

FAPRI-Ireland Partnership



**World Agricultural Trade
Reform and the WTO Doha
Development Round:**

**Analysis of the Impact on
EU and Irish Agriculture**

Teagasc Rural Economy Research Centre

February 22nd 2006

ISBN 1 84170 450 2

Tel: + 353 (0)91 845 845
Fax: + 353 (0)91 845 847
www.teagasc.ie
www.tnet.teagasc.ie/fapri

Rural Economy Research Centre
Teagasc
Athenry
Galway
IRELAND



Contributors



Julian Binfield

binfieldj@missouri.edu

Julian works on the FAPRI EU modelling system. He was a member of the FAPRI-Ireland team at Teagasc with responsibility for the beef and sheep sectors over the period 1997 to 2001, before moving to FAPRI at the University of Missouri, Columbia.



Trevor Donnellan

tdonnellan@rec.teagasc.ie

Trevor is responsible for the dairy and pig sector modelling as well as for the modelling of agricultural inputs and incomes for the FAPRI-Ireland Partnership. He is a researcher at the Rural Economy Research Centre, Teagasc. He joined the team at Teagasc in 1998. He also manages the FAPRI-Ireland website. His previous research experience was in the area of Input-Output analysis.



Kevin Hanrahan

khanrahan@rec.teagasc.ie

Kevin specialises in modelling livestock markets. He is responsible for the beef, sheep, poultry and cereals sector projections as part of the FAPRI-Ireland Partnership. Kevin joined the staff of the Rural Economy Research Centre in 1995 and worked at FAPRI-Missouri over the period 1996-2000.



Patrick Westhoff

westhoffp@missouri.edu

Pat is Program Director for International Affairs at the Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri. Prior to joining FAPRI-Missouri in August 1996, Pat served four years for the chief economist for the Democratic staff of the U.S. Senate Committee on Agriculture, Nutrition and Forestry.

Preface

This study is presented as a contribution to the debate surrounding the ongoing World Trade Organisation (WTO) agriculture negotiations. The study presents a baseline (status quo) view of the agriculture sector over the next ten years and contrasts this with a number of hypothetical WTO reform scenarios. FAPRI-Ireland has no policy advocacy role and the format of these scenarios should not be inferred as an expectation, or recommendation, in relation to the eventual outcome of the WTO negotiations. The report is produced by staff at the Rural Economy Research Centre, Teagasc, in conjunction with our partners in the Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri in the USA.

In this study the EU GOLD (grains, oilseeds, livestock and dairy) model is used to produce a ten-year 'Baseline' projection for the main agricultural producing countries or regions of the world. The model is then used to examine the effects of agricultural policy change for various EU Member States including Ireland. It is linked to the FAPRI world modelling system and so takes account of and contributes to, the projections for prices obtained and quantities traded on world markets.

Although the 'Baseline' represents a projection of commodity prices, production and quantities traded, readers should note that these projections of the future are not the main aim of the FAPRI system. The main purpose of the FAPRI system and the FAPRI-Ireland Partnership is the analysis of policy measures, either proposed or actual, and the quantitative measurement of the effects of policy and market changes *relative to the Baseline*. The Baseline projections allow us to highlight key medium term market developments and draw some conclusions about future policy developments and their likely impact on Irish agriculture. The projections in this publication are not 'forecasts' or 'predictions'. They are projections made by applying a well defined set of assumptions to our commodity models. These models have been designed based on our knowledge of the economics of major commodity markets.

In this study the implementation of the Luxembourg Agreement and the expansion of the EU that occurred in May 2004 are considered as part of the Baseline. The Baseline analysis and projections are compared to projections under a number of different WTO reform scenarios.

Acknowledgements

The development of the Baseline and scenarios for the analyses contained in this publication have benefited from the input of a large number of civil servants and industry professionals. In particular we would like to thank staff at the Teagasc Rural Economy Research Centre and the Department of Agriculture and Food and members of the Minister for Agriculture's WTO Consultative Group.

Thanks to our colleagues Julian Binfield and Patrick Westhoff of FAPRI-Missouri, and former colleague Robert Young, without whom this work would not have been possible.

Trevor Donnellan
FAPRI-Ireland Partnership

Kevin Hanrahan

Published on February 22nd 2006

Rural Economy Research Centre
Teagasc - Atheryn
Galway
IRELAND.



ISBN 1 84170 450 2

This publication, plus other work from the FAPRI-Ireland Partnership are available on our website at: www.tnet.teagasc.ie/fapri

Glossary of Terms

AMS	Aggregate Measure of Support
AVE	Ad Valorem Equivalent
CAP	Common Agricultural Policy
CGE	Computable General Equilibrium
DDA	Doha Development Agenda
€	Euro
EU	European Union
EU15	European Union of 15 Member States
EU25	European Union of 25 Member States
FAPRI	Food and Agricultural Policy Research Institute
FAO	Food and Agricultural Organisation of the United Nations
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GOLD	Grains, Oilseeds Livestock and Dairy
Hd	Head
Kg	Kilogramme
Mercosur	Mercado Común del Sur (Southern Common Market)
Mt	Metric Tonne
MTR	Mid Term Review of the Common Agricultural Policy
MS	Member State (EU)
NAMA	Non-Agricultural Market Access
NMS	New Member States (EU)
REPS	Rural Environmental Protection Scheme
SFP	Single Farm Payment
SMP	Skimmed Milk Powder
Teagasc	Irish Agriculture and Food Development Authority
TRQ	Tariff Rate Quota
OECD	Organisation for Economic Co-operation and Development
URAA	Uruguay Round Agreement of Agriculture
UK	United Kingdom
\$	US Dollar
WMP	Whole Milk Power
WTO	World Trade Organisation

Executive Summary

Baseline and Scenarios

This report provides analysis of the prospects for the agricultural and food sectors in Ireland and the EU over the period 2005 to 2015. As its start point it uses a 'Baseline' (i.e. no policy change) projection for the major agricultural markets. A number of World Trade Organisation (WTO) scenarios are analysed against this Baseline.

- FAPRI-Ireland Baseline 2005 incorporates:
 - Accession of 10 new Member States (NMS) to the EU
 - Differential EU Member State implementation of the reformed Common Agriculture Policy (CAP)

In each of the WTO scenarios analysed changes are made to trade policy instruments linked to the three strands of the agriculture negotiations within the WTO Doha Development Agenda (DDA). These three strands are domestic support, export competition and market access. The reforms are assumed to begin in 2007. The changes to trade and domestic policy that were made under each of the scenarios analysed are as follows (these changes are summarised in Table S-1):

- WTO Low Scenario:
 - Domestic Support – 55 percent reduction in the aggregate measure of support (AMS) based on Uruguay Round Agreement on Agriculture final bound levels. Green and Blue boxes retained.
 - Export Competition – Phasing out of EU export subsidies through linear cuts from Uruguay Round Agreement on Agriculture (URAA) final bound levels over the course of 15 years.
 - Market Access – 36 percent average cut in tariffs, with a 15 percent cut in tariffs applied to what are termed sensitive products. In all scenarios beef and butter are designated as sensitive products.
 - No expansion of tariff rate quota is associated with the designation of beef and butter as sensitive products.
- WTO Moderate Scenario
 - Domestic Support – As in the WTO Low Scenario.
 - Export Competition – Phasing out of EU export subsidies through linear cuts from URAA final bound levels over the course of 10 years.
 - Market Access – 50 percent average cut in tariffs, with a 20 percent cut in tariffs applied to what are termed sensitive products.
 - No expansion of tariff rate quota is associated with the designation of beef and butter as sensitive products.
- WTO High Scenario
 - Domestic Support – 70 percent reduction in the aggregate measure of support (AMS) based on the URAA final bound levels. Green and Blue boxes are retained
 - Export Competition – Phasing out of EU export subsidies over the course of 10 years, with the elimination front loaded with a 50 percent cut in export subsidies in year 1 of the reform, with the remaining export subsidies eliminated in equal instalments over the remaining 9 years.
 - Market Access – 60 percent average cut in tariffs, with a 25 percent cut in tariffs applied to sensitive products.
 - No expansion of tariff rate quota is associated with the designation of beef and butter as sensitive products.
- WTO High Scenario – Parity euro/dollar exchange rate
 - The trade instrument changes (tariffs, export subsidies and AMS) are the same as in the WTO High Scenario. A parity euro/dollar exchange rate assumption is used rather than the Baseline projected euro/dollar exchange rate applied in the other Scenarios.

All values presented in this executive summary are in **nominal** terms. Inflation should be taken into account when measuring future income levels relative to existing income levels. However, a comparison of the *outcome* of different policy options relative to a Baseline at a point in the future (2015 for example) can be done in either nominal or real terms. Inflation will be the same under both the Baseline and the alternative policy scenarios. It thus follows that when comparing the outcomes under two policy scenarios, that a higher (or lower) level of income under one policy scenario versus the Baseline, will also represent a higher (or lower) level when expressed in real terms and compared to the Baseline outcome.

