

Farm Level Adjustment in Ireland Following Decoupling^{1,2}

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Summary

This paper describes analysis that was conducted on Irish FADN data to assess the effect of the Medium Term Review of the Luxembourg Agreement on farm activity and incomes in Ireland and to project the farm-level adjustments that are likely to occur as a result of decoupling.³ The paper begins by providing a background to the decoupling of direct payments. Following this, the implementation of the MTR of the CAP in Ireland is outlined. Then the results of an economic modelling exercise conducted to assess the effect of decoupling in Ireland will be reported. Finally the results of a survey on farmers' attitudes towards decoupling will be presented.

Introduction

This paper outlines the changes contained in the Medium Term Review of the Common Agricultural Policy and describes how these changes will be implemented in Ireland. The paper also describes analysis that was conducted to assess the effect of the implementation of the MTR in Ireland. Specifically, the effect of the agreement on farm incomes in Ireland and adjustments that farmers are likely to make in response to the policy change are projected.

The farm level models described in this paper are part of a larger modelling system used for policy analysis that is operated by the FAPRI-Ireland Partnership.⁴ The FAPRI-Ireland Partnership operates a set of individual econometrically estimated commodity models, e.g. beef, dairy, sheep, pigs and cereals that are linked and solved simultaneously under different policy scenarios as well as a baseline, i.e. a no policy change scenario. These aggregate models project the potential impact over a ten-year period of a policy scenario on Irish agricultural markets and consequentially on input and output prices. The consequences of the projections of output and input prices at the farm level are examined using a number of modelling techniques, including budgetary modelling, linear programming (LP) and econometric modelling. The FAPRI-Ireland Partnership has produced analysis of policy reforms for a number of years at the aggregate level and the farm level. This paper focuses on the analysis conducted at the farm level only and for expositional purposes discusses the application of the farm level models to the analysis of decoupling.

Following the findings of the economic models, farmers' attitudes to decoupling will be reported. The results of a survey conducted on approximately 1,000 farms in Ireland are reported. Farmers' production plans post decoupling are presented and the implications for aggregate production levels, rural communities and farming in general are discussed.

Background to Decoupling

Direct payments to farmers in the EU became an integral part of the CAP following the 1992 Mac Sharry reforms. Farmers were directly compensated for income losses resulting from reduced intervention prices for the arable and beef sectors. The shift away from price support in favour of direct income support was advanced further in the Agenda 2000 Agreement. Payments however, did remain coupled to production, i.e. production of crops, livestock or milk was required in order to receive the direct payment. For farmers throughout the EU, direct payments quickly became an important source of income and especially so in Ireland.

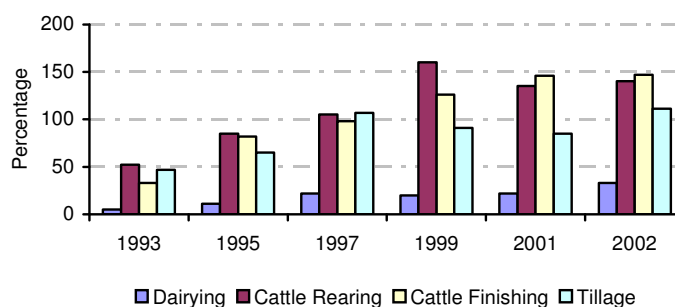
¹ This work has benefited from the input of Mr James Breen and Dr. Paul Kelly of Teagasc and Dr Tahir Rehman of the University of Reading. Any errors or omissions are the sole responsibility of the author.

² Further information on this research project is available from www.tnet.teagasc.ie/fapri

³ Farm Accountancy Data Network

⁴ The FAPRI-Ireland Partnership is a joint venture between Teagasc, the Irish Universities, other groups in Ireland, and the Food and Agriculture Policy Research Institute (FAPRI) in the USA.

