ministry for Primary Industries (MPI, 2014) expect New Zealand lamb shipments in 2015 to be largely stable and while exports to China are forecast to grow in 2015, the dramatic increase in lamb and mutton shipments to China in 2014 is not forecast to be repeated. New Zealand's lamb EU Tariff Rate Quota (TRQ) was not fully utilised in 2013 and given imports from New Zealand for the year to date it is unlikely to be fully filled in 2014. Australian lamb exports are also expected to decrease in 2015. ABARES is forecasting that Australian lamb exports in 2014/15 will decrease by 4 percent (ABARES, 2014) due to lower breeding sheep numbers and increased lamb retentions by Australian farmers seeking to rebuild flocks following a number of years of dry conditions. ABARES (2014) is forecasting that exports to the EU which increased in 2014 will contract due to lower overall volumes of Australian lamb exports and the reorientation of trade towards East Asian and Middle East markets.

With stable EU supply of sheep meat and lower imports from Australia and New Zealand, the outlook for European and Irish lamb prices in 2015 depends on the outlook for demand for lamb in 2015. Demand for sheep meat has contracted since the onset of the Eurozone recession in 2011. The current macroeconomic outlook for the Eurozone suggests that European lamb prices will at best stay stable and in 2015 are at risk of falling relative to prices in 2014. Our forecast is that lamb prices in 2015 will be unchanged from 2014 levels.

5. Estimated Sheep Gross Margins 2014

To obtain an estimate of farm profitability for 2014, 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 produced. In our estimates for 2014 (and forecasts for 2015) we have assumed that stocking rates per hectare and weaning rates are unchanged from the observed 2013 levels. An increase in the intensity of lamb production, such as for example an increase in the number of ewes stocked per hectare or in the numbers of lambs per ewe, would change both the costs of production per hectare and the gross output per hectare. Such changes could lead to improvements in enterprise profitability. There are most likely also farms for which an increase in stocking rates could lead to lower profits.

Figure 3: Irish Lamb Price, 1999 – 2014



Source: European Commission DG AGRI and Bord Bia

The sheep and lamb market in 2014 was characterised by reduced imports on the EU market and reduced indigenous supplies of EU sheep meat. This contraction in supply of lamb meant that, despite the decline in the demand for lamb within the EU, European prices for heavy

lamb increased in 2014. Irish lamb prices in 2014 were approximately 4 percent higher than in 2013 (see Figure 3). The value of market based gross output per hectare for the mid-season lamb system in 2014 is thus estimated to have increased.

The main direct costs of production for Irish sheep farms are purchased feed, pasture and forage costs. Given our assumptions of unchanged stocking and weaning rates, the evolution of direct costs per hectare determines the extent to which the increase in gross output in 2014 was also reflected in higher gross margins.

Purchased feeds typically account for 40 percent of total direct input expenditure on the average mid-season lowland lamb system. Over the course of 2014 purchased sheep feed prices declined by 10 percent. The impact of lower prices of concentrates in 2014 on feed expenditure was magnified dramatically by the large reduction in the volume of feed used on average on Irish sheep farms. Sheep enterprises where feed use is concentrated in the winter and spring period were particularly affected by the 2012/2013 fodder crisis., In 2014 normal to above average grass growing conditions have allowed for a dramatic fall in the volume of sheep feed used. Department of Agriculture, Food and the Marine data for the first two quarters of 2014 (DAFM, 2014) indicate that total sales of sheep feed were over 20 percent lower, in volume terms, than in the same period in 2013. We estimate that total concentrate use per hectare in 2014 is likely to have decreased by up to 20 percent on the level observed in 2013. Given the decrease in the price of sheep feed and the evidence for a large decrease in volumes of feed used, expenditure on concentrates is estimated to have decreased by 28 percent in 2014.

Pasture and forage costs typically account for approximately 30 percent of total direct costs on the mid-season lowland lamb system. Fertiliser prices have declined in 2014, with prices estimated to have declined by 8 percent in 2014 (CSO, 2014b). Fertiliser sales data from the Department of Agriculture, Food and the Marine indicate that the volume of fertiliser sales also declined in 2014. We estimate that fertiliser applications by Irish sheep farmers have decreased in 2014 by approximately 6 percent. With some decrease in contracting charges in 2014 we estimate that expenditure on pasture and forage in 2014 on the average mid-season lamb enterprise decreased by 13 percent.

Lower direct costs, combined with an increase in the value of market gross output (inclusive of the Sheep Grassland Payment) are estimated to have led to an increase of 24 percent in the gross margin earned from lowland mid-season lamb enterprise in 2014 to €651 per hectare (see Table A3).

6. Outlook for the Sheep Enterprise Gross Margin in 2015

Despite the forecast stability of aggregate European supplies in 2015 and the continuing tight global supply situation, continuing weak demand on continental EU markets is forecast to leave Irish and EU prices largely unchanged in 2015 when compared with 2014.

The outlook for input prices in 2015, from the perspective of Irish sheep farmers, is broadly neutral. Gains in terms of lower sheep feed prices are likely to be offset by higher fertiliser prices and prices of other inputs.
Concentrate costs are the largest direct cost item for mid-season lowland lamb enterprises and prices of concentrates are forecast to decrease by 2 percent in 2015, with volume of feed use forecast to be unchanged in 2015relative to 2014, total expenditure on concentrates is expected to contract by 2 percent in 2015.

The price of fertiliser is forecast to increase in 2015 by 7 percent. With slightly negative energy price inflation forecast for 2014, contractor costs are expected to be largely stable in 2015. Overall, pasture and forage costs on Irish lowland mid-season lamb enterprises are forecast to increase by 6 percent in 2015 relative to the 2014 level.

Table A3 summarises our forecasts of output, costs and margins for the mid-season lamb enterprise for 2015. Given the stable outlook for lamb prices in 2015 relative to 2014, the incorporation of the previously coupled *Sheep Grassland Scheme payment* into the decoupled Basic Payment in 2015 (under the Irish implementation of the June 2013 CAP reform agreement), and the increase in input costs forecast for 2015, the average gross margin earned from sheep farming is forecast to decrease in 2015.

The gross margin per hectare for the mid-season lamb system in 2015 is forecast to be €592, a 9 percent decrease from the 2014 estimate. If the

now decoupled sheep grassland payment is retained in the calculation of gross output on the mid-season lamb enterprise, the enterprise gross margin is forecast to decline by 1 percent in 2015.

On the basis of our analysis of future contract prices for crude oil, fuel costs are expected to fall slightly in 2015. Other fixed costs are forecast to decrease marginally in 2015, so that total overhead costs on the mid-season lamb enterprise are forecast to be fall marginally in 2014.

With at best stable lamb prices, higher direct costs, and slightly lower overhead costs (that on average in 2015 are estimated to be €477 per hectare) average net margins per hectare from sheep production are forecast to decrease in 2015. Assuming that the share of overhead costs allocated to the mid-season lamb enterprise is unchanged in 2015, average net margins (exclusive of the now decoupled sheep Grassland Scheme payment) per hectare are set to fall over 32 percent from the levels estimated for 2014 to €116 per hectare in 2015.

7. Concluding Comments

The average gross margin earned by mid-season lamb producers in 2014 is estimated to have increased by 24 percent relative to that earned in 2013. The estimated increase in gross margins on the mid-season lamb enterprises is largely due to reductions in the costs of production in 2014 that were augmented by higher lamb prices.

Output prices in 2015 are unlikely to be higher than those observed in 2014. Contracting demand for lamb in the EU in 2015 due to the continuation of the Eurozone recession in our forecast prevents contraction in indigenous EU production and import supplies from Australia and New Zealand from pushing EU and Irish prices above the levels observed in 2014. Stable output prices combined with slightly higher input costs should see a small deterioration in the profitability of mid-season lamb production in Ireland in 2015.

Our forecast is that gross margins earned by the average mid-season lamb enterprise in 2015 will be €593 per hectare, a decrease of 9 percent from the estimated gross margin in 2014. It should be noted that the majority of this decrease arises from the impact of the incorporation of the previously coupled *Sheep Grassland Payment* in the decoupled Basic Payment in 2015. With reduced gross margins average net margins are also forecast to decrease, with the average mid-season lamb enterprise forecast to earn a net margin of €116 per hectare in 2015.