The Baseline Policies

- The agricultural policy assumptions in the Baseline are:
 - The CAP is that agreed in the Luxembourg Agreement of June 2003.
 - Differential national level implementation of the CAP, as allowed for under the Luxembourg Agreement, is incorporated in the FAPRI-Ireland model.
 - The expansion of the EU that occurred on May the 1st 2004 with the accession of 10 new Member States is incorporated in the Baseline.
 - The Uruguay Agreement on Agriculture (URAA) remains in place, i.e. no Doha Round Agreement occurs.
 - Milk Quotas remain in place and continue to operate beyond 2008, i.e. to the end of the FAPRI-Ireland projection period in 2015.
 - No account is taken in the Baseline of the recent reform of the sugar Commodity Market Organisation.

FAPRI-Ireland Baseline 2005

Milk Sector

- Under the Baseline, by 2015, EU dairy product prices are projected to decline when compared with 2004,
- Under the Baseline the EU cheese price is projected to decline by 5 percent, the EU butter price by 23 percent, and the EU skimmed milk powder by 8 percent relative to price levels observed in 2004.
- Reductions in EU dairy commodity prices lead to a reduction in the Irish farm milk price of over 8 percent by 2015, when compared with the price observed in 2004. Cheese production in Ireland is projected to reach 131,000 tonnes per year by 2015.
- Dairy product price reductions, in combination with population growth, ensures that consumption of dairy products in Ireland grows, particularly in the case of cheese.
- A farm level Irish milk price of € 22.90 per 100kg by 2015 is projected under the Baseline.

Beef Sector

- Under the Baseline, the decoupling of beef Commodity Market Organisation direct payments is introduced across the EU, incorporating the differential Member State implementation allowed for under the June 2003 CAP reform agreement.
- Irish and EU suckler cow herds contract. Over the Baseline projection (2005 to 2015) the EU suckler cow herd declines by 6 percent while the Irish suckler cow herd declines by 19 percent. The differential rates of decline reflect both the greater dependence of Irish beef systems on direct payments and the full decoupling of Irish direct payments. Other Member States, such as France, have chosen to recouple beef direct payments to production.
- Associated with the decline in EU and Irish suckler and dairy cow herds, overall beef production declines in the EU and Ireland. Over the Baseline period EU beef production declines 9 percent and Irish beef production declines by 18 percent.

- EU beef imports increase as indigenous EU supply of beef contracts. EU beef imports increase by over 22 percent. EU beef exports decline by almost 10 percent.
- EU prices increase over the projection period. The European cattle reference price in 2015 is projected to be almost 11 percent higher than the level observed in 2004.
- EU domestic use of beef declines in response to the higher price of beef relative to other meats (especially pig and poultry meat). Per capita consumption of beef in the EU drops 9 percent over the period 2005 to 2015.
- The Irish beef price declines relative to the levels observed in 2004. By 2015 the Irish cattle reference price is 3 percent lower. This projected development reflects the high beef price level that prevailed in 2004 rather than a break down in the close relationship between EU and Irish cattle prices.
- Total Irish domestic use of beef increases 11 percent on the levels observed in 2004. Despite projected declines in per capita consumption of beef (down over 2 percent) under the Baseline, projected increases in Irish population lead to growth in aggregate demand for beef.
- The combination of a large decline in the volume of beef produced in Ireland, and non-increasing cattle prices over the Baseline projection period, produce a large decline in the value of output from the Irish beef sector. The value of the output produced by the Irish beef sector in 2015, €1,121 m, is almost 17 percent lower than the value of output produced by the sector in 2004.

Sheep Sector

- The decoupling of ewe premiums across the EU leads to declining ewe numbers. Under the Baseline, EU ewe numbers in 2015 are projected to be 7 percent lower than in 2004. Irish ewe numbers are projected to decline by over 18 percent between 2004 and 2015.
- Declining stocks of breeding ewes leads to a decline in overall lamb production in the EU and Ireland. EU lamb production is projected to decline by 3 percent over the period 2004—2015. Irish lamb production, under the Baseline, is projected to decline by 21 percent.
- The contraction of indigenous EU supply of lamb, under the Baseline, increases the EU demand for imported lamb. EU lamb imports increase by almost 14 percent over the Baseline period. Irish lamb exports decline over 30 percent between 2004 and 2015.
- EU lamb prices are projected to increase over the Baseline projection period due to the contraction of indigenous EU lamb production. The 2015 EU sheep meat reference price is projected to be 14 percent above the level observed in 2004. Irish lamb prices are also projected to increase over the baseline projection period, with the level projected for 2015 over 13 percent higher than the level observed in 2004.
- Overall the value of output from the Irish sheep sector is projected to decline under the Baseline. The increase in lamb prices offsets, to a degree, the negative impact of the large decline in the volume of output produced. Nevertheless, between 2004 and 2015, the value of output produced by the sheep sector is projected to decline by 5 percent.

Cereals and other Arable Crops

- The decoupling of arable aid payments under the Baseline is not projected to lead to large changes in cereals area harvested in the EU. Over the period 2005—2015 EU soft wheat area is projected to decline by 3 percent, maize area declines by 6 percent, and barley area declines by approximately 1 percent.
- EU market prices for wheat and barley are projected to increase slightly over the projection period. With soft wheat and barley prices in 2015 approximately 1 percent higher than in 2004. Maize prices are projected to decline by almost 6 percent, with this decline driven by a large increase in imports.
- With world prices for grains buoyant under the Baseline due to increased demand from East Asian markets, by the end of the projection period some EU grains exports are being exported without export refunds.

- In response to the decoupling of arable aid payments, by 2015, Irish wheat and barley areas harvested are projected to decline significantly. The decoupling of the arable aid payments in Ireland has a larger impact on land allocated to cereals. This larger impact in Ireland, is due to the greater importance of the previously coupled aid payments to Irish grain farmers' returns, when compared with continental grain farmers.
- Between 2004 and 2015 the Irish wheat and barley areas harvested are projected to decline by 20 and 10 percent respectively. The majority of the decline in cereals area harvested occurs early in the projection period.
- Irish production of grain declines with declining areas harvested, the deviation between the declines in area harvested and production is due to projected improvements in yield per hectare. Wheat production in Ireland is, over the Baseline period, projected to decline by 11 percent and barley production is projected to decline by 7 percent.
- Overall, under the Baseline, the value of output from the Irish cereals sector is projected to decline by approximately 18 percent between 2004 and 2015.
- The reforms of the EU sugar regime agreed recently have not been incorporated in this analysis. The value of the sectors output in 2004 of €76 m is likely to disappear over the projection. The land currently used for sugar beet production will, when reallocated by farmers, have knock on consequences for other sectors of the agricultural economy which have not been analysed in the Baseline.

Outputs, Inputs and Sectoral Income

- The value of overall agricultural goods output (at producer prices) declines under the Baseline. The level projected for 2015 under the Baseline, €4,540 m, is approximately 10 percent lower than the level observed in 2004.
- Under the Baseline declining levels of agricultural activity, as reflected in declining agricultural output volumes and value, are reflected in declining expenditure on inputs by the Irish agricultural sector.
- Declining volumes of input use are in some cases offset by increases in the price of inputs that are determined exogenously to the sector (energy is an obvious and important example)
- By the end of the Baseline projection period (2005—2015) total input expenditure is projected to decline by approximately 11 percent on the 2004 level.
- Expenditure on most input items contribute to the projected decline. However, important expenditure items such as Energy and Lubricants and Contract work are projected to increase strongly over the projection period. Expenditure on Energy and Lubricants is projected to increase by 14 percent over the projection period
- With the introduction of the SFP, the further addition of decoupled dairy compensation payments to farmer SFP, and greater REPS expenditure, total subsidy receipts by Irish agriculture are projected by 2015 to be over 24 percent higher than in 2004.
- Overall, when declining agricultural output and input expenditure are combined with increasing direct payment receipts, Irish agricultural sector income under the Baseline is project to increase. By 2015 the projected level of Irish agricultural sector income, €2,436 m, is over 9 percent higher than the level observed in 2004.
- The dependence of Irish agricultural sector income on subsidies increases over the Baseline projection period. By 2015, over 75 percent of agricultural income is accounted for by direct payments to farmers.

WTO Scenario Analysis

- Three scenarios relating to the domestic support, export competition and market access strands of the ongoing WTO Doha Development Round negotiations were analysed (as set out earlier).
- Under each of the three scenarios the economic impact on EU and Irish agriculture of changes in the allowed level of the level of the aggregate measure of support, export subsidies and tariff levels in the EU were analysed.
- The definitions of each of the scenarios analysed are outlined in the Table S-1. For all of the scenarios analysed beef and butter are considered “sensitive products.”
- No account has been taken, in any of the WTO scenarios analysed, of an expansion of tariff rate quotas (TRQ).
- The economic impact of tariff reductions and elimination of export subsidies on Irish and EU agriculture is dependent on the level of world prices when expressed in euro. This is in turn contingent on the euro/US dollar exchange rate that prevails, as well as the underlying supply and demand fundamentals of agricultural commodity markets.
- To gauge the sensitivity of our WTO scenario analysis to differences from the euro dollar exchange rate used in our Baseline and WTO Scenario analysis (our central rate) we analysed the WTO High Scenario under a euro/US dollar exchange rate that quickly, by 2008, converges to parity

Table S-1 WTO Scenario Definitions

WTO Scenario	Domestic Support	Export Subsidies	Market Access
Low	55 percent reduction in the AMS based on the Uruguay Round final bound levels; retention of the Green and Blue Boxes	Phasing out of export subsidies in equal instalments over 15 years	36 percent average cut in tariffs, with 15 percent minimum cut in tariffs (to apply to sensitive products)
Moderate	55 percent reduction in the AMS based on the Uruguay Round final bound levels; retention of the Green and Blue Boxes	Phasing out of export subsidies in equal instalments over 10 years	50 percent average cut in tariffs, with a 20 percent minimum cut (to apply to sensitive products)
High	70 percent reduction in the total Aggregate Measure of Support (AMS) based on Uruguay Round final bound levels with retention of Green and Blue Boxes	Phasing out of Export Subsidies over 10 years, with 50 percent down payment in year 1 and 9 years equal instalments thereafter	60 percent average cut in tariff lines, with 25 percent minimum cut (to apply to products designated as “sensitive”)

WTO High Scenario Analysis Results

Milk Sector

- Under the WTO High Scenario, export refund expenditure limits will be close to zero by 2015, leading to sharp reduction in Cheese, Butter and WMP exports from the EU and Ireland to third country markets. Commercial exports of speciality cheese types (where price competition is less of an issue) will remain possible, as will exports in the form of food aid.