Figure 1: Direct Payments as a Percentage of Family Farm Income on Irish farms



Source: Irish National Farm Survey, Teagasc (selected years)

Figure 1 shows direct payments as a percentage of total farm income for different farm systems in Ireland for selected years. By 1997, on average 100 per cent of family farm income on cattle and tillage farms was derived from direct payments, in other words the market-based revenue was on average insufficient to cover total costs. Throughout the 1990's, market prices for farm produce generally declined in line with policy while costs of production increased. Meanwhile, direct payments increased in value, hence increasing farmers' reliance on the payments as a source of income. Furthermore, farmers began to adapt their farming systems in order to maximise their receipt of direct payments and the culture of 'farming the subsidy' became prevalent. It is not surprising then that the EU Commissioner for Agriculture, Franz Fischler, declared *'that the policies have left farmers scouring the pages of the Official Journal of the European Communities instead of responding to market signals, and made small fortunes for consultancy firms offering subsidy-optimising software'*, (Fischler 1998).

The difficulties of expanding the European Union within the constraints of a limited agricultural budget, the desire to make production more market focused, and the perceived need to formulate an agricultural policy that is defensible within the current WTO process brought pressure to reform the direct payment system. It was in response to these pressures that in 2003, the European Commission proposed the decoupling of direct payments from production.

In June of 2003, the Luxembourg Agreement, was finalised. It made provision for member states to decouple all direct payments from production or to choose one of a number of partial decoupling options.¹ In Ireland, all payments will be decoupled from production from 2005. Decoupled payments will be based on the number of premium claims made in a historical reference period and will be paid in the form of a Single Farm Payment on land farmed in the reference period. To activate the full Single Farm Payment, the farmer is not required to produce any 'tangible' agricultural products so long as the farm is maintained in good agricultural condition. In addition to decoupling, dairy intervention prices reductions were also agreed. Dairy farmers will be compensated for the price reductions in the form of a decoupled payment.

Implementation of the Fischler Reforms in Ireland

Following extensive analysis and consultation, on the decoupling options contained in the policy reform, in October 2003 Ireland became the first member state to announce its choice of options for implementing the decoupled payment. The decision was simple and radical. There was to be the maximum amount of decoupling of direct payments from production and the decoupling was to be done at the earliest possible date. The single farm payments were to be made on a 'historical' basis and there would be no regionalisation. The decoupled payment for a farmer will be called an 'Entitlement'. The Entitlement will be based on the average of the relevant aid payments over a reference period of 2000, 2001 and 2002. This will be divided by the area of 'eligible land' on the farm. Eligible land is any type of agricultural land, except that used for growing permanent crops, (such as fruit and forestry) and includes land used for sugar beet even though there was no direct 'compensation' payments for producers of this crop. The payments that will be added up and divided by the number of 'eligible' hectares. The calculation will be made using the average of the payments

made over the three reference years but at the 2002 rates. The fact that payments are historical and area based means that every farmer has a different decoupled payment per hectare.

Table 1 shows that Entitlements per farm vary widely between the types of farm classified in the Irish National Farm Survey. Average payments per farm range from €9,877 on specialist sheep farms to €21,526 on specialist tillage (arable) farms.

Table 1: Estimated Entitlement by Farm System in Ireland 2005.

<i>Farm System</i>	<i>Average Entitlement (Euro)</i>
Dairy	10,852
Dairy and Other	17,310
Cattle Rearing	10,513
Cattle Other	14,346
Tillage	21,526
Sheep	9,877
Total	12,309

Some groups of farmers will be able to consolidate, or 'stack', their Entitlements. This concentrates their payment over a smaller area than that on which it was calculated. They will thus have a smaller number of Entitlements than was originally calculated but each Entitlement will be of a higher value, and hence the total receipt of payments will be the same but can be claimed with fewer hectares.

'Stacking' is available to farmers:

- who had rented land during the reference period but the lease or rental agreement has since expired;
- who have afforested some of their land since the beginning of the reference period;
- who have disposed of land to a public authority for a non-agricultural use, (eg compulsory purchase of land for road building);
- who declared land situated in Northern Ireland during the reference period;

Stacking will clearly have implications for the rental market as well as forestry plantings. For farmers who rented land during the reference period but are no longer farming that land, there is now no incentive to rent that land again unless the market return to the farming activity, that is the coupled return exceeds the asking rent. Similarly, farmers will now maximise profit by planting forestry if the return to forestry which includes government subsidies exceeds the market return to agricultural activities.