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Table A1: Average Mid-Season Lamb Output, Direct Costs, Gross Margin and Technical Performance

	2013	2014e
	€/ha	
Gross output	1,035	1,076
Sheep Grassland Scheme Payment	51	51
Direct Costs	511	426
Concentrates	244	176
Pasture and Forage costs	153	134
Other direct costs	114	116
Gross Margin	524	651
Overhead Costs	483	479
Net Margin	41	171
Ewes/ha	7.45	7.45
Lambs per ewe	1.27	1.27
Lamb Carcass (kg)/ha	189	189

Source: Teagasc National Farm Survey and Authors' estimates for 2014
Note: In calculating the volume of lamb carcass output per hectare an average carcass weight of 20 kg has been used (Hanrahan, 2006)

Table A2: Mid-Season Lamb Output, Costs, Margins and Technical Performance in 2013 by gross margin grouping

	Most Profitable	Average Profitability	Least Profitable
		€/ha	
Gross Output	1439	1014	670
Direct Costs	543	509	483
Concentrates	234	242	257
Pasture and Forage	197	143	121
Other Direct Costs	112	123	106
Gross Margin	896	505	187
Net Margin	361	-4	-219
Ewe/ha	8.75	7.40	6.27
Lambs/ewe	1.32	1.32	1.15
Lamb carcass (kg)/ha	231	195.36	144.21
Dir. costs €/kg carcass	*2.35*	2.61	3.35

Source: Teagasc National Farm Survey
Note: In calculating the volume of lamb carcass output per hectare an average carcass weight of 20 kg has been used (Hanrahan, 2006).

Table A3: Average Mid-Season Lamb Enterprise Costs, Output, Gross and Net Margin, 2013 – 2015

	2013	2014 [e]	2015 [f]
		€/ha	
Total Direct Costs	511	426	433
Concentrates	244	176	172
Pasture and Forage	153	134	142
Other Direct Costs	114	116	119
Gross Output	1,035	1,076	1,025
Sheep Grassland Payment	51	51	0
Overhead Costs	483	479	477
Net Margin	41	171	116

Source: Teagasc National Farm Survey. [e] Estimate, [f] Forecast

Review of Tillage Farming in 2014 and Outlook for 2015

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1. Introduction

Harvest prices in the cereals sector in 2014 were considerably lower than those achieved in 2013. However, yields for the majority of Irish cereal crops were higher than those achieved at harvest 2013, taken together these developments lead to a mixed story in terms of output value. However, for Irish tillage farmers there was good news in terms of how costs evolved in 2014, with most direct costs decreasing.

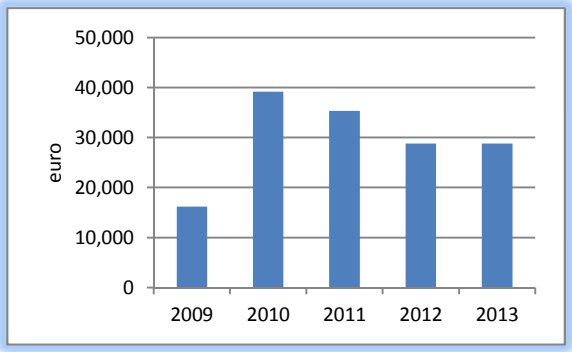
The downward movement in cereal prices since mid 2014 was associated with several factors, the most important of which was an increase in the production estimates for crops in key producing countries. Higher production globally resulted in an increase in stocks and a less restrained global supply and demand balance in 2014/15.

This paper will consider whether the price decreases of the 2014 harvest can be considered atypical or whether prices will continue at these levels into the 2015 harvest. The paper uses Irish Teagasc National Farm Survey (NFS) data to conduct a review of the financial performance of tillage farms in 2013. Following this, prices and costs are estimated for 2014 and these are used to produce an estimate of profit for the 2014 harvest year. In the concluding sections of the paper, forecasts for 2015 are presented.

2. Review of the Economic Performance of Tillage Farms in 2013

Approximately 6,660 mainly tillage farms were represented by the NFS in 2013. Income on tillage farms decreased by 22 percent between 2012 and 2013. Market based gross output declined by approximately 13 percent, despite yield improvements, due to lower prices and area harvested. Yields per hectare increased by between 13 and 33 percent, depending on the crop examined, while price per tonne decreased by on average 25 percent. Input expenditure decreased by about 5 percent. These changes resulted in an average family farm income (FFI) in 2013 of €28,797 which is equivalent to justa 1 percent increase on the average FFI on tillage farms over the years 2003-2012.

Figure 1: Average Income on Irish Specialist Tillage Farms 2009 to 2013*

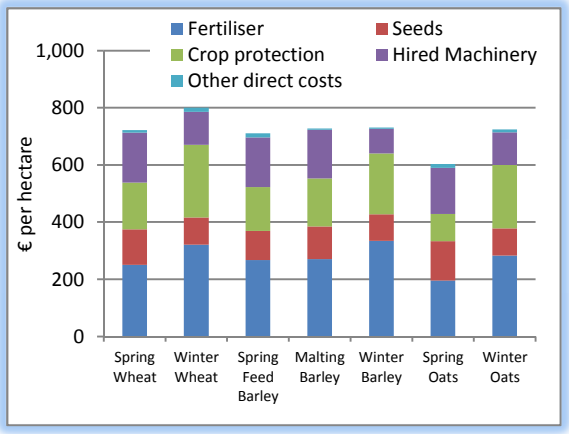


Source: Teagasc, National Farm Survey (various years) and authors own estimates

*adjustments made to sample to reflect change in sample selection post 2011

To understand the economic performance of tillage farms in 2013, we begin with a review of the cost and return structure of the main cereal crops using NFS data. Figure 2 disaggregates the direct 2013 costs of production for the principal cereal crops grown on Irish farms.

Figure 2: Composition of Direct Costs for Cereal Crops, 2013

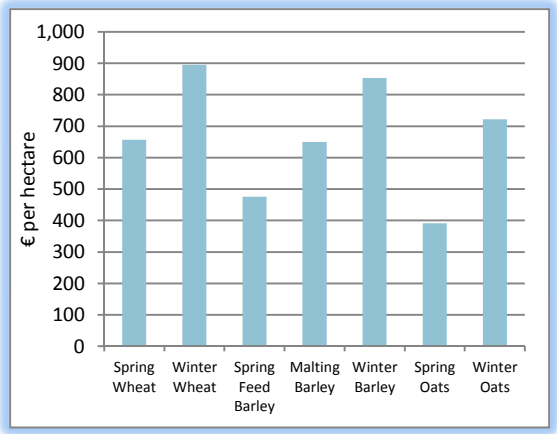


Source: Teagasc, National Farm Survey

Figure 2 shows that in general, direct costs are higher for winter sown crops compared to spring sown crops, due to the higher fertiliser and crop protection costs incurred in growing winter crops. However, given that yields are generally higher in winter sown crops the more appropriate

comparative economic indicator is gross margin which is shown in Figure 3.

Figure 3: Gross Margins per hectare for Cereal Crops, 2013



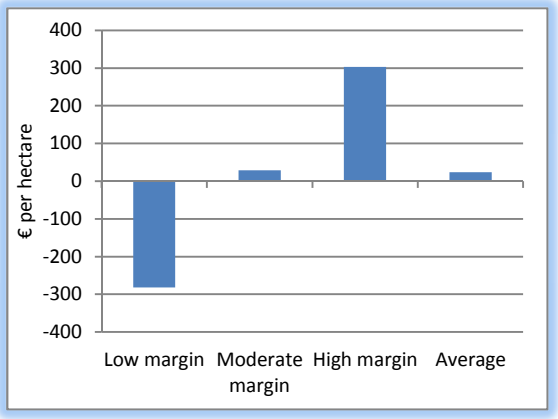
Source: Teagasc, National Farm Survey Data

Figure 3 shows that the average gross margin per hectare for all winter crops is higher than the gross margin for equivalent spring sown crops. Winter wheat recorded the highest margin of all crops in 2013, followed by winter wheat and winter oats (see Table A1 in the appendix to this paper for further details). The gross margin for the two main cereal crops, spring barley and winter wheat, told two very different stories in 2013 relative to 2012. Spring barley gross margins declined in 2013 relative to 2012, while gross margins on winter wheat farms increased by nearly 20% in 2013 relative to 2012.

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 and straw output to individual crops using NFS data. For this reason, net margin of the entire specialist tillage farming population within the NFS is examined, and this is shown in Figure 4.

To examine the variation in net margins earned by tillage farms the sample, which represents a population of 6,660 specialist tillage farms, was classified into three groups. Farms were classified on the basis of net 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 Irish tillage farms is readily apparent from Figure 4. The net margin for the cereal enterprise per hectare on high margin farms in 2013 was approx. €300 per hectare compared to €30 on moderate margin farms and -€280 per hectare on low margin farms. It is important to remember that these margins include production output only; hence by definition the Single Farm Payment (SFP), which is decoupled from production, is not included in these figures.

Figure 4: Cereal Enterprise on Specialist Tillage System Farms: Net Margin Distributions, 2013



Source: Teagasc, National Farm Survey Data

3. Review of Estimated 2014 Performance

This section of the paper presents a review of the cereal sector in 2014. 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 produced in 2014. The ensuing sections of the paper discuss first, the movements in input prices and usage in 2014 and second, the cereal market conditions, harvest yields, and production in 2014.