- By contrast with the other main dairy products, the elimination of export refunds has a less pronounced impact on SMP exports. Declining SMP prices within the EU eventually bring prices to world levels and so exports refunds are no longer required.
- Import tariffs are reduced for all dairy products, but butter which is declared as a sensitive product in the WTO High scenario, is subject to lower tariff cuts. In response, commodity type cheese imports become competitive in the EU and third country cheese imports are subject to a sharp increase.
- By contrast there is no increase in butter imports into the EU due to the sensitive product designation and because there is no increase in the TRQ limit.
- Imports of SMP and WMP are projected to remain relatively stable since prices approach the world level and the incentive for third country producers to target the EU market as an export destination declines.
- The decline in EU dairy product exports to third countries and the increase in imports of some dairy products have a sizable impact on the EU dairy product supply and demand balance.
- The greatest declines are seen in butter and cheese prices, while the decline in SMP prices is more modest. Consequently there is no incentive to further change the EU or Irish dairy product mix since the returns to butter/smp versus the returns to cheese do not change markedly relative to the Baseline
- Relative to current levels of production, more cheese will certainly be produced in Ireland and the EU under the WTO high scenario however, the increase in production tracks that projected to occur in the baseline quite closely and the WTO does not create a further an additional incentive to switch milk to cheese production.
- The fall in dairy commodity prices in Ireland and in the EU generally is greater than that projected under the Baseline and hence this has a further positive impact on domestic consumption of dairy products. Overall, to clear the dairy product markets across the EU further reductions in intervention prices (beyond those agreed in the Baseline (Luxembourg Agreement) are required.
- Under the WTO High Scenario by 2015, the price of butter declines by 18 percent, the price of cheese declines by 10 percent and the price of SMP declines by 6 percent relative to the 2015 Baseline level.
- In turn by 2015 this leads to reductions in the EU milk price of 11 percent and a decline of 11 percent in Ireland. This would leave the EU average milk price at 23.5 euro per 100 kg by 2015 and 20.3 euro per 100 kg in Ireland.

Beef Sector

- Under the WTO High Scenario, Irish and EU suckler cow numbers contract relative to Baseline levels in response to lower EU market prices.
- EU suckler cow numbers, by 2015 under the WTO High Scenario, are 5 percent lower than under the Baseline. Irish suckler cow numbers also decline. By 2015 the Irish suckler cow herd is projected to number approximately 890,000 head. This represents a 4.3 percent decline on the Baseline level in 2015.
- Irish suckler cow stocks were last observed at this level (less than 900,000 head) prior to the Mac Sharry reforms of the early 1990s.
- Dairy cows continue to account for the majority of calves that enter EU beef production systems. With no change in the dairy quota system under the WTO High Scenario, Irish and EU beef production contracts, though the reduction in beef production relative to the Baseline is not as dramatic as the reduction in the number of suckler cows. EU beef production in 2015 is projected to be over 2 percent lower than under the Baseline.
- Irish beef production is under the WTO High Scenario projected to be 2.5 percent lower than under the Baseline.
- The elimination of export subsidies under the WTO High Scenario means that by the end of the projection period exports of beef from the EU fall dramatically from Baseline levels. EU beef exports in 2015, under the WTO High Scenario, are almost 70 percent lower than under the Baseline.

- Beef that would otherwise have been exported from the EU with subsidy is diverted onto the EU internal market. Increased supplies of beef on the internal EU market push down internal EU prices.
- EU beef prices under the WTO High Scenario in 2015 when compared with the Baseline prices in 2015 are almost 10 percent lower.
- Reduced internal prices, and the associated increased volumes of EU produced beef on the EU market, reduce somewhat the opportunities for exporters of beef to the EU. Nevertheless, EU imports of beef from non-EU markets increase slightly when compared to the Baseline level.
- The complexity of tariff lines and the nature of beef trade (where cuts rather than commodity beef carcasses are traded) mean that the FAPRI-Ireland models may underestimate the sensitivity of EU beef imports to tariff cuts. The designation of beef as a sensitive products and the absence in the WTO High Scenario of an expansion of TRQ leaves the EU beef market with significant protection vis à vis imports from other countries.
- The value of the Irish cattle and beef sector under the WTO High Scenario declines relative to the Baseline with the value of output from the sector down 13 percent in 2015.

Sheep Sector

- Sheep meat is not designated as a sensitive product in the WTO High Scenario. Thus it faces a tariff cut of 60 percent.
- The large reduction in import tariffs leads to a large increase in imports of lamb by the EU. When compared with Baseline levels in 2015, EU lamb imports under the WTO High Scenario are almost 56 percent higher.
- EU prices, as a consequence of reduced tariff protection, decline relative to the Baseline under the WTO High Scenario. EU prices in 2015 are projected to be over 15 percent lower than they would have been under the Baseline.
- In response to lower prices, EU and Irish ewe flocks contract. Compared with the level projected under the Baseline in 2015, EU ewe flocks decline by over 9 percent, while Irish ewe flocks decline by almost 8 percent.
- EU and Irish lamb production contracts in line with the decline of the ewe flocks under the WTO High Scenario. Irish lamb production in 2015 under the WTO High Scenario is 9 percent lower than under the Baseline.
- Irish lamb exports to continental EU and UK markets decline as a consequence of reduced production and increased competition on these markets from non-EU suppliers. Compared to the level projected for 2015 under the Baseline, Irish exports of lamb, under the WTO High Scenario, are over 30 percent lower.
- The value of the Irish sheep and lamb sector, under the WTO High Scenario, declines by 23 percent relative to the Baseline in 2015.

Cereals and other Arable Crops

- The cuts in export subsidies and import tariffs under the WTO High Scenario lead to slightly lower prices for all crops when compared with the Baseline.
- By 2015, under the WTO High Scenario, EU wheat and barley prices are projected to be approximately 2.5 percent lower than under the Baseline.
- By 2015, under the WTO High Scenario, with increased world prices and lower internal EU grain prices as a result of the trade reforms, EU soft wheat and barley exports occur almost entirely exported without the use of export subsidies.
- Exports of grains from the EU increase, despite the reduction of export subsidies, due to the lower prices that reduce internal EU cereal prices to world price levels. This reduction in internal EU prices in part results from a fall in demand for cereals for feed in the EU as the livestock sector contracts.
- Reduced EU grain prices are reflected in lower Irish grain prices, with the Irish soft wheat price 1.5 percent lower and Irish barley prices approximately 2 percent lower, under the WTO High Scenario, than under the Baseline in 2015.

- This decline in Irish cereal prices does not lead to a decline in Irish cereal area harvested, or in cereals production. The small magnitude of the price change projected for cereals under the WTO High Scenario, when compared with those projected for other agricultural commodities such as beef, lamb and milk, increases the relative returns from cereals.
- The projected improvement in the relative returns to cereals leads to a small increase in the area of agricultural land devoted to cereals when compared with the Baseline.
- Compared to the Baseline in 2015, Irish wheat and barley areas harvested are approximately 5 percent higher under the WTO High Scenario.
- By 2015, under the scenario, the value of the Irish cereals sector, at €153 m, is approximately 3 percent up on the projected value of the sector under the Baseline.

Input Expenditure and Income

- The large decline in the value of agricultural output produced in Ireland under the WTO High Scenario, when compared with levels projected under the Baseline, are largely driven by changes in output prices. There are also declines in activity levels in dry stock farming and cereals and these lead to reduced expenditure on inputs when compared to the Baseline.
- Because the prices of most inputs are exogenous to the FAPRI-Ireland model, and are not assumed to be affected by the outcome of the WTO Doha negotiations, the reduction in total outlay on inputs is smaller than the reduction in the value of agricultural output.
- Under the WTO High Scenario, total input expenditure by Irish agriculture is projected to decline by over 2 percent relative to the Baseline.
- The small decline in input expenditure is insufficient to off-set the negative impact on agricultural sector income of the projected decline in the value of output produced under the WTO High Scenario.
- In all of the WTO scenarios analysed the continued green box designation of the EU single farm payments is assumed. When agricultural sector subsidy receipts that are fixed relative to the Baseline, are combined with significantly reduced output value and marginally reduced input expenditure, the consequence for agricultural sector is a sharp decline in agricultural sector income.
- Compared to the Baseline projections for agricultural sector income, under the WTO High Scenario Irish agricultural sector income is 11 percent lower by 2015.