Economic Modelling of Decoupling in Ireland

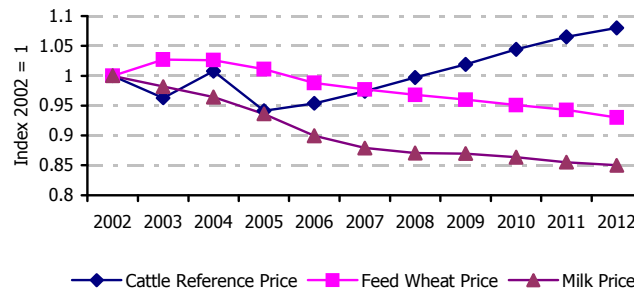
The economic analysis was conducted using Ireland's National Farm Survey (NFS) data for the year 2000.⁵ The dataset employed represented dairy, cattle and sheep farms. It includes 1,040 observations that are weighted to represent 117,243 farms, which represent about 95 per cent of the farming population in Ireland in the year 2000.

The analytical process used to estimate the farm level effects of policy changes begins by initially estimating the effect of the projected prices, costs and policy changes from the aggregate models on the profitability of the various enterprises operated on each farm in the base year. Once the effect on farm profitability has been examined in a static sense, the likely response of each farmer to the changing profitability is simulated. The micro economic adjustments that are simulated include labour allocation between agriculture and other employment, exit from dairy production, switches in farm enterprise specialisation and the decision to become a 'sofa farmer', i.e. completely destock the land and retain it only to activate the Single Farm Payment.

⁵ The year 2000 was chosen as 2001 was an atypical year due to the de-stocking of a number of farms as a consequence of the Foot and Mouth outbreak. Data for 2002 was not available at the time of publication.

Price and cost projections are taken from the FAPRI-Ireland partial equilibrium model. The FAPRI-Ireland model is comprised of a set of individual econometrically estimated commodity models, e.g. beef, dairy, sheep, pigs and cereals that are linked and solved simultaneously under different policy scenarios. The individual commodity models for Ireland are linked to the FAPRI EU and world models as operated by the University of Missouri and Iowa State University, USA. For a full description of the Irish partial equilibrium model see Binfield and Hennessy (2001). The price and cost projections emanating from the econometric model are applied to farm level data and farmers' likely response to policy change is simulated using optimisation models. Projections for the main commodity markets are presented in Figure 2.

Figure 2: Actual and Projected Agricultural Prices 2002 to 2012

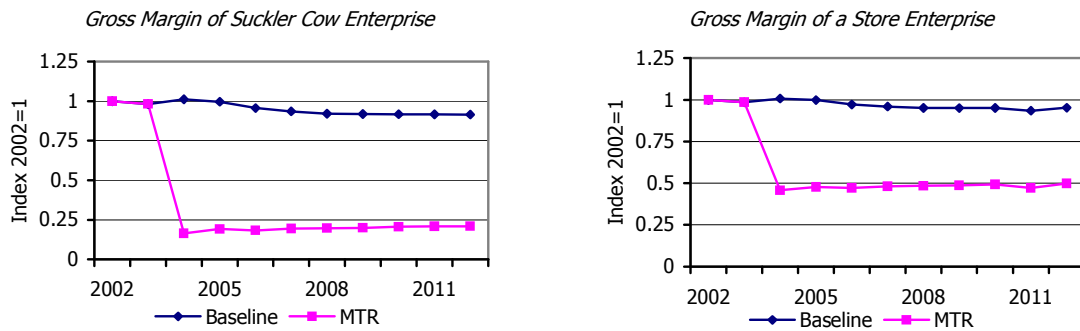


Source: FAPRI-Ireland Aggregate Model (2003).