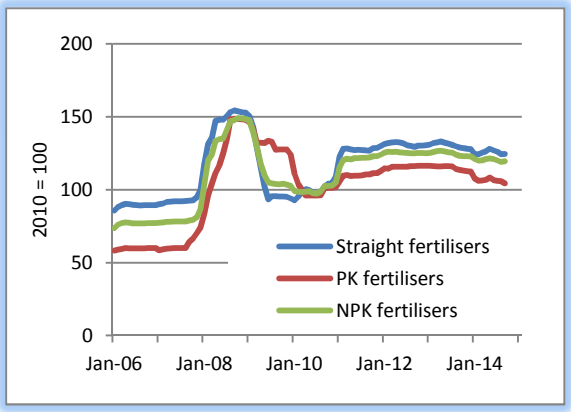
3.1 Estimated Input Usage and Price 2014

3.1.1 Fertiliser – Usage and Price 2014

In the early half of the last decade fertiliser costs typically comprised about 25 percent of direct costs and just over 10 percent of total costs on tillage farms. However, as illustrated in Figure 5, fertiliser types commonly used on tillage farms have increased substantially in price since 2005. The price increases in recent years have meant that fertiliser prices now represent a larger proportion of costs on tillage farms than previously; in 2013 fertiliser costs represented

about 35% of direct costs on tillage farms and around 18% of total costs. The Central Statistics Office (CSO) recorded prices in 2008 for P&K and straight nitrogen fertilisers that were approximately 125 percent and 75 percent higher than 2005 levels respectively. Increased energy prices, in particular the price of natural gas which is a key determinant of fertiliser price, was the major driving force behind the upward trend for fertiliser prices through the second half of the 2000s. Increased demand and relatively fixed production capacity was also a factor. However, following the peak in 2008 and 2009, the pressure on fertiliser prices eased somewhat for the 2010 harvest year, but upward pressure on fertiliser prices has arisen in each consecutive harvest year with the exception of 2013 when a slight decline in fertiliser costs was evident. In the 2013/14 harvest year it is estimated that straight nitrogen products for use on cereal ground was down about 5 percent and compound products down a little more. On average, fertiliser prices on cereal crops declined by about 7 percent in 2014 relative to 2013. It is important to note however, that these prices are still well below the prices recorded in the peak period of 2008 and 2009.

Figure 5: Irish Farm Gate Price Index of Fertilisers 2006 to 2014



Source: Central Statistics Office data for 2000 to 2014.

The pattern of fertiliser purchases on cereal farms is somewhat different from that on grassland farms, with applications being spread throughout the sowing and growing season from September of one year to May or June of the following year, depending on whether the crop is spring or winter sown. On this basis, it is sometimes the case that the fertiliser prices for cereal crops for a calendar year can be somewhat different to that experienced for grassland systems. However, during 2014 the story for fertiliser price differentials has been relatively benign with prices not that different on cereal and grassland farms.

On the usage side, DAFM figures indicate that fertiliser purchases in the 2014 fertiliser year (October 2013/September 2014) were down by about 6 percent for all three elements relative to 2013. Given that the DAFM figure on fertiliser purchases refers to all fertiliser purchases for grassland and cropland it was necessary to consult reports from farm advisors and industry sources to evaluate the change in fertiliser usage levels for crop farms. Reports from a number of sources indicate that fertiliser usage per hectare in 2014 was similar to the levels recorded in 2013. Furthermore, any shift from spring to winter crops in the 2014 harvest year can be assumed to have been counter balanced (in fertiliser requirement terms) by a slight reduction in overall area devoted to cereals in 2014. Hence, in per hectare terms (per crop) it is assumed that 2014 usage was similar to that applied in 2013. With no change in fertiliser usage on crop farms (per hectare) in 2014 and a slight decrease in fertiliser prices experienced, overall expenditure per hectare on fertiliser in 2014 is estimated to have declined by about 7 to 8 percent on 2013 levels.

3.1.2 Seed – Usage and Price 2014

Purchased seed on crop farms comprises between 12 and 23 percent of direct costs for cereal and oilseed production. In terms of the composition of total costs, seed represented 5 percent of total costs in 2013. In 2014, cereal farmers experienced a substantial decrease in seed costs relative to the previous year due to the significant downward movement in the cereal prices. In autumn 2013 when seed supplies were purchased for the 2014 harvested winter crops, blue label seed cost decreased by approximately 20 percent, to €540 per tonne. This cost decrease was also evident in 2014 for spring sown crops relative to the 2013 sown spring crops.

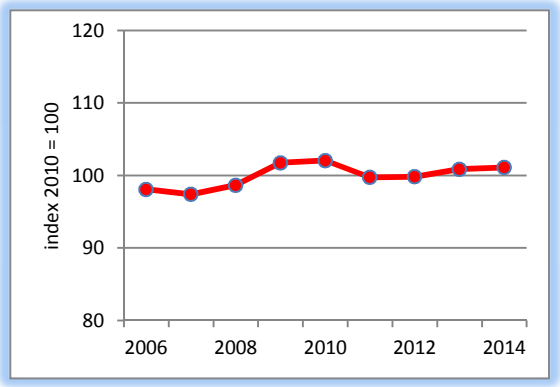
3.1.3 Crop protection – Usage and Price 2014

The expenditure on crop protection by specialist tillage farms in 2013 accounted for 18 percent of direct costs and 9 percent of total costs. However, the contribution of crop protection to the composition of costs can vary significantly depending on the crop; the percentage spend on crop protection for winter crops is higher than that for spring crops. For example for the winter wheat crop in 2013, crop protection costs accounted for

32 percent of direct costs, compared to 22 percent for spring barley.

Compared to other significant costs on tillage farms, the increase in the costs of crop protection has been limited over the recent past. Figure 6 shows that the increase in the costs of crop protection products from 2005 to 2014 was under 5 percent and that between 2013 and 2014 costs are estimated to have increased by about 1 percent. This rate of increase is similar to historic price changes. Volume changes between 2013 and 2014 are estimated to have been negligible.

Figure 6: Price Index of Plant Protection products in Ireland 2006 - 2014



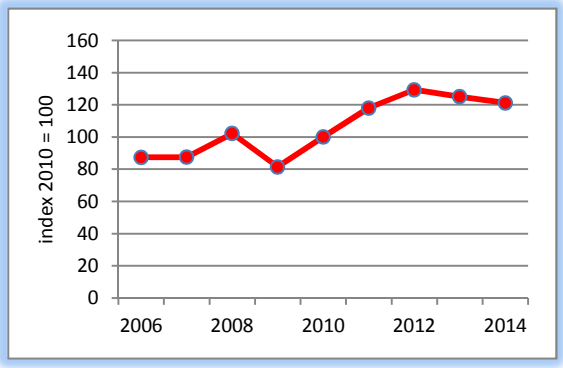
Source: Central Statistics Office and Author's own estimates

3.1.4 Energy and Fuel – Usage and Price 2014

Energy and fuel are important inputs in crop production. Given that a number of direct costs and overhead costs are directly influenced by energy and fuel prices the trend in energy prices is of significant importance for the average tillage farmer. In this analysis it is assumed that hired machinery and transport costs, which are a component of direct costs, and machinery operating expenses which are a component of overhead costs, are directly influenced by energy inflation. These cost items represented approximately 22 percent of total costs on tillage farms in 2013.

Based on the CSO estimates presented in Figure 7, the farm level price of fuel has increased by over 22 percent between 2010 and 2013. Between 2013 and 2014 as a result of a slight decrease in Brent crude oil prices, and some movement in US dollar to Euro exchange rates, the overall story for fuel prices paid by Irish tillage farmers in 2014is a slight reduction relative to 2013.

Figure 7: Price Index of Fuel products in Ireland 2006 - 2014



Source: Central Statistics Office data for 2000 to 2013. Author's estimates for 2014.

A 3 percent downward adjustment in fuel costs is estimated for 2014, which is the second year in a row that fuel prices have declined. This estimate is based on a comparison of the agricultural motor fuel index from the CSO for 2013 and the first nine months of 2014. For winter and spring sown crops the decrease in energy prices is estimated at around 3 percent. Demand for these input items tends to be relatively inelastic with respect to price and therefore it is assumed that usage in 2014 will be on a par with the 2013 level. Overall expenditure on fuel related item, is likely to be 3 percent lower in 2014 relative to 2013.

3.1.5 All other direct and overhead costs – Usage and Price 2014

Based on CSO estimates for the first nine months of 2014 compared to the same time period in 2013 it is assumed that labour costs and 'other direct costs' within agriculture have increased only very slightly, by about 1 or 2 percent.