WTO Low and Moderate Analysis Results

- The sector level results for the WTO Moderate and WTO Low Scenarios lie largely between the Baseline and WTO High Scenarios. This reflects the degree to which the two scenarios are more or less “liberalising” than the Baseline and WTO High Scenario.
- The WTO Moderate Scenario, by the end of the projection period, is largely equivalent to the WTO High Scenario with respect to the degree to which export subsidies are eliminated. Remaining differences in the results under the two scenarios are largely accounted for by the different market access reforms (tariff cuts).
- The WTO Low Scenario, with its longer schedule for export subsidy elimination and lower level of tariff cuts, leads to more “benign” commodity and agricultural sector income projections than the WTO High and Moderate Scenarios.

Milk Sector

- The value of Irish dairy sector output declines under the WTO Low Scenario due to the elimination of export refunds and cuts in import tariffs. By 2015, when compared to the Baseline, the value of the output of the Irish dairy sector declines by almost 7 percent.
- The lesser impact under the WTO Low scenario, when compared with the WTO Moderate and High scenarios, is due to the fact that it is only towards the end of the projection period that the elimination of export refunds negatively affects internal EU prices.

- Under the WTO Moderate Scenario, the decline in the value of the dairy sector is almost equal to the decline projected under the High Scenario. When compared to the value of output produced by the Irish dairy sector projected under the Baseline in 2015, the projected value of the sector under the WTO Moderate Scenario is over 9 percent lower.

Beef Sector

- The impact of the WTO Low Scenario on the Irish beef sector is negative. However, the longer schedule for the elimination of export refunds under the WTO Low Scenario means that it is only in the last 4 years of the projection period that significant reductions in the value of the sector's output, relative to the Baseline, are projected to arise.
- This limited impact is due to the fact that the EU has supported the export of beef from the EU at levels below the maxima allowed for under the URAA. Thus, cuts in export subsidies under the WTO Low Scenario do not begin to significantly affect the EU beef market until the level allowed under the scenario reaches and falls below the Baseline levels of support.
- By 2015, under the WTO Low Scenario, the value of Irish beef sector output declines by almost 7 percent relative to the Baseline.
- Under the WTO Moderate Scenario, the impact on the value of the Irish beef sector's output is similar by the end of the projection period to the impact of the WTO High Scenario. This is due to the fact that by 2015, the subsidised exports that are allowed under the WTO High and WTO Moderate Scenarios are almost equivalent.
- By 2015, the value of the Irish beef sector's output is projected to be almost 13 percent lower than under the Baseline.

Sheep Sector

- Across the different sub-sectors of the Irish agricultural economy the sheep sector is the most affected under the WTO Low and WTO Moderate scenarios. This is primarily due to the fact that lamb is not designated a sensitive product.
- The tariff cuts under both the WTO Low and WTO Moderate Scenarios are sufficient to lead to increased volumes of lamb imports into the EU and lower internal EU prices.
- By 2015, under the WTO Low and Moderate Scenarios, the value of the Irish sheep sector's output is projected to be approximately 13 percent lower than under the Baseline.

Input Expenditure and Income

- The projected impact of both the WTO Low and WTO Moderate Scenarios on input expenditure is lower than that under the WTO High Scenario. In general the negative price and output impacts under these two scenarios are lower than under the WTO High Scenario and this is associated with similarly smaller impacts on levels of input expenditure
- Under the WTO Low Scenario expenditure on inputs in 2015 is less than 1 percent lower than under the Baseline. Under the WTO Moderate Scenario input expenditure in 2015 is approximately 1.5 percent lower than under the Baseline.
- The impact of the WTO Moderate Scenario on agricultural sector income, by the end of the projection period, approaches the impact of the WTO High Scenario. This is largely due to the fact that by 2015, with the schedules for the elimination of export subsidies under both the WTO Moderate and WTO High Scenario are almost equivalent. By 2015 under the WTO Moderate Scenario Irish agricultural sector income is almost 10 percent lower than under the Baseline.

High Scenario – Exchange rate sensitivity

- The sensitivity of our analysis to the exchange rate projections used was examined. As an alternative to what we have termed our "central" exchange rate projection (where the US dollar euro exchange rate approaches a level of \$US 1.43 by 2015) we examined what the impact would be if instead of depreciating in value over the projection period the US\$ appreciated to a parity exchange rate with the euro.

- The results of the analysis illustrate the importance of exchange rate projections in determining the economic impact of trade reforms.
- With a parity exchange rate between the US dollar and the euro, the value of Irish agricultural sector income under the WTO High scenario would be almost €300m higher than under the same trade reform scenario with our Baseline exchange rate projection.
- Other things being equal, a stronger US dollar would raise world prices (when expressed in euro) and would reduce, or in some cases eliminate the need to export subsidies. This would mean that the elimination of subsidies would have less of a negative impact that it would have under the Baseline exchange rate. Higher world prices in euro would also reduce, *ceteris paribus*, the price competitiveness of non-EU exporters relative to EU exporters.
- A different exchange rate path, such as the parity exchange rate would, however, be expected to have wider economic consequences that have not been accounted for in our analysis, which uses a partial equilibrium model.

Conclusions

- Under the Baseline the value of agricultural sector output declines as decoupling leads to reduced levels of agricultural activity and in the case of the dairy sector to lower milk prices.
- The increase in agricultural sector income, expressed in nominal terms, over the Baseline projection period, is due to growth in the value of subsidies to agriculture and declining expenditure on inputs that is associated with the lower levels of agricultural activity.
- By the end of the Baseline projection period the share of Irish agricultural sector income accounted for by subsidies exceeds 75 percent. This Baseline projection illustrates the increasing dependence of Irish agricultural sector income on subsidies.
- Since agricultural income subsidies are politically determined and could be subject to change when the EU budget as a whole is reviewed in 2008/2009 these results highlight an important risk factor for future Irish agricultural sector income.
- All three of the WTO scenarios analysed lead to lower agricultural sector income in Ireland when compared with the Baseline. Under all three of the scenarios the value of agricultural output declines relative to the Baseline. The corollary of this is that under all three WTO Scenarios the dependence of the Irish agricultural sector income on subsidies increases.
- Under the WTO High Scenario income generated by the agricultural sector declines by over 11 percent compared to the Baseline. With the value of what the Irish agricultural sector produces declining under the WTO High Scenario due to lower output prices and lower volumes of production, the share of agricultural income in 2015 that is accounted for by subsidies is projected to reach almost 83 percent.
- The final WTO agreement will, in all likelihood, be more extreme than the most extreme scenario analysed in this study (the WTO High Scenario). The agreement on the elimination of export subsidies in Hong Kong in December 2005, for example, calls for a agricultural export subsidy elimination schedule that is shorter than any considered in this analysis.
- WTO Agriculture Committee Chairman Mr Crawford Falconer's report on the state of the agricultural negotiations indicates the shape of the agreement that is likely to be reached. Future FAPRI-Ireland analysis will examine the impact of more liberalising WTO outcomes than those considered here.
- The FAPRI-Ireland analysis of what may, *ex post*, be seen as overly optimistic scenarios suggests significant negative impacts on the Irish agricultural sector and illustrates the importance of the outcome of the negotiations to the future economic health of the Irish agricultural sector.

- ENDS -

World Trade Reform: Possible Impact of the Doha Round on EU and Irish Agriculture

J. Binfield, T. Donnellan, K. Hanrahan and P. Westhoff

Life consists not in holding good cards but in playing those you hold well.

Josh Billings

1 Introduction

The Doha Round of the World Trade Organisation (WTO), and the agricultural negotiations that are part of the Doha Round, have not yet been concluded. At the sixth WTO Ministerial meeting in Hong Kong in December 2005 there was agreement on the elimination of all forms of agricultural commodity export subsidies. Agreement on market access and domestic support pillars of the agricultural negotiations was not possible in Hong Kong. Further negotiations on the modalities of reforms relating to these remaining pillars are slated to be completed by April 2006. The final outcome of the Round and its implementation will have a significant affect on Irish and EU agriculture. Even at this advanced stage, it is not fully clear what the details of the final WTO Agreement will be. Agreement on the elimination of agricultural export subsidies signalled in the Doha declaration of 2001 has been made but the exact schedule for their elimination and the reforms to the other two pillars of the agricultural negotiations (domestic support and market access) have not been agreed by WTO members.

While the exact nature of the future reforms is unknown, it is however possible to be certain that some reform of agricultural trade instruments along the lines outlined in the report by Mr Crawford Falconer (Chairman of the Special Session of the WTO Committee on Agriculture) to the WTO Trade Negotiations Committee (TNC) will occur (WTO, 2005). This FAPRI-Ireland¹ report examines a number of possible scenarios for WTO reform and seeks to provide an indication of the possible scale of the impact under varying final outcomes to the negotiations. Each of the WTO scenarios addressed possible reforms to the three main policy areas that have been under negotiation since 2004 as part of the Doha Development Round.