It is expected that some farmers will reduce their animal numbers following decoupling and this will result in an initial increase in slaughter numbers and a decline in the cattle reference price in 2005. Once this initial increase in slaughterings has occurred and the beef breeding herd has contracted, it is expected that the longer term supply of beef will decline and the price will improve from 2006 onwards. In relation to the dairy sector, further reductions in intervention prices result in a decline in the milk price. By 2012, the Irish farm level milk price is projected to be almost 15 per cent lower than 2002 levels. In the cereal sector, decoupling is not expected to result in a significant change in aggregate production largely due to the fact that direct payments under the crop and oilseeds programs of the CAP were already partially decoupled under Agenda 2000. The impact of the reduction in EU cereals production that occurs as a result of decoupling is insufficient to offset the downward trend of prices that result from developments in internal EU and international demand and supply of cereals. As a result, feed wheat prices are projected to decline. By 2012, prices are projected to be 9 per cent lower than 2004 levels.

Given the projections of prices and costs, the returns to various farm enterprises can be calculated for both a baseline and decoupling scenario. A baseline scenario is one where it is assumed that the Agenda 2000 policy package continued unchanged. Figure 3 presents gross margins for two typical cattle systems, suckler cow production and a cattle store enterprise. In the baseline, the suckler cow gross margin is being driven by the calf price and suckler cow premium, the two main sources of income, and by direct and replacement costs. Baseline margins are projected to fall over the production period due to rising costs and almost static revenues. Under the MTR however, the profitability of the suckler cow enterprise is reduced significantly in 2004 when the suckler cow payment is decoupled from production. When the payment is decoupled, it will be received regardless of whether the suckler cow is stocked or not, therefore it is not included in the estimation of gross margin. Profitability of suckler cow production is also diminished due to the calf price. In the baseline, calf prices are inflated due to the transmission of future premium claims into the price of the young animal. When the payments are decoupled this transmission effect is removed and calf prices fall. As shown in Figure 3, by 2012, gross margins from suckler beef are almost 75 per cent lower in the scenario than the baseline.

Figure 3: Projected Gross Margins for Suckler Cow and Cattle Finishing Enterprise



Source: Author's Estimate

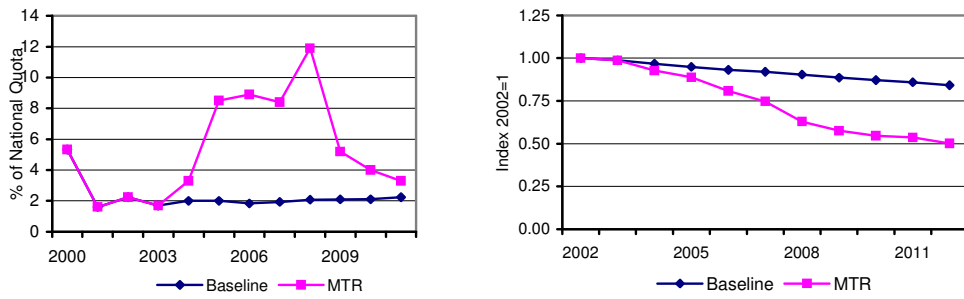
The cattle store enterprise involves the purchase of weanlings and the sale of store steers. Under the baseline, a nine month special beef premium is collected in this enterprise. Under the MTR, payments are decoupled from production in 2005 the gross margin falls almost 50 per cent below the baseline projection. Margins for store systems do not decline as much as the suckler system because the main input into the system that is the calf, has decreased in value, and furthermore a store system is less reliant on direct payment support than a suckler cow enterprise. Clearly, decoupling affects the relative profitability of enterprises.