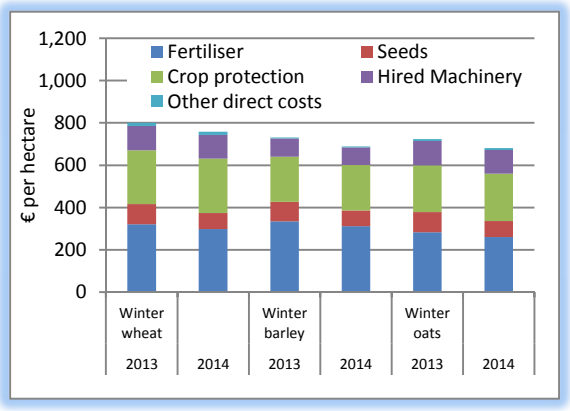
The average cost of land rental in 2013 on specialist tillage farms was just under 6 percent of total costs. Despite the fact that farm gate cereal prices decreased significantly in 2013 there was much anecdotal evidence that the price of land rent increased in 2014 relative to 2013. It is estimated that land rental prices increased by approximately 5 percent in 2014 relative to 2013. This estimate is based on the established relationship between historic NFS data on land rental prices (conacre prices) and cereal prices. While the convention is to assume that land rental prices react strongly to changes in cereal prices the data from the NFS indicates that cereal price inflation is not translated in its entirety into land rental charges. Hence, despite a significant

decrease in cereal prices in 2013 it is assumed that the average land rental agreement contract prices increased by about 5 percent in 2014. Much of this inflation in rental prices in 2014 can be attributed to CAP policy uncertainties and demand for additional land from the dairy sector in particular.

3.1.6 Estimate of Total Input expenditure for 2014

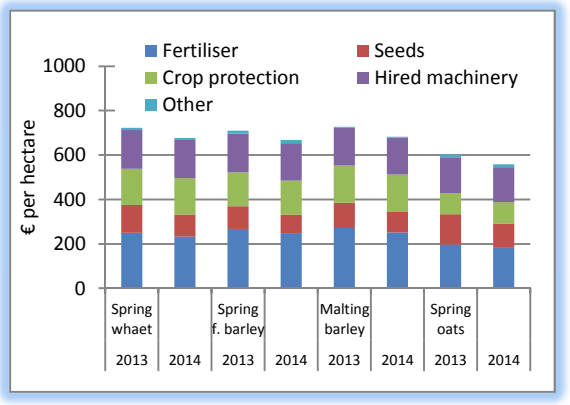
Total expenditure on all input items is estimated to have decreased in 2014 relative to 2013. The most significant decrease in expenditure occurred with seed prices, which are estimated to have decreased by about 20 percent between 2013 and 2014. On average, the decrease in total direct costs was approximately 5 percent in 2014 relative to the 2013 level.

Figure 8A: Direct Costs on Cereal Production in Ireland 2013 and Estimates for 2014 (Winter Crops)



Source: Teagasc, National Farm Survey Data and Author's estimates for 2014

Figure 8B: Direct Costs on Cereal Production in Ireland 2013 and Estimates for 2014 (Spring Crops)



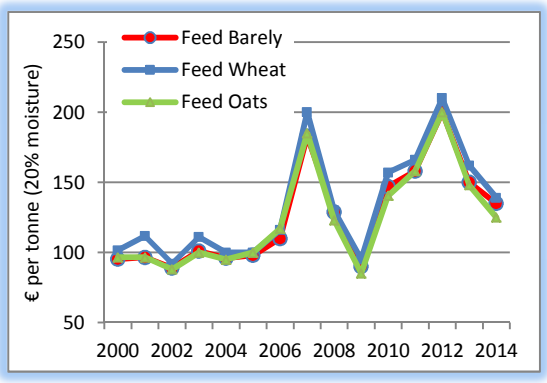
Source: Teagasc, National Farm Survey Data and Author's estimates for 2014

3.2 Estimated Output Values 2014

3.2.1 Price, yield and moisture levels in 2014

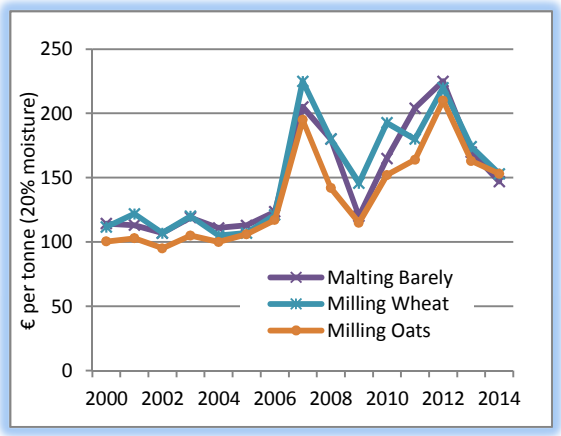
Unprecedented volatility has been witnessed in cereal prices in Ireland since 2006, with prices reaching a historical high in nominal terms in 2012. In 2013 and again in 2014, year on year farm gate cereal prices have decreased considerably. Figures 9A and 9B below show that farm gate feed wheat, barley and oat prices at 20 percent moisture (paid at harvest time) were down about 10 percent in 2014 relative to 2013.

Figure 9A: Farm Gate Cereal Prices (major crops), 2000-2014



Source: Teagasc, National Farm Survey Data & Author's est. for 2014

Figure 9B: Farm Gate Irish Cereal Prices (minor crops), 2000-2014



Source: Teagasc, National Farm Survey Data and Author's estimates for 2014

While the majority of cereals in Ireland are still sold off farm at harvest time to a grain merchant on a green moisture basis, the ability of farmers to forward sell grain has introduced an additional element to the calculation of the average price received by farmers. A special survey conducted by the Teagasc NFS in 2011 examined the proportion

of the 2011 cereal harvest which was forward sold by farmers. This research indicated that approximately 25 percent of total cereal production in 2011 was forward sold by farmers. However, the experience of the 2012 harvest, where harvest prices were well in excess of forward contract prices in many cases, had a negative effect on the numbers of farmers willing to engage in forward contracts in 2013 and 2014. Hence, it is assumed that in 2014 less than 10 percent of total cereals were forward sold. Market data shows that, on average, those farmers that availed of the hedging opportunity offered by buyng a futures contract in 2014 received a higher market price than those that waited until harvest time to agree a price. However, as noted earlier, it is estimated that the number of farmers engaged in forward contracting in 2014 was much less than in previous years..

Given that the final farm gate cereal price is based on moisture differences above and below 20 percent, it is also important to consider weather conditions at harvest in 2014. Table 1 (below) shows that the favourable conditions at harvest in 2014 resulted in moisture contents for all cereal crops that were below the average levels recorded in recent years, but with slight increases for some crops relative to 2013 moisture levels.

Table 1: Average Yields and Moisture Levels, 2013 and 2014 Harvest

	Yield (tonne per ha.)		Moisture (%)	
	2013	2014	2013	2014
Winter Wheat	9.3	10.2	17.8	18.5
Winter Barley	9.5	9.3	17.6	16.9
Winter Oats	8.1	8.6	17.4	17.2
Spring Wheat	8.0	7.9	17.9	19.0
Spring Barley	7.1	7.5	17.5	17.2
Spring Oats	7.0	7.1	17.6	18.2

Source: CSO 2013 & Forthcoming Teagasc Harvest Report (2014)

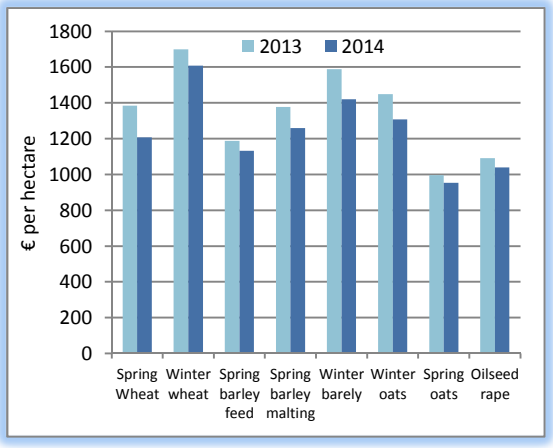
Table 1 shows the average green yields obtained in 2013 and 2014. In general for the 2014 harvested crops weather conditions during the growing season were very favourable with dry sunny weather in the summer months having a positive impact on grain fill. Hence, for most of the major crops average crop yields in 2014 were described as above 'average', with the yields of the main cereal crops all above their 5-year trend average. However, readers should note that these yields are green yields and are not adjusted for moisture content.

The last variable which must be assessed in calculating cereal output value per hectare is the value of straw. Following from the favourable growing conditions during the growing season, yield of straw in 2014 was reported to be very good, but the prices received for straw sold were lower than those achieved in 2013. Taking yield and price into account, it is estimated that straw returns in 2014 were on a par with 2013 returns.

3.2.2 Estimate of Total Output Value for 2014

Given the large number of variables that need to be considered in estimating output value, as outlined above, the estimated changes in crop output value between 2013 and 2014 are very crop specific. However, in overall terms, the general trend has been a decline in output value in 2014 relative to 2013. This decline arises because the fall in cereal prices has in 2014 not been offset by increased yields. Output value in 2014 is estimated to have declined by between 4 and 13 per cent depending on the crop examined.