The research on which this FAPRI-Ireland study is based was conducted prior to the conclusion of the Hong Kong Ministerial. At the Hong Kong meeting preliminary agreement was reached on one of the three pillars of the agriculture negotiations (export competition) with negotiations to continue on the remaining two pillars. The agreed date for the final elimination of export subsidies is earlier than in all three of the scenarios examined in this paper. Though the exact schedule for subsidy elimination has yet to be agreed by WTO members, it is likely to be closer to the more extreme of the policy reform scenarios outlined below. In each of the three scenarios analysed all three pillars of the negotiations (domestic support, export competition and market access) are reformed to varying degrees.

The rest of this report is presented in the following sections:

- Section 2 provides a background to the negotiations and to the motivations for producing this analysis. It also presents some important caveats which need to be borne in mind when interpreting the results that are presented later.
- Section 3 describes the macro economic perspective which surrounds the projections and describes the baseline assumptions and the three core scenarios to be examined.
- Section 4 describes the baseline results with individual commodity level and input expenditure details, as well as an aggregate output, input and income picture. It also comments on the importance of the Baseline in the context of analysis of trade reform scenarios.

¹ FAPRI – Ireland is a partnership between Teagasc- The Irish Agriculture and Food Development Authority and the Food and Agricultural Policy Research Institute at the University of Missouri.

- Section 5 presents the results from the most extreme of the WTO scenarios examined (the WTO High Scenario). A summary of the results obtained under the least extreme (WTO Low) scenario and the intermediate (WTO Moderate) scenario is also presented.
- Section 6 provides sensitivity analysis to the outcome of the WTO High Scenario by examining the impact of a parity dollar euro exchange rate on the impact of the WTO High Scenario on the agricultural sector
- Section 7 summarises the main finding of the study, detailing the main drivers behind the projected impact of the scenarios examined. This section also looks at possible areas of future work.

The appendices to the report provide detailed tables of data relating to the baseline and the scenarios results that are described in the text of the paper.

2 Background

2.1 Recent History of the WTO Agriculture Negotiations

The Fourth WTO Ministerial Conference in Doha in 2001 established a mandate for future negotiations in a variety of areas, including agriculture. At that point a date of Jan 1st 2005 was set for completion of the negotiations.

The Fifth Ministerial Conference took place in Cancún, in September 2003. It was not particularly successful and the meeting reached a stalemate on issues unrelated to the agriculture negotiations. Subsequent progress in the negotiations was slow, with the result that the Jan 1st 2005 deadline for completion of the negotiations was missed and the objective then became the completion of the negotiations by the end of 2006.

In October 2005, US Trade Representative Mr Robert Portman unveiled new US proposals for WTO reform, in the context of preparation for, and positioning prior, to the sixth WTO Ministerial in Hong Kong that took place in December of 2005. This US proposal called for substantial reductions in trade distorting support and tariffs, and the complete elimination of export subsidies. Under the US proposal these reductions in export subsidies would be front loaded so that there would be deep initial reductions aimed at having an immediate impact on world trade. A subsequent phase of reductions would then see the gradual elimination of other trade distorting practices.

The pace and magnitude of the US reform proposal was met with some surprise and it was felt by some that the US, as well as the EU itself, would need to make significant changes to existing agricultural policy if the US proposals were accepted. Notwithstanding these concerns, EU Trade Commissioner Mr Peter Mandelson, the EU Commission's chief WTO negotiator, soon followed with a revised EU WTO negotiating position.

Commissioner Mandelson offered to cut the highest agriculture tariffs by 60 percent and eliminate all agricultural export refunds if reciprocal reforms were implemented by other parties to the WTO negotiations. Among farm bodies, reaction to the Mandelson offer in both the EU and US was negative. The Mandelson offer made explicit what farm organisations in Ireland had feared for some time, i.e. that the European Commission was prepared to accept reform of agricultural trade, in exchange for progress in areas of the WTO negotiations unrelated to agriculture.

In mid October 2005 at an emergency meeting of EU Foreign Ministers, concern was expressed by many EU Member States, including France, Spain, Poland and Ireland, over the extent of the Mandelson offer. It was further argued by France that, in the context of his WTO proposal, Commissioner Mandelson had in fact exceeded his negotiating mandate.

Subsequently at the Sixth WTO Ministerial in Hong Kong agreement was reached on only one of the three pillars of the agricultural negotiations, namely export competition. In the Doha Declaration that opened the round in 2001, WTO Members committed themselves to the elimination of export subsidies of all forms without specifying an end date for any elimination schedule. At the sixth Ministerial, agreement was reached on the end date for export subsidies. As WTO Director General

Mr Pascal Lamy noted, the Round was 60 percent complete, compared to 55 percent prior to the meeting. Negotiations among WTO Members on the domestic support and market access pillars of the agricultural negotiations as well as on non-agricultural market access (NAMA) will continue, with a deadline for their completion of April 2006.

In Ireland discussions early in 2005 at the Irish Minister for Agriculture's *WTO Consultative Group* led to a request for analysis of a number of WTO scenarios by the FAPRI-Ireland Partnership. These scenarios were specified by a sub-committee of interested parties from the Minister's *WTO Consultative Group*. The results of the analysis would aid interested parties in the continuing WTO negotiations.

2.2 Some Caveats relating to the results

The results presented in this paper, particularly those relating to the impact of WTO reforms, need to be carefully interpreted. There are a number of caveats that need to be outlined so as to facilitate interpretation of the results presented in this paper and their comparison with other empirical analyses of the impact of agricultural trade liberalisation within the Doha round of the WTO. Seven caveats that we consider to be important are described in the following sub-sections.

2.2.1 Unilateral WTO reform by EU

The first of the caveats associated with this analysis is that it is based on a unilateral implementation of WTO reform by the EU. In other words the analysis is based on a situation where the EU implements its agricultural trade policy reforms, while the agricultural trade policies of other countries remain unchanged. A more detailed study, requiring scenario analysis on models with a worldwide scope, would also look at the impact of the reforms undertaken in other countries. In all likelihood global trade reform (which would be associated with a WTO outcome) would probably lead to a higher level of world prices than that projected in this analysis. Higher world agricultural commodity prices would, *ceteris paribus*, reduce the negative impact of the WTO reform scenarios on EU agriculture. FAPRI-Ireland would hope to be in a position to conduct such an analysis during 2006. See Fabiosa et al. (2005) for an analysis of a multilateral trade reform using a partial equilibrium model similar to the FAPRI-Ireland model.

2.2.2 Partial analysis of WTO reform

The second caveat is that the analysis of WTO reform is partial in the sense that it does not examine the impact of WTO reform on non-agricultural parts of the domestic or international economy. Reforms which impact on other sectors of the economy may have a beneficial impact on international trade and on the international macro-economic environment, to the extent that they would be expected to actually increase economic growth rates around the world. Such developments would raise incomes and have a beneficial impact on the demand for agricultural products around the world. This might also result in higher world prices for agricultural commodities than projected in this analysis and again this might reduce the negative impact of the reform on the agricultural sector in Ireland. A total economy (general equilibrium) examination of WTO reform is not possible with the partial equilibrium commodity models at our disposal. Readers are directed to Anderson and Martin (2005) for details of analyses of the impact of trade reform within the Doha Round conducted using computable general equilibrium (CGE) modelling methodologies. See Hertel and Keeney (2005) and Anderson, Martin and van der Mensbrugghe (2005) for recent analyses of multilateral reform using CGE models that indicate the scale of the benefits (and costs) of global trade reform.

2.2.3 Single Farm Payment and the Green Box

The decoupling of direct payments, which formed part of the 2003 Mid Term Review of the Common Agricultural Policy (CAP), was designed to place a greater share of EU agricultural support into the Green Box (the category of payments which, under WTO rules, are deemed to be non trade distorting). Assignment of these payments to the Green Box has advantages from the perspective of the EU, since currently there is no WTO limitation on the amount of Green Box payments that may be made, nor do there seem to be serious moves by parties within the WTO negotiations to introduce such a limit. By contrast, payments which are categorised as being in the Amber Box or Blue Box may be further constrained in future WTO negotiations. By engaging in its own internal policy reform

through the introduction of decoupling, the EU has largely resolved one of the key difficulties it might otherwise have faced in the Doha WTO negotiations.

The analysis presented in this paper is made on the understanding that decoupled payments, such as the single farm payment (SFP), will continue to be counted in the Green Box and that Green Box subsidies will remain unaffected by limitations on domestic agricultural policies that follow from a possible WTO agreement. If the Green Box status of decoupled payments were successfully challenged then future constraints that might be applied to the Amber Box or Blue Box could require the EU to engage in further CAP reform.

2.2.4 Recoupled Payments

Not all EU Member States (MS) have opted to fully decouple payments. Some MS chose the option which allowed them to recouple specific payments either totally or partially. In this analysis it is understood that the future WTO agreement (as defined in each of the three scenarios analysed) would not change the decisions that the Member States have made regarding the implementation of these payments, that direct payments would continue to be made as under the Baseline and that the reduction in the aggregate measure of support (AMS) under each of the scenarios analysed does not affect the level of these recoupled direct payments.

2.2.5 Sensitive Products and Tariff Rate Quotas

The designation of beef and butter as sensitive products reduces, within the scenarios analysed, the extent to which these products are exposed to tariff cuts. Within the WTO Doha Round negotiations it is likely that sensitive product designation and associated moderation of market access provisions (i.e. lower tariff cuts) will also be accompanied by other reforms to trade instruments designed to increase market access. At this stage the degree to which WTO members will be allowed to designate tariff lines as sensitive (the 1 percent versus 8 percent debate) is unresolved, as is the way in which tariff rate quotas (TRQ) and other market access provisions will be adjusted for sensitive products.