The situation is similar with the dairy enterprise. Under Agenda 2000 milk prices were due to decline by almost 15 percent between 2002 and 2012 however compensation was to be paid and it was coupled to production meaning that it was still included in the return to milking cows. Under the MTR milk prices are projected to fall even further and the compensation is decoupled from production meaning it is not included in the returns to milking cows. The result is that the returns to milking cows are almost 30 percent lower under the MTR than it would have been under Agenda 2000. Decoupling will also seriously affect the returns to on farm labour. Much of the profit previously accruing to labour intensive farm based activities will now be received whether that labour is allocated on the farm or not. It is estimated that the return to an hour of labour on a livestock farm in Ireland could fall by up to 80 percent. Given the significant changes to the coupled profit of livestock farming and dairy production, one would think that farmers will now think twice about whether it is worth their while rearing those calves, milking those cows, buying that milk quota or spending that hour working on the farm. Given these significant changes to the economics of farming, we have tried to estimate what farmers might do post decoupling.

The full results from this modelling exercise are available from Breen and Hennessy (2003a,b). Here some example results are presented.

Figure 4 presents the percentage of national milk quota projected to change hands through the national restructuring scheme over the next ten years. Approximately 2 per cent of the national quota per is projected to enter the restructuring scheme each year in the baseline but this figure is much higher under the MTR is much higher due to the declining profitability of dairy farming. Any dairy farmer exiting production from 2005 will still receive the decoupled payment. This provides an incentive for many farmers to cease production, thereby increasing the quantity of milk quota available for restructuring from 2005 to 2008. From 2008 onwards the amount of 'restructured' milk returns to historical levels. Figure 4 also shows projections of the number of dairy farmers in the baseline versus the MTR. In the baseline, approximately 2 per cent of farmers are projected to exit production each year. The decline is greater following the Luxembourg Agreement. Farm supplier numbers are projected to be 35 percentage points lower in 2012 in the MTR relative to the the baseline. A decrease in farm numbers results in an increase in the average quota per farm for the remaining farms from 209,120 litres in 2004 to just over 318,226 litres in 2012 under the MTR compared to just over 227,304 litres in the baseline.

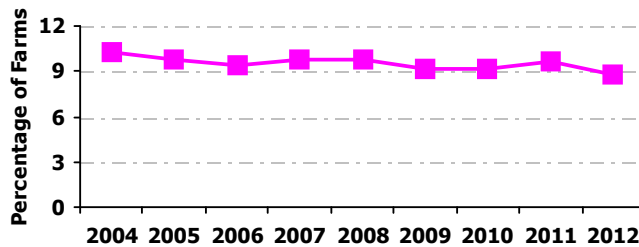
Figure 4: Projections of Restructured Quota and Changes in Supplier Numbers
Quota Entering Restructuring Scheme *Projection of Dairy Farm Numbers*



Source: FAPRI-Ireland Farm-Level Model (2003).

Figure 5 presents projections of the number of cattle farmers that choose the 'entitlement farming' route, that is to claim the decoupled payment but not to engage in any agricultural activity other than the minimum cross compliance. Farmers that cannot operate any farm enterprise at a negative market based gross margin are projected to fall into this category, as they would maximise their income by 'entitlement farming'. The vast majority of cattle farmers should be able to operate at least one enterprise at a gross profit post decoupling, given their current levels of efficiency and the projected changes in prices and costs. Only 10 per cent, will find the entitlement farming route the most profitable option.

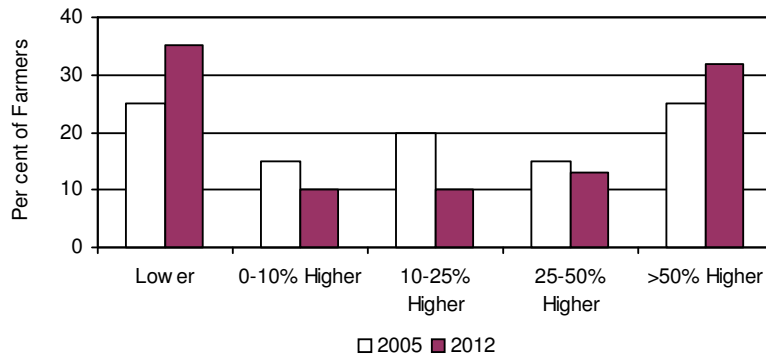
Figure 5: Projections of 'Entitlement' Cattle Farmers



Source: FAPRI-Ireland Farm-Level Model (2003).