Figure 10: Gross Output per hectare 2013 & Estimated Gross Output per Hectare 2014



Source: Teagasc, National Farm Survey Data and Author's estimates for 2014

3.2.3 Estimate of Total Production 2014

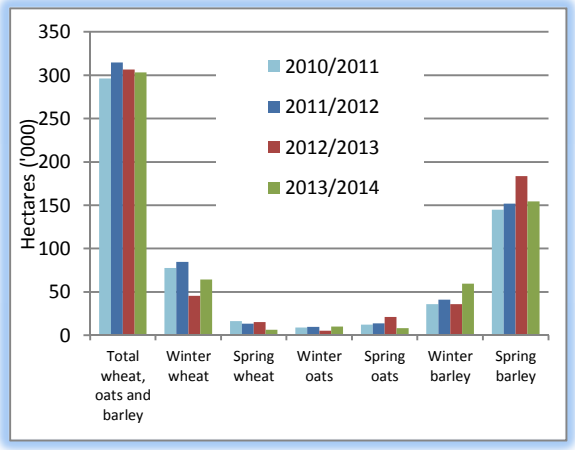
The figures presented in section 3.2.2 provide estimates of output value per hectare. However, these estimates do not take into consideration changes in area devoted to cereal crops in 2014. Figure 11 shows the area estimates for 2014 based

on CSO June Crops and Livestock Survey (CSO, 2014).

Figure 11 shows that the total area devoted to cereal production decreased by about 1 percent in the 2013/14 crop year compared to the 2012/13 crop year. There was also a large switch between winter and spring sown crops in favour of Winter crops, much of which was weather related.

Table 2 combines actual total cereal production for 2013 as reported by the CSO with estimated total cereal production for 2014. The estimated 2014 production of wheat, barley and oats is based on 2014 yield estimates from Teagasc advisors and CSO statistics for the 2014 area planted. Overall cereal production is estimated to be up by approximately 180,000 tonnes or 8 percent on 2013 levels.

Figure 11: Change in Irish Crop Area from 2011/12 to 2013/14 crop year in Ireland



Source: CSO and Teagasc, Harvest Report (forthcoming, 2014)

Table 2: Historical 2013 & Estimated 2014 Production

	2013	2014	%Change
	000 tonnes		
Wheat	545	711	+30%
Barley	1,663	1,711	+3%
Oats	178	147	-17%
Total	2,387	2,569	+8%

Source: CSO and Teagasc Harvest Report 2014 (forthcoming)

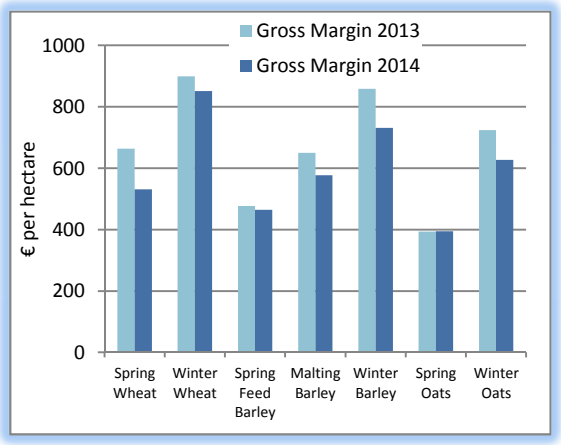
3.2.4 International Production Estimates for 2014

While production estimates for Irish cereals are important from a national supply, demand and balance sheet perspective, it is primarily developments in the international supply and use balance for cereals that affect price developments in Ireland. For this reason a review of the international ending stocks for cereals is more informative when near term price developments are concerned. The latest edition of *Strategie Grains* (November, 2014) estimates that the total production of cereals within the EU for the marketing year 2014/15 was 323.2 million tonnes, with a forecast for an increase in carry out stocks over the previous marketing year. The IGC and *Strategie Grains* estimates (Strategie Grains, December 2014) show that global wheat, barley and maize production and carry out stocks for 2014/15 marketing year to be up on the previous year's levels. However, stock-to-use ratios for most cereals still remain relatively tight in historic terms.

3.3 Review of Tillage Enterprise Margins in 2014

The review of cereal output value showed that the average value of output received by farmers was lower in 2014 than in 2013. The review of input costs concluded that total direct costs were approximately 5 percent lower in 2014 than in 2013. Figure 12 presents the effect of these estimates on the estimated gross margin for each of the main Irish cereal crops.

Figure 12: Actual Gross Margin in 2013 & Estimated Gross Margin for 2014 for each of the Main Cereal Crops



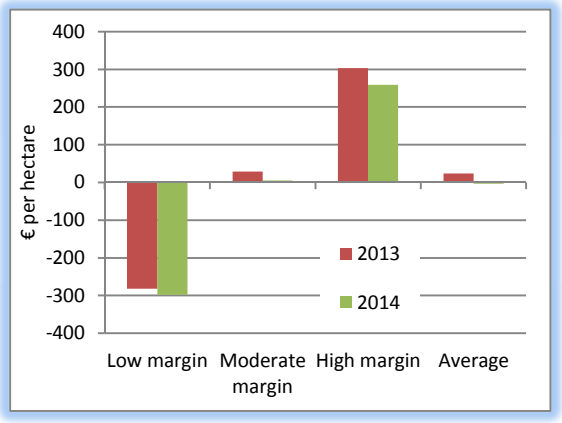
Source: Teagasc, National Farm Survey Data and Author's estimates for 2014

Figure 12 shows a clear story in terms of the change in gross margin in 2014 relative to 2013. The relative shift in output price between 2013 and 2014 has had the biggest effect on margins, with the significant decrease in cereal prices resulting in downward pressure on gross margins for all crops examined. In terms of the major crops, the gross margin for winter wheat is estimated to be up

down by about €50 per hectare, while the margins for the other main crops, winter barley and spring barley, are estimated to be down by about €125 and €10 per hectare respectively. It should be noted that the average gross margin figures presented above are market based gross margins and therefore exclude all decoupled payments.

Similar to the format used to present margins for 2013 earlier in the paper, the estimated net margins for 2014 are presented for the cereal enterprise on specialist tillage farms, with the NFS sample disaggregated into one-third groupings based on net margins obtained.

Figure 13: Actual Net Margin 2013 and Estimated Net Margin for 2014 for the Cereal Enterprise on Specialist Tillage Farms



Source: Teagasc, National Farm Survey Data and Author's estimates for 2014

Figure 13 shows the cereal enterprise net margin estimates for 2014 relative to 2013,. for the average specialist tillage farm, in addition to the net margins for the low, moderate and high margin groupings of tillage farms.

The estimate of net margins in 2014 is lower than that obtained in 2013. For the best performing one-third of tillage farmers the estimated net margin for 2014 was €259 per hectare, and for the average farmer the net margin was slightly negative at -€3 per hectare. It is important to remember that these figures exclude the SFP.

4. Outlook for 2015

In this section forecasts are provided for the expenditure for various input items in 2015, the likely farm gate cereal price that will prevail at harvest 2015 and the likely net margin of tillage farmers in 2015.

4.1 The Outlook for Input Expenditure

4.1.1 Fertiliser – usage and price 2015

A number of factors need to be considered when price and volume changes for fertiliser on crop farms are forecast for 2015. CSO official monthly price indices for fertilisers for 2014 are only available up until the end of September; these indicate a relatively benign story for fertiliser prices recently. However, market reports currently indicate that fertiliser prices for winter and spring sown crops will be up on 2013/2014 levels. P&K compound fertilisers are forecast to trade around 4-7 percent higher in early 2015 compared to the same period in 2014, and CAN is expected to trade at about 7 percent higher than 2014. This forecasted increase in fertiliser prices is associated with supply side uncertainties in addition to expected changes in the Euro/Dollar exchange rate in 2014 (HGCA, November 2014).

Fertiliser usage in 2015 is expected to be on a par with 2014 levels, given that for agronomic reasons the scope for reduction in use in response to higher fertiliser prices is limited for cereal farmers. Overall, it can be expected that fertiliser expenditure will increase by about 5 percent in 2015 on cereal farms. This expenditure increase is somewhat different than the expenditure change expected on livestock farms given the different expected price and volume changes on livestock farms.

4.1.2 Seed – usage and price 2015

As mentioned previously in the paper, cereal farmers experienced a decrease in seed costs in 2014 relative to the previous year due to the significant downward movement in the cereal markets in 2013. Given that cereal prices decreased again in 2014 there has been a consequent decrease in seed prices for 2015. At present blue label seed prices for crops being sown for the 2015 harvest are down about 8 percent on 2014 levels.

4.1.3 Crop protection – usage and price 2015

The increase in costs in 2015 relative to 2014 is forecast to be of a similar magnitude to the changes seen in each of the last three or four years, which was minimal at just under 1 percent. Volume changes in 2015 are forecast to be negligible.

4.1.4 Energy and Fuel – usage and price 2015

Fuel costs in 2015 will depend mainly on the evolution of crude oil prices. Current crude oil futures prices suggest that prices will decrease from the 2014 average during the course of 2015 by about 6 percent. Assuming that usage is unchanged, expenditure on fuel related charges are expected to be down about 6 percent in 2015. Contractor charges are expected to remain similar to those experienced in 2014.