During the lead up to the Hong Kong WTO Ministerial both the European Commission and the US proposed that TRQ associated with products designated as sensitive be expanded, so as to provide increased market access for imports. Such an expansion of TRQ would be expected to have a negative impact on internal EU prices through the expansion of imports at lower or zero import tariffs. In all of the WTO Scenarios analysed in this paper no account has been taken of the market access provisions that are likely to be attached to agricultural products that receive sensitive product designation.

Analysis published by the European Commission (2005b) factored in TRQ expansion in an evaluation of the impact on EU agriculture of the EU offer in the Doha negotiations in December 2005. The inclusion of TRQ change parameters in the European Commission's WTO trade reform scenarios when compared to its exclusion from the analysis published in this paper partly explains the difference in the projections contained in this and the European Commission's (2005b) analysis.

2.2.6 Difficulties Associated with Tariff Reduction Impacts

Even if the potentially problematic issue of TRQ expansion for sensitive products is not addressed there are difficulties in modelling increases in market access in a model of this type. The GOLD model is aggregated at the commodity level, i.e. beef, cheese, wheat etc are modelled and there is no account taken of the heterogeneity of these products. Different cuts of meat, types of cheese, or quality of grain are not accounted for in most partial equilibrium trade models. The heterogeneity of internationally traded agricultural commodities is at least partially reflected in the hundreds of tariff lines that apply to trade in agricultural goods. In analysing the impact of tariff reductions using multi-market partial equilibrium models, such as the FAPRI-Ireland model, reductions in a single, representative tariff per commodity are used. The aggregation problem involved in this type of analysis are well known (Westhoff et al., 2004) Those familiar with the meat sector know that this is an important distinction, especially with regard to poultry where imports have surged for a particular tariff code previously thought to be restrictive. The results of analyses of the impact on agricultural production, consumption and trade of tariff reductions should accordingly be treated with caution since a more detailed model of the individual sectors and individual tariff line effects would be required to analyse these changes properly.

2.2.7 The Euro / US Dollar Exchange Rate

Other things being equal, a weaker dollar could have a negative impact on EU third country exports and on internal EU prices by increasing the World /EU price gap and making lower future export subsidy limits binding at an earlier point in time. Conversely a stronger dollar (versus the euro) would have the opposite impact. World prices would be higher when expressed in euro, reducing the gap between World and EU prices. In turn this then would reduce the cost per tonne of export refunds and increases the volume of goods that the EU can export with subsidy to third countries and remain within future WTO limits. Ultimately when export refunds cease to exist (in the High and Moderate Scenarios this occurs in 2016 and in the WTO Scenario in 2021) this exchange rate factor would become irrelevant with regard to export subsidisation. However, even in the absence of export subsidies, higher/lower world prices denominated in euro, could arise due to different exchange rate paths and would alter the impact of any given reduction in tariffs.

Since the future path of the US dollar/euro exchange rate affects the outcome of the analysis, the impact of a parity exchange rate scenario on the outcomes of this analysis is examined in section 7. The objective of this exercise is to illustrate the sensitivity of our projections to differences that might arise, *ex post*, in this important macroeconomic projection.

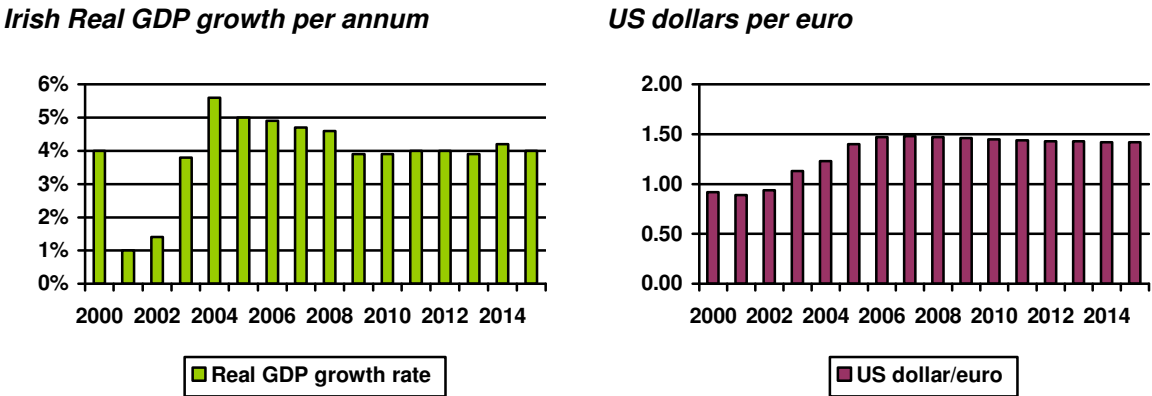
3 Macro Economic Projections

In broad terms the macro economic backdrop to the projections produced here are positive both in terms of the outlook at a global level and also domestically in the case of Ireland. A particular feature is that strong economic growth is projected in some high population countries in Asia. Income growth in these countries will be a significant driver in international demand for agricultural commodities.

In the EU the projected rate of economic growth will average at approximately 2 percent per annum, with inflation running at about 1.8 percent. Economic growth rates in Ireland are projected to be stronger than the average in the EU, averaging approximately 4.3 percent per annum. Over the projection period Ireland is also projected to continue to experience slightly higher levels of inflation than the EU average, with annual Irish inflation set to average 2.3 percent.

Figure 3-1 illustrates the projections for Irish macroeconomic growth that are used in the analysis and the projected path of the US dollar/euro exchange rate. Under both the Baseline and the WTO Reform Scenarios it is projected that the US dollar will depreciate against the euro.

Figure 3-1: Key Macro Economic Projections



FAPRI-Ireland Model (2006)

4 Scenario Descriptions

Four principal scenarios are analysed in this study. These scenarios are the Baseline scenario, and three WTO reform scenarios. The WTO scenarios are termed “Low”, “Moderate” and “High” and are based on what were in mid-2005 considered possible outcomes from the ongoing Doha Round of WTO negotiations. The precise definition of each of these scenarios is outlined below; the WTO

scenarios analysed were agreed with the Minister for Agriculture and Food's *WTO Consultative Committee*.

The impact of a given WTO Scenario, as noted earlier, is conditional, at least in part, on the macroeconomic projections used in simulating both the Baseline and Scenarios. To illustrate the sensitivity of our analysis to the US dollar/euro exchange rate adopted in the Baseline and WTO scenario analysis Section 7 examines the impact of a dramatically different US dollar/euro exchange rate projection on the impact of one of the WTO scenarios (the WTO High Scenario) on Irish agricultural sector income.

4.1 WTO Terminology and Features of the Negotiation

The agriculture discussions within the Doha Round of WTO negotiations have centred on three areas: domestic support, export competition and market access. In each of the three WTO scenarios the implementation, by the EU, of changes under each negotiation area are examined and their impact on Irish and EU agriculture analysed. For practical purposes it is necessary to set a date for the beginning of the implementation of the WTO reforms analysed in the three scenarios.

Box 4-1: The Strands to the Current WTO Agriculture Negotiations

Market Access – the Tariffs Debate

The Uruguay Round Agreement on Agriculture (URAA), part of the previous round of multilateral trade negotiations known as the Uruguay Round of the General Agreement on Tariffs and Trade (GATT), was successful in introducing the concept of tariffication which saw quotas and other restrictive import measures converted into tariff equivalents. Some of these new tariffs were set at extremely high levels especially when compared with the typical level of industrial tariffs.

In addition to the system of conventional tariffs, tariff-rate quotas (TRQs) allow for specific quantities of (“in quota”) imports at tariff rates that are lower than the conventional (“out of quota”) tariffs. TRQs were established as a means of opening up markets, but have met with limited success to date, since the manner of their allocation, which is done on a country by country basis, means that they sometimes go unfilled either because a specific country does not have a sufficient surplus of product to export, or because the price differential between the home and export market is not sufficiently attractive to allow a volume of exports that fills the allocated quota.

The negotiations on market access are now centred on reducing the level of out of quota tariffs, with demands for the biggest percentage reductions in the highest tariffs. In parallel there are also arguments for increases in TRQs to ensure increased market access. Those who favour reduced levels of protection would like to see progress in both areas.

Export Competition – the Export Subsidisation Debate

The URAA introduced disciplines on export subsidisation by WTO Members. In the case of the EU this meant a reduction in the limit on both the physical volume of subsidised exports and the amount that could be spent (the outlay) in funding export subsidies.

Export subsidies have faced strong international criticism. They increase the volume of a commodity in world trade and reduce the international price, which may initially benefit importing countries. However, these low price imports (which are only low in price because of the subsidies paid to exporters) may render local production in the importing country uncompetitive and hinder the development of agriculture in these countries.

Agreement was reached at the Sixth WTO Ministerial that all forms of export subsidisation should be eliminated by 2013. This agreement was accompanied by an undefined commitment to reduce a “substantial share” of export subsidies by 2010. The details of the schedule for the elimination of export subsidies have not yet been worked out.