The farm level modelling system can also show the number of farmers that benefit financially from decoupling. Figure 5 shows the income effects of decoupling on Irish cattle farms.

Figure 6: Income Effects Due to Decoupling on Full-time Cattle Farms



Source: FAPRI-Ireland Farm-Level Model (2003).

In 2005, 25 per cent of full-time cattle farmers have lower incomes under the MTR than the baseline. The majority of farmers that have lower incomes are those that are specialising in calf production and those that have not yet maximised their premium claim. While total direct payment receipts on these farms are unchanged in the baseline versus the scenario, the market margin is falling. Calf prices are projected to be 15 per cent lower in the scenario in 2005 than in the baseline. For those that have not yet maximised their premium claim, there is some opportunity to increase income in the baseline through this option but not in the scenario. By 2012 the proportion of farmers worse off due to decoupling has increased to one third. This is mainly due to modulation. The market margin for cattle production is due to rise so the income decrease can only be explained by the loss of direct payments through the modulation scheme. Nevertheless, the majority of cattle farmers benefit from decoupling even when modulation has been considered. The farmers that are 50 per cent better off or more are typically very small farms with income of €5,000 or less, or farms that were making a significant market loss. For those making significant market losses, the sofa farming route is usually the most profitable.

Farmers' Opinions

In Autumn 2003, a survey of a stratified random sample of 1,030 farms was conducted. Participating farmers were questioned on their knowledge of, and opinions on, the MTR. At least 2 out of 3 farmers surveyed considered that they were 'familiar' or 'very familiar' with the decoupling issue. Farmers surveyed were asked questions about how they were likely to adjust their farm enterprises in response to the policy reform.

Cattle farmers were asked would they increase, decrease or not change the number of livestock units on their farm. Half of all Irish cattle farmers do not intend to change their livestock numbers post decoupling. Just 10 per cent of farmers say that they intend to increase production while 33 per cent intend to decrease livestock numbers. An analysis of farm size shows that if such intentions were acted on, then total Irish beef production would decline. Furthermore, when questioned about how long they or a successor anticipated that they would continue a cattle enterprise on their farm, 47 per cent said longer than 10 years, 37 per cent said between 4 to 10 years, 13 per cent said less than 3 years, and 1 per cent said that they would discontinue immediately, with the remainder not knowing. The survey indicates that 14 per cent of cattle farmers intend to cease beef production within the first four years of the Luxembourg Agreement. Half of all beef producers said they would not change their livestock numbers while 7 out of 10 farmers said that they would not change their cattle system post decoupling. In the tillage sector, farmers were asked if they would expand, reduce or grow the same acreage of cereals post decoupling. The majority of Irish tillage farmers intend to grow the same cereal acreage post decoupling (70%). A small number of farmers (10%) said that they would expand cereal acreage, with a higher proportion of farmers (20%) saying that they would grow less cereals post decoupling.

Discussion

Results from the economic model show that the MTR will present significant impetus for change within the three sectors of Irish agriculture that were considered. Substantial changes in the coupled profitability of farming are evident. The returns to most enterprises and to farm labour in general are significantly lower under decoupling than under a continuation of the Agenda 2000 policy package. Economic projections show that for many dairy farmers ceasing milk production and selling their milk quotas is the most profitable route. Similarly, for 10 per cent of cattle farmers ceasing production and retaining their land only to activate their decoupled payments will maximise their income.

An interesting result of this paper is that despite the significant changes in the profitability of production, when surveyed the majority of farmers indicated that they intend to continue with the same production patterns post decoupling. This shows the inertia to change that exists in the industry. It is not clear whether it is the result of a poor understanding of the policy, a distrust of the future longevity of the policy or just a preference on the farmers' part to continue production despite the financial ramifications. These issues present an interesting avenue for future research.

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ⁱ For further details on the partial decoupling options included in the Luxembourg Agreement see European Commission (2003).