4.1.5 All other direct overhead costs 2015

All other direct and overhead costs are expected to increase by a very small amount, in line with recent price changes of such items, at about zero to 2 percent depending on the cost item.

In terms of land rental prices for 2015, there appears again to be some upward pressure on prices for 2015 compared to 2014. This increase of land rental prices can be attributed to (i) the use of 2015 as a base year for future decoupled direct payment entitlements and (ii) competitive pressure from dairy farmers (in the context of milk quota abolition in April 2015)for land that becomes available for rent. Hence, for 2015 it is assumed that land rental prices will increase by 5 percent.

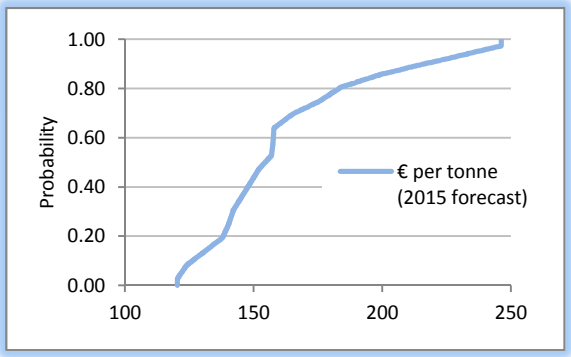
4.2 The Outlook for Markets 2015

The cereals market has experienced significant volatility in recent years. Planting decisions by farmers will be based on expected farm gate cereal prices (and margins) in 2015. 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 2015 harvest price an econometric analysis was conducted to predict the probability that the 2015 farm gate price will be higher or lower than the 2014 price. This analysis was based on the November/December 2014 LIFEE and MATIFF futures prices for November 2015 contracts. The regression analysis examined the historic relationship between (i) predicted futures price for the following harvest, made from the previous November/December when planting decisions were been made, and (ii) the actual farm gate price paid at harvest one year hence. This regression analysis enables a forecast to be made of the 2015 Irish farm gate cereal price for wheat taking into consideration the differences between the historic predicted values and the actual outcomes.

Figure 14 outlines the probability of achieving different harvest prices in September 2015. Based on the econometric model developed it shows significant volatility around predicted September 2015 harvest prices. This predicted range is based on current futures trading prices (November 2014), and the spread around the mean value is based on how right or wrong futures markets have been in recent times in predicting prices one season ahead.

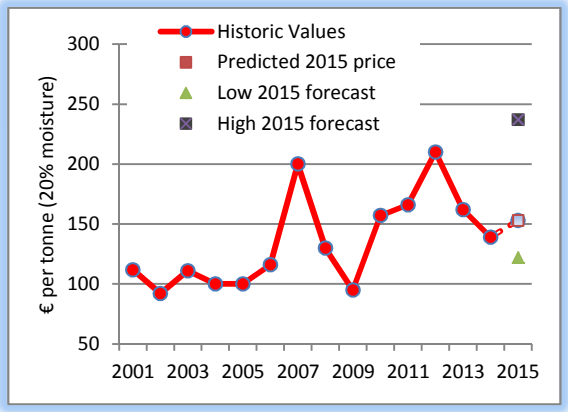
Figure 14: Probability Distribution of the predicted 2015 Wheat Harvest Price



Source: Author's own estimates.

Based on the probabilities of achieving different harvest prices, the average predicted value from the model for the farm gate wheat price is approximately €153 per tonne at 20 percent moisture. However, there is significant variation surrounding this figure and based on a 90 percent confidence interval, it is forecast that the figure could be as low as €122 per tonne or as high as €237 per tonne (Figure 15).

Figure 15: Historic, Estimated & Forecast Farm Gate Feed Wheat Price (2001 – 2015)



Source: Author's own estimates, 2015 forecast, at 90 percent confidence interval

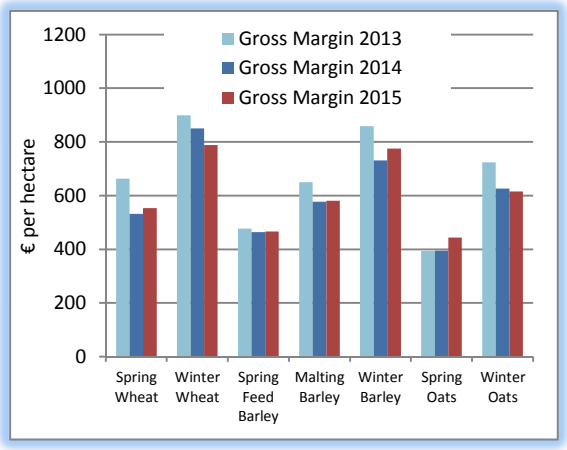
In terms of a rationale for the forecast increase in cereal prices in 2015, various market reports have been be examined. The latest edition of *Strategie Grains* (November 2014) forecasts an increase in EU uncultivated arable area, indicative of a a reduction in area planted to cereals. The uncultivated area is estimated at 5.2 million hectares, which is an increase of 200,000 hectares from the previous year (seen Appendix A3 for further details on forecasted changes in arable crop areas in the EU28 for 2015/16). This estimated decrease in production area could, *ceteris Paribus,* be assumed to have a positive impact on price.

Based on the futures market forecast and the adjustments made in the regression analysis for predicted versus actual outcomes, our forecast is that that farm gate cereal prices will increase by a about 10 percent in 2015.

4.3 The Outlook for Tillage Enterprise Margin in 2015

Decreases in seed, and fuel prices, coupled with increases in fertiliser, crop protection, land rent and other inputs, suggests that cereal production costs are likely to be slightly higher in 2015 relative to 2014. However, output value on average is forecast to be higher in 2015 for most crops except Winter wheat, due to yield and output price changes. Figure 16 presents the actual gross margin for each of the main cereal crops in 2013, and the respective estimates and forecasts for 2014 and 2015.

Figure 16: Actual 2013, Estimate 2014 and Forecast 2015 for Cereal Crop Gross Margins

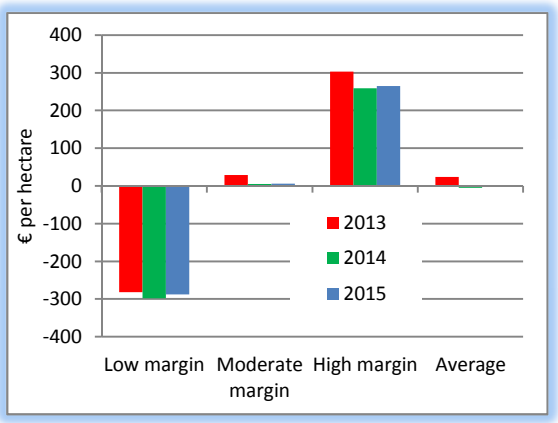


Source: Teagasc, National Farm Survey Data and Author's estimates for 2013 & forecast for 2014

The net effect of input price, output price and volume movements is forecast to have only a slight effect on gross margins for 2015, with the majority of crops experiencing a slight increase in margin, with winter wheat and winter oats the only crops forecast to experience a decline in gross margin. For example, gross margins for winter wheat are forecast to decrease by €60 per hectare, while gross margins for spring barley and winter barely are forecast to increase by approximately €3 and €43 per hectare respectively. The overall story for 2015 is one of very little movement in margin terms over those experienced in 2014. It should be noted that the average gross margin figures presented are market based gross margins.

Similar to the format used to present margins in 2013 and 2014 earlier in the paper, the forecasted net margins for 2015, are presented for the cereal enterprise on specialist tillage farms, as well as the population of such farms disaggregated into one-third groupings based on margins obtained. Figure 17 shows that the forecast net margins for the cereal enterprise in 2015 are more or less unchanged from those estimated for 2014. The reason for the only minor movement in margins is because the positive impact of our forecast upward movement in prices is offset by our assumption of a reversion to trend yields in 2015.

Figure 17: Net Margin Actual 2013, Estimate 2014 and Forecast 2015 for the Cereal Enterprise on Specialist Tillage Farms



Source: Teagasc, National Farm Survey Data and Author's estimates for 2014 & forecast for 2015

5. Concluding Comments

The 2013/2014 production year saw slight downward pressure on cereal net margins. Despite the fact that yields for the main crops were above average, a reduction in output prices and only a

slight moderation in costs, meant that margins were slightly down overall in 2014. Spring barley gross margins were down by about €10 per hectare, while winter wheat margins were down by about €50 per hectare and winter barley down by €125 per hectare. The highest recorded gross margin of all tillage crops in 2014 was winter wheat.

The forecast for 2015 net margins on tillage farms is for not much change over 2014. With the forecast 10 percent increase in cereal prices in 2015 offset by our assumption of a return to trend yields and a slight increase in direct costs. The overall picture for crops is that in general not much change will occur in either gross or net margins in 2015.