Domestic Support – the AMS Debate

Domestic support policies that create market and trade distortions were targeted in the URAA. During the implementation period of the URAA, developed countries agreed to limit their expenditures on domestic support to 80 percent of the level in the base period. A system to categorise payments was established and a formula to calculate the extent of support, known as the AMS was established to track the evolution of support spending in specific areas by governments.

To date the EU has exceeded this target and is already in a position to accommodate further reform in this area. It has also made changes to its own internal agricultural policies that will allow for further steep reduction in the AMS limit. The AMS and the related WTO Green, Amber and Blue Boxes are discussed in more detail in Box 4-2.

The year 2007 has been chosen as the start date for all three WTO scenarios analysed. This date would be consistent with a WTO agreement being reached in early 2006. A period would then be required to formulate schedules for the reforms based on the agreement reached (e.g. country specific product level export subsidy limits and tariff lines for future years). It is envisaged that these would be set down and agreed in advance of implementation of the reform to minimise potential future compliance related disputes between parties to the agreement. The drawing up and acceptance of these schedules could take several months and therefore it would be 2007, at the earliest, before actual reform could begin.

Box 4-2: WTO and the Box Debate

The WTO categorises payments to agriculture into different groups according to their economic attributes. The groups are known as boxes and in agriculture there are three of them, a Green Box, an Amber box and a Blue box. The colours are intended to convey a meaning similar to a traffic light system, except that the Red light in the case of agriculture is actually Blue (a mixture of Red and Amber). Extending the analogy, payments in the Green Box are permitted, payments in the Amber box are to be reduced and it is aimed that payments in the Blue box, should at some point be discontinued.

The definitions of the three "boxes" and the categorisation of payments as falling into one or other of the boxes are based on their economic attributes, more specifically on the extent to which the policy is likely to affect production or consumption (to protect the domestic price level and in turn boost farm incomes) and consequently distort international trade. On the other hand price support mechanisms and policies such as quotas, affect production levels and alter a country's ability to compete internationally.

Aggregate Measure of Support

Central to the trade reform process to date has been the Aggregate Measure of Support (AMS), an index which measures the value of support provided to a sector by government. The AMS must be reduced as part of the URAA. In practice the AMS limit has been well above the actual expenditures in the EU.

Amber Box

Amber box policies include support prices, direct payments, capital, input and insurance subsidies, all of which form part of the EU AMS and have been subject to a reduction of 20 percent over the life of the URAA.

Green Box

The Green Box is comprised of the least controversial policies, those which are said to be non or minimally trade distorting. It includes such things as, decoupled income supports and payments made under environmental programmes. These policies do not increase market prices or impose costs on consumers. Such policies must be financed by government and are excluded from the AMS calculation. The Green Box did not have limits associated with it under the URAA.

Blue Box

Instead of a red box for policies that must be eliminated, a Blue box was created for policies which limit production and which meet specific criteria. Typically these policies are payments to producers based on a production constraints (such as historical yields, areas or livestock numbers), although the payments themselves can in practice affect the level of actual production. These payments are also excluded from the AMS calculation and currently are not subject to reductions.

Box Shifting Payments

Some WTO signatories, the US and Cairns countries for example, saw the creation of the Blue box as a stop gap mechanism which was required to conclude the URAA negotiations. Consequently the elimination of the Blue box is now an objective for some countries. Hence there are efforts by some in the current negotiations to limit Blue box and Green Box payments in the same way that Amber box payments are already capped.

However the EU takes a different view and would like to see the Blue box retained. The EU is keen to shift expenditure from the constrained Amber box - whose limits will probably be further reduced in any new deal - to the (currently) unconstrained Blue box and Green Box. Decoupling payments as part of the MTR process, thereby removing them from the Amber box, illustrates the strategy which the EU is pursuing.

If a WTO agreement does not transpire in the short term then implementation of the reform in 2007 would be less likely. It should be noted that the projections provided here extend to 2015. Hence, on the basis of a 2007 start date, the WTO reforms analysed under the WTO High and Moderate Scenarios would be almost, but not quite, complete by the end of the projection period. With a start date of 2007 it would be 2021 before the full schedule of export subsidy reductions would be complete under the WTO Low Scenario.

4.2 Baseline

The FAPRI-Ireland Baseline is developed primarily for analysis purposes and can be interpreted as the “control experiment” in the set of policy analysis “test experiments” (WTO Scenarios) conducted by FAPRI-Ireland.

It is important to note that the FAPRI-Ireland Baseline does not represent a forecast of what will develop over the next ten years. This is because the FAPRI-Ireland Baseline is conditioned on the key assumption that current agricultural and trade policies remain in place for a ten year period. We can, with near certainty, forecast that policy will change, and that our Baseline projections will not match future observed market outcomes. However, as noted above, the primary purpose of the Baseline projections are counter-factual; in order to be able to infer the impact of a given policy change on agriculture a counter-factual set of projections representing the likely outcome in the absence of the analysed policy change is necessary and this unchanged policy counter-factual is what the FAPRI-Ireland Baseline projections represent.

The FAPRI-Ireland 2005 Baseline is based on the continuation of agricultural policy (as currently defined) and the continuation of existing international agreements that regulate the conduct of agricultural policy and agricultural trade policy instruments. The 2005 FAPRI-Ireland Baseline agricultural policy is that defined by the Luxembourg Mid Term Review (MTR) Agreement of June 2003, while trade policy agreed under the Uruguay Round Agreement on Agriculture (URAA) is assumed to remain unchanged. The Baseline does not incorporate the recent reforms of the EU sugar regime; see Text Box 4-3.

Box 4-3: EU Sugar Reform

European Union agriculture ministers in November 2005 reached political agreement on a wide-ranging reform of the Common Market Organisation for sugar, based on the proposal tabled by the European Commission in June 2005.

Under the reformed sugar policy the guaranteed price for white sugar will be cut by 36 percent over 4 years. EU sugar beet farmers will be compensated for, on average, 64.2 percent of the price cut through a decoupled payment, this decoupled payment like those that resulted from the June 2003 of the CAP will be linked to the respect of environmental and land management standards and will form part of farmers' Single Farm Payment. Those countries which give up more than half of their production quota will be entitled to pay an additional coupled payment of 30 percent of the income loss for a temporary period of five years. A voluntary restructuring scheme will be established to provide incentives for less competitive producers to leave the sector. The intervention buying of surplus sugar production will be phased out after four years.

The current FAPRI-Ireland model's Baseline has not incorporated the impact of the November reforms on the production of sugar beet or its impact on the production of other arable crops in Ireland. Sugar and sugar beet are not part of the FAPRI EU GOLD model's commodity coverage and this limits somewhat our capacity to model the impact of the reform on EU arable crop production. Future research may examine in more detail the impact of the sugar sector reforms.

Under the Luxembourg Agreement, Member States were given a degree of freedom in how they implemented the decoupling of the direct payments that hitherto had been linked to production. The Luxembourg Agreement decoupled all direct payments associated with the CAP but allowed Member States to delay the introduction of decoupling (until 2007 at the latest) and to partially “recouple” certain proportions of the historic direct payments to production. Ireland choose not to recouple any of the historic direct payments to production, i.e. to fully decouple direct payments, and chose to introduce the decoupled Single Farm Payment (SFP) as early as possible (in 2005). By contrast France has chosen to fully utilise the freedom to recouple direct payments and to introduce decoupling at the latest date allowed for under the agreement (to start in 2007). Other Member States' choices lie between these two extremes.

The decoupled direct payment entitlements, established over the reference period 2000-2002, were transferred to a single payment – the SFP scheme - expressed in a payment per hectare of eligible agricultural land. Within the rules of the reform's implementation, different models for calculating farmers' SFP were allowed. In Ireland any given farmer's payments are based on that farmer's historical direct payment receipts, whereas in other Member States, such as Germany for instance,

single farm payments are paid on a flat per hectare basis to all farmers, with some differentiation in the flat area payment between arable land and pasture land.

The FAPRI-Ireland 2005 Baseline incorporates the differential Member State implementation of the reformed CAP allowed for under the Luxembourg Agreement. The expansion of the EU that occurred with the accession of 10 new Member States in May 2004 is also incorporated in the 2005 FAPRI-Ireland Baseline. Unless otherwise noted, all EU projections under both the Baseline and WTO scenarios refer to the expanded EU25. Under the Baseline and WTO scenarios, it is assumed that no further accessions to the EU take place beyond the current EU 25. Under the Baseline all of the provisions of the URAA are assumed to continue to hold over the projection period 2005 to 2015.

4.2.1 The importance of the Baseline when analysing trade reform

As noted earlier the primary purpose of the FAPRI-Ireland Baseline is analytical. It represents a projection of a future state of the world where policy as it currently exists continues unchanged. This projection is used a reference against which alternative states of the world, e.g. where agricultural or trade policy has changed, can be measured. However, the nature of the trade reform agreements and analyses of trade reform scenarios, means that baseline projections are often more important than simply as a means to implementing the “method of difference”. As Westhoff et al. (2004) note

Sometimes analysts will argue that baselines are not important, because what matters (or at least, what should matter) is the change from the baseline that results when an alternative scenario is implemented. While there are times when this is true, the particular provisions of many trade agreements mean that baselines matter, and they often matter a lot.