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Strategie Grains (2014) November 2014

Teagasc Harvest Report (December 2014)

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Table A1: Production Costs, Output and Gross Margin for All Cereal Crops in 2013

	Spring Wheat	Winter Wheat	Spring Feed Barley	Malting Barley	Winter Barley	Spring Oats	Winter Oats	Oilseed rape
					€ per hectare			
Gross output	1,385	1,699	1,187	1,377	1,589	997	1,448	1,092
Fertiliser	251	321	267	271	335	196	283	301
Seeds	124	95	102	114	92	137	95	96
Crop protection	163	255	153	168	213	96	222	129
Hired Machinery	175	115	174	170	86	161	115	126
Other costs	9	14	14	4	4	13	10	26
Total direct costs	722	800	711	727	731	603	724	679
Gross Margin	663	899	476	650	858	394	724	413

Source: 2013 National Farm Survey Data

Table A2: Variation in output and margin 2013: top and bottom performing cereal farms

	Spring Barley			Winter Wheat		
	Bottom	***Top***	***% Diff.***	***Bottom***	***Top***	***% Diff.***
Yield (tonnes per hectare)	6.8	7.3	7%	7.9	9.7	23%
Price per tonne	162	166	2%	186	175	-6%
Gross output (€ per hectare)	**1,173**	**1,328**	**13%**	**1,584**	**1,834**	**16%**
Fert., seed, spray (€ per hectare)	539	484	-10%	657	679	3%
Other direct costs (€ per hectare)	203	122	-40%	181	73	-60%
Gross Margin (€ per hectare)	**431**	**721**	**67%**	**746**	**1,075**	**44%**
Total Fixed Costs (€ per hectare)	620	443	-29%	676	673	-
Total Costs (€ per hectare)	1363	1050	-23%	1513	1432	-5%
Net Margin (€ per hectare)	**-189**	**278**	**247%**	**71**	**402**	**466%**

Source: 2013 National Farm Survey Data

Table A3: Changes in arable crop areas in the EU28

Areas	Commercial crop years			
	2012/13	**2013/14**	**2014/15**	**2015/16**
	000 ha			
Total Cereals	57,160	57,320	57,800	57,450
Total Oilseeds (including crops grown on set-aside)	11,400	12,140	11,970	11,800
Total Protein Crops	1,250	1,180	1,230	1,250
Silage	5,890	6,080	6,130	6,140
Set-aside & Fallow Land (non food crops excluded)	6,040	5,233	5,019	5,227
Sugar beet	1,670	1,590	1,620	1,630
Total area cultivated and setaside	**83,140**	**83,543**	**83,549**	**83,497**

Source: Strategie Grains (November 2014)

Review of Pig Sector in 2014 and Outlook for 2015

Michael McKeon

Pig Development Department, Teagasc

1. Introduction

In 2014 the Irish pig industry recovered to a profitable position after a number of years of low or negative profitability. The escalation in feed prices in the 2010-2013 period came to an end in 2014 due to another bumper global maize and wheat harvest which replenished world stocks.

The market price for pigmeat continued from 2013 into early 2014 at a high level, despite the Russian market been closed to European pigmeat exports from January 2014.

The high pig price and the decrease in cereal prices during 2014 resulted in a healthy 'Margin over Feed' especially in the third quarter. The fourth quarter resulted in the pig price falling which lowered margins towards year end.

2. Irish Pig Production Costs 2014

The cost of producing pigmeat in Ireland can be broken into feed cost and non-feed costs. Feed currently constitutes 75 percent of the total cost of producing a pig with the non-feed inputs contributing the remaining 25 percent. The largest volatility over the last three years has related to feed costs.

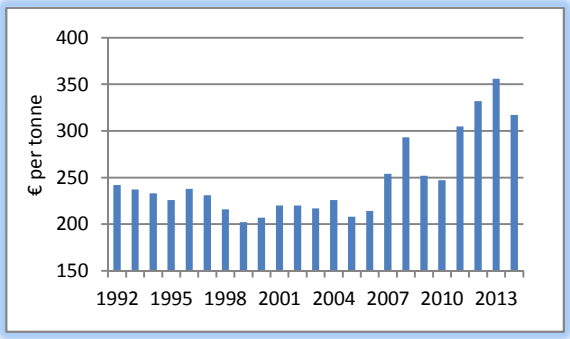
2.1 Irish Pig Feed Costs 2014

The price rise during 2013 for the main pig feed ingredients was followed by a stabilisation in early 2014. The price decreased in the last two quarters of 2014 resulting in an annualised drop of 11 percent in composite feed cost per tonne when compared to 2013.

In spite of this price drop, the 2014 annualised composite pig feed price remained one of the highest in over twenty years. Annual Irish composite pig feed prices are shown in Figure 1.

The composite compound feed price peaked in June 2014 and then decreased as the year continued. Monthly pig feed prices for 2014 are shown in Table 1.

Figure 1: Irish composite pig feed price 1992 -2014



Source: Teagasc Pig Department

The annualised feed cost per kg dead weight of 118 cent in 2014 is significantly lower than in 2013 (132 cent) and 2012 (123 cent), but higher than 2011 (112 cent). The elevated feed cost during early 2014 caused continued cashflow difficulties for producers, but these difficulties eased as the year progressed.

Table 1: Purchased Irish Compound Feed Prices in 2014

Month	Composite Feed Price € per Tonne	Feed Cost cent per kg dwt
January	322	120
February	322	120
March	322	120
April	323	120
May	324	121
June	326	122
July	325	121
August	316	118
September	310	116
October	306	114
November	304	113
December	304	113
Average	317	118

Source: Teagasc Pig Department
December 2014 figure is an estimate

2.2 Non-feed costs in Irish Pig Production in 2013

Non-feed costs can be broken into *Common Costs* and *Herd Specific Costs*. The common costs apply on all units and represent the largest component of non-feed costs. The data quoted for the Irish industry is collected from herds using the Teagasc ePM herd recording system which records, analyses and benchmarks herd productivity and financial performance. The costs quoted are based on the national 2013 data which is the most recent analysis of annualised costs available. Common costs are itemised in Table 2.

Table 2: Common Costs in Pigsys Recorded Herds

Cost Item	2013	2009-2013
	cent per kg dwt	
Healthcare	6.5	5.7
Heat, Power Light	4.4	4.2
Transport	1.5	1.2
AI	1.6	1.6
Manure	1.6	1.8
Labour/Management	11.6	12.9
Repairs	2.4	1.8
Phone/Office	0.6	0.5
Environment	0.7	0.8
Insurance	0.8	0.6
Stock Depreciation	1.3	0.5
Miscellaneous	1.6	1.6
Total	34.8	35.9

Source: Teagasc Pigsys Report 2014

The common costs in 2013 were one cent lower when compared to the previous five year average, but five cent higher than 2012 (129.8). The single largest increase in 2013 costs when compared to 2012 was the rise in repairs, which increased from 0.3 cent in 2012.

2.3 Herd Specific Costs in Irish Pig Production in 2013

These costs include interest payments and building depreciation and vary greatly from unit to unit depending on the age of the unit and the level of continuous capital investment undertaken in the business. Herd specific costs are itemised in Table 3.

The reduction in interest payments is related to the number of pig units availing of a 'repayment holiday'. The increase in building depreciation is due to the requirement to build new sow welfare housing in 2012-13.

Table 3: Herd Specific Costs in ePM recorded herds

Cost Item	2013	2009-2013
	cent per kg dwt	
Interest	1.9	2.1
Building Depreciation	4.1	3.6
Total	6.0	5.7

Source: Teagasc Pigsys Report 2014

2.4 Total Cost of Irish Pig Production in 2014

The estimated cost of production in 2014 (based on 2013 non-feed costs and 2014 feed costs) was 159 cent per kilogram dead-weight for pigs delivered to the slaughter plant. The level of this cost varied from a high of 161 cent/dwt in January 2014 to a low of 154 cent/dwt in November and December 2014. This variation was due to the fluctuating feed cost.

3. Irish Pig Prices in 2014

The estimated average pig price in 2014 was 167 cent per kg, which was significantly above the previous five year average (2010-2014) of 160 cent. Monthly Irish pig prices are shown in Table 4.

Table 4: Monthly Irish Pig Price in 2014

Month	Pig Price
	cent per kg dwt
January	170
February	168
March	162
April	165
May	169
June	178
July	181
August	176
September	169
October	162
November	155
December*	150
Average	**167**

Source: Teagasc Pig Department
*December 2014 figure is an estimate

The Irish pig price fell in comparison with 2013 by 5 percent, but was still relatively high. The maintenance of a relatively high price was facilitated by a continuing strong Irish export market outside the EU (excluding Russia),

combined with a reduced EU pigmeat supply. The marginally reduced EU pigmeat supply resulted from higher costs of production in 2013 and the introduction of loose sow housing. The reduction in the supply of US pigmeat, due to the outbreak of PEDv, also helped to strengthen the global price as it increased their product cost.

The EU pig price fell significantly more than the Irish price in 2014 as a result of their increased exposure to the effects of the closure of the Russian export market, as shown in Table 5.

Table 5: European Pig Prices 2013 and 2014

	2013	2014	
	Jan – Nov	Jan – Nov	Change
Country	Euro per kg		%
NE Monfoort	1.68	1.53	-8.7
DK 61%	1.53	1.41	-7.8
DE ZMP 56%	1.71	1.58	-7.85
ES Llerida vif	1.39	1.31	-6.3
IT vif Modena	1.42	1.41	-1.2
FR MPB 56%	1.48	1.37	-7.8

Source: MPB

4. Profitability of Irish Pig Production in 2014

The margin over feed costs per kg deadweight in 2014 was 49 cent, the highest since 2009.

Table 6: Average Margin over Feed Costs from Compound Feed from 2007-2014

Year	Pig Price (delivered)	Feed Cost	Margin over Feed
	Cent per kg dwt		
2007	139	97	42
2008	152	112	40
2009	145	94	51
2010	140	93	47
2011	151	112	39
2012	166	123	43
2013	176	132	44
2014	167	118	49

Source: Teagasc Pig Department

When the 2014 margin over feed is compared to the average margin over feed of the last five, ten, fifteen and twenty years (see Table 7) the difficult trading conditions and low profitability of recent years becomes clear.

If an average margin of 50 cent per kg (estimated by the author as a requirement to meet all production costs including financial repayments) is added to the feed costs incurred during 2014, then the margin over feed at 49 cent was marginally short of this target. The low margin in the previous five years (44 cent) requires a higher margin over feed then 50 cent to reduce the accumulated feed credit debt that now exists in the sector.

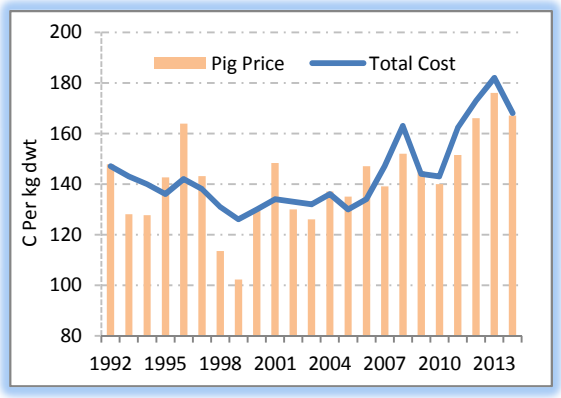
Table 7: Margin Over Feed in 2014 Compared to the 5, 10 15 and 20 yr average

	Margin Over Feed	% Diff.
	cent per kg/dwt	
2014	49	na
5 Yr average	44	+11
10 yr average	47	+4
15 Yr average	49	0
20 Yr average	49	0

Source: Teagasc Pig Development Department

Figure 2 shows the pig price received when compared to the total production cost (feed plus 50 cent) since 1992.

Figure 2: Estimate of Pig Price compared to Total Production Cost from 1992 (c/kg dwt)



Source: Teagasc Pig Development Department

5. Irish Pig and Sow numbers in 2014

The latest CSO sow survey of commercial pig production units in 2014 revealed a slight increase in sow numbers when compared to the previous survey. Irish sow numbers are shown in Table 8.

The CSO survey indicates that the Irish sow population continues to fluctuate around the 150,000 sow level.

Table 8: Sow Numbers in Commercial Pig Herds 2009-2014

Year	Sow Numbers
	000 head
2009	149
2010	161.4
2011	156.2
2012	145.7
2013	147.5
2014	151.1

Source: Central Statistics Office

The number of Irish pig disposals in 2014 is estimated to be 3.45 million pigs, which would be 1.8% higher than in 2013 and a return to 2012 slaughter numbers. This is a reflection of the increased born alive and the reduced effect of the clinical PRRS disease that occurred in 2013.

Table 9: Irish pig slaughter (Republic of Ireland only) 2011 to 2014

Year	2011	2012	2013	2014e
	million head			
Slaughter Pigs	3.40	3.50	3.40	3.45

Source: Teagasc Pig Department

The share of Irish born pigs exported to Northern Ireland in 2014 was 18 percent, a 9 percent drop when compared to 2013. This is a return to more normal levels following the upward jump in 2013.

Table 10: Slaughter and Live Export of Irish Pigs from 2006 to 2014

Year	Rep. of Ireland Licensed Export Plants	Exports to Northern Ireland	% Exports of Total
	million head		%
2006	2.619	0.478	15%
2007	2.570	0.512	17%
2008	2.511	0.457	15%
2009	2.363	0.482	17%
2010	2.601	0.558	18%
2011	2.847	0.610	18%
2012	2.907	0.612	17%
2013	2.829	0.570	20%
2014	2.940	0.519	18%

Source: DAFM & DARDNI

The trend of increased Irish slaughter pig disposals in 2014 was not reflected in many of the EU Member States, as illustrated in Table 11. Over the first 44 weeks of 2014 the combined pig slaughtering of the major European producing countries declined slightly when compared to 2013.

Table 11: European Pig Disposals 2013 and 2014

	2013*	2014*	Change
Country	Million head		%
Germany	43.07	42.68	-0.9
Spain	27.26	27.95	2.5
France	16.04	15.86	-1.1
Denmark	14.14	13.85	-2.1
Netherlands	11.78	12.15	3.2
UK	7.45	7.53	1.9

*Based on 44 wks of production
Source: MPB

6. EU Pigmeat Exports & Imports in 2014

The export of EU pigmeat products to third countries decreased in 2014, as shown in Table 12. The ban on EU pigmeat exports to the Russian market had a detrimental effect on EU exports (down 9 percent), as this has been one of the stronger exports destinations in 2012 and 2013.

Table 12: Pigmeat exports from selected countries

Country	2013*	2014*	change
	million tonnes		%
EU	2.020	1.837	-9.17
USA	1.410	1.480	+ 5.5
Canada	0.777	0.753	-3.09
Brazil	0.380	0.362	-3.15
Total	4.587	5.174	-6.97

Source: MDP * Jan-Sept

7. Outlook for the Irish Pig Market in 2015

The outlook for the pig market will be a reflection of pig feed and pig price developments as these will be the key factors affecting profitability.

7.1 Irish Pig Feed Price Outlook in 2015

Pig feed is the single largest input cost (currently 75 percent) of pig production, therefore the price trend of this input will have a substantial effect on the profitability of the sector in 2015. The feed outlook can divided into the outlook for wheat, maize and soyabeans, as these are the principal pig feed cost drivers. The estimated composite

compound feed price in December 2014 was €304 per tonne.
The bumper wheat and maize crop from the Black Sea Region and from the US in 2014 will filter into Europe during the January to June 2015 period. This is forecast to generate stable prices until mid-2015, where upon the 2015 harvest will dictate feed prices for the latter half.

Forecasts for the South American soyabean harvest are for one of the largest harvests ever (Brazil 91MMT and Argentina 56 MMT). While this should dictate a fall in soyabean prices in 2015, it would be offset by higher forecast Chinese import of 74 MMT for 2015. The current feed ingredients futures market indicates an annual increase of 3 percent over the 2014 composite price. This would increase the composite feed price from an average of €317 in 2014 to an average of €325 in 2015.

7.1.1 Irish Pig Prices in 2015

The Irish pig price was relatively strong through much of 2014 but decreased in the last quarter. The return to stability in the size of the EU sow herd and increased born alive will boost the supply of European pigs in 2015. It is estimated this increase may be in the region of 2 to 2.5 percent. This increased volume on the market could trigger an annualised drop of 8 percent in pig meat price when compared to 2014 if export volumes are not further increased. Two significant factors may give the pig price a boost, namely the re-opening of the Russian market to EU exports and the emergence of PEDv or African Swine Fever in Europe. Either of these outcomes would significantly improve the price outlook.

7.1.2 Profit Margin in 2015

If the composite feed price increases moderately in the latter half of 2015 and the pig price remains relatively buoyant, then there will be a profitable margin in 2015. This margin is critical in order to restore the industry to a sound financial base. It would allow feed debt to be reduced, enable producers to undertake much needed repairs and to investigate the feasibility of further investment in building infrastructure.

8. Conclusion

In 2014 the Irish pig industry continued to experience high feed prices, but the relatively high pig price (in comparison to recent years) enabled the sector to achieve a margin over feed of 49 cent, thereby virtually reaching the minimum required margin over feed of 50 cent. The montly composite pig feed price of €304 per tonne in December 2014 is expected to be maintained until June 2015, with the possibility of a moderate increase in the latter half of 2015.

It is expected that the market conditions in 2015 will return a lower pig price, primarily due to an increased number of pig disposals in the main pig producing EU Member States and on-going export difficulties to Russia.

The outlook for 2015 is for the industry to continue to remain moderately profitable. In the event of the Russian market re-opening or a disease outbreak on the European mainland, then the outlook will improve very significantly.