The importance of Baseline or reference scenarios can be illustrated when results of seemingly similar trade reform scenarios differ when implemented with similar models. The FAPRI-Ireland Baseline projections for EU beef markets (outlined in more detail in section 5.2) differ significantly from the baseline projections produced using the Organisation for Economic Cooperation and Development (OECD) AGLINK model (OECD-FAO, 2005). The projection for the EU beef market (over the period 2004 to 2014) from the FAPRI-Ireland model are characterised by increased internal EU prices, reduction in EU beef production (in response to decoupling), strongly increasing imports, reduced domestic use and reduced exports. The OECD-FAO Outlook (based on the AGLINK model) while projecting increased beef prices, declining production and increasing imports of beef into the EU, the OECD-FAO Outlook in contrast to the FAPRI-Ireland Baseline projects a more or less constant level of domestic use of beef in the EU and consequential large declines in exports of beef from the EU.

The European Commission (2005b) trade reform scenario analysis that was based on the OECD-FAO Outlook (2005) and its comparison with the FAPRI-Ireland Baseline illustrate the importance of the reference or baseline scenario projections in trade reform analysis.

The OECD-FAO (2005) projections for supply and use balance on the EU beef market differ significantly from those reported in this study. The projections of EU beef exports in the FAPRI-Ireland and OECD-FAO baselines diverge by approximately 240,000 mt in 2014, with the FAPRI-Ireland Baseline projecting the higher level of exports. This difference in baseline projections of beef exports means that the impact on EU beef markets of the elimination of export subsidies would also be expected to differ. *A priori* one would expect that the negative impact on internal EU prices due to a trade reform that eliminates export subsidies would be greater, the greater the level of baseline exports. This illustrates the point made by Westhoff et al. (2004) that Baselines matter, and that in trade reform scenarios baseline projections they are often central to understanding the impact of trade reforms on agricultural commodity markets.

4.3 WTO Scenarios

As noted earlier the definition of the three Scenarios analysed, the so-called “Low”, “Moderate” and “High” scenarios, were agreed in conjunction with the Minister for Agriculture and Food’s *WTO Consultative Committee* early in 2005. The definition of the scenarios does not represent a best guess of the ultimate outcome of the Doha WTO Round by FAPRI-Ireland, the Department of Agriculture and Food (DAF) or the Minister for Agriculture and Food’s *WTO Consultative Committee*. It

was, for the purposes of our analysis, necessary to clearly define the parameters of the policy change analysed. In so far as possible we sought to do this without being seen as leading the negotiation process. The *raison-d'être* of FAPRI-Ireland's analysis continues to be to examine the implications of possible policy changes rather than advocate any particular policy change that is examined.

Almost inevitably the scenarios analysed "differ" from what might be understood, at any point in time, to be the state of play in the WTO negotiations or the likely final outcome of the WTO Doha Round. The sixth WTO Ministerial in Hong Kong in December 2005 agreed on the elimination of all forms of export subsidy by 2013. This end date is earlier than that considered in any of the scenarios analysed in this paper. This outcome illustrates the speed with which developments can sometimes occur within the negotiations process. However, the parameters of the policy changes analysed in this paper that are described in full below, can still be compared with the status of the negotiations in the Doha WTO Round in early 2006. It is hoped that that the analysis of the impact of the three WTO scenarios will help inform the public debate concerning the impact on Irish agriculture of the policy changes proposed within the ongoing WTO Doha Round negotiations. Readers should note that none of the scenarios analysed are TRQ expanded. This is an area of continuing negotiation within the Doha Round and relates to negotiations on sensitive products (their number and the associated market access provisions) and the tariff cut bands. The European Commission (2005b) has examined a number of trade reform scenarios, some of which are similar to those described below, importantly however, their analysis has incorporated TRQ expansion within the market access provisions of their scenarios.

4.3.1 WTO Low Scenario

The changes under the three strands of domestic support, export competition and market access envisaged under the WTO Low Scenario are outlined in Table 4.1. Under the domestic support heading the AMS is reduced by 55 percent from the final bound levels under the URAA and both Green and Blue boxes are retained. Under the export competition heading, the EU, in the WTO Low Scenario, phases out its export subsidies in equal instalments over a period of 15 years. The level of export subsidisation that was allowed under the URAA represents the starting point of the reductions under the WTO Low and other WTO scenarios. The market access provisions under the WTO Low Scenario envisage a 36 percent average cut in tariffs, with products designated as being "sensitive" subject to a cut in average tariffs of 15 percent. For all of the scenarios analysed butter and beef are designated as sensitive products.

Table 4-1: WTO Low Scenario

Scenario	Domestic Support	Export Subsidies	Market Access
Low	55 percent reduction in the AMS based on the Uruguay Round final bound levels; retention of the Green and Blue Boxes	Phasing out of export subsidies in equal instalments over 15 years	36 percent average cut in tariffs, with 15 percent minimum cut in tariffs (to apply to sensitive products)

The sensitive product designation, under the scenarios analysed in this paper, is not associated with any other change in market access such as an expansion in associated TRQ. A recent proposal by the European Commission to WTO partners includes provision for the expansion of TRQ for products that are designated as sensitive so as to ensure that, even where sensitive product designation is assigned, the market access objectives of the Doha Round are achieved. Future analysis by the FAPRI-Ireland Partnership may analyse this dimension of the proposed trade reforms.

4.3.2 WTO Moderate Scenario

The WTO Moderate Scenario analysed differs from the WTO Low Scenario under the export competition and market access headings. Under the WTO Moderate Scenario summarised in Table 4-2, the EU phases out export subsidies more quickly than under the WTO Low Scenario. In the WTO Moderate Scenario the use of export subsidies by the EU is phased out over a ten year period

beginning in 2007. The phasing out occurs through a series of 10 linear cuts from the final year bound levels under the URAA. Under the market access heading the average cut in tariff is set at 50 percent in the WTO Moderate Scenario, with the cut in average tariffs applied to those products designated as sensitive set at 20 percent. As in the WTO Low Scenario, beef and butter are designated as sensitive products in our analysis, and this designation is not associated with any other changes in market access provisions. It should be noted that in this respect the analysis in this paper differs importantly from the analysis conducted by the European Commission using the OECD AGLINK model (European Commission, 2005b).

Table 4-2: WTO Moderate Scenario

Scenario	Domestic Support	Export Subsidies	Market Access
Moderate	55 percent reduction in the AMS based on the Uruguay Round final bound levels; retention of the Green and Blue Boxes	Phasing out of export subsidies in equal instalments over 10 years	50 percent average cut in tariffs, with a 20 percent minimum cut (to apply to sensitive products)

4.3.3 WTO High Scenario

The WTO High Scenario is the most extreme of the three WTO scenarios analysed and is the closest to the December 2005 position of the EU within the Doha Round negotiations (EU Trade Commissioner Mandelson’s Offer of the 28th of October). Under the WTO High Scenario, summarised in Table 4-3, the AMS is cut by 70 percent from the final year bound URAA levels. Under the export competition heading the EU phases out its export subsidies over the course of 10 years as under the WTO Moderate Scenario. However, under the WTO High Scenario 50 percent of the cut in export subsidies is front loaded to the first year (2007) with the remaining 50 percent phased out in equal instalments over the remaining 9 years. Under the market access headings a cut in average tariffs of 60 percent is implemented with the cut in tariffs applying to sensitive products set at 25 percent. As in the WTO and WTO Moderate Scenarios, beef and butter are designated as sensitive products and no other market access provisions are altered.

Table 4-3: WTO High Scenario

Scenario	Domestic Support	Export Subsidies	Market Access
High	70 percent reduction in the total Aggregate Measure of Support (AMS) based on Uruguay Round final bound levels with retention of Green and Blue Boxes	Phasing out of Export Subsidies over 10 years, with 50 percent down payment in year 1 and 9 years equal instalments thereafter	60 percent average cut in tariff lines, with 25 percent minimum cut (to apply to products designated as “sensitive”)

Importantly, as already noted earlier, the WTO High Scenario does not incorporate any expansion of TRQ. The EU has proposed TRQ expansion as a component of the market access pillar negotiations, however, the EU approach to TRQ expansion as well as its proposals on sensitive products were opposed by other WTO members. The market access and domestic support pillars remain the subject of negotiations which are supposed to be completed by the end of April 2006.

Under all of the Scenarios analysed the Green and Blue Box classification of current Government support to agriculture are retained and unaffected by the changes proposed.

5 Baseline Results

Under the Baseline the reforms to the European Union's CAP agreed in June 2003, known as the Luxembourg Agreement, are introduced. The differential implementation of the reforms across MS, allowed for under the Agreement, is incorporated in so far as the FAPRI-Ireland model disaggregates MS.² For example, France has chosen a minimalist implementation of the Luxembourg Agreement's decoupling provisions, whereas Ireland in contrast has decoupled direct payments to the maximum extent and at the earliest date allowed for under the Agreement. The expansion of the EU that occurred on the 1st of May 2004 is also incorporated.

In the following sections a brief overview of the projections under the current CAP regime are presented for each of the main commodity areas. These are followed by the projections for Irish agricultural intermediate consumption (input expenditure) and agricultural sector income (operating surplus). Under the Baseline there is no trade reform, i.e. the URAA continues as the "set of rules" that "govern" international agricultural trade, and EU agricultural policy as agreed in Luxembourg in June 2003 also remains in place. The macroeconomic projections discussed in Section 3, particularly the projected US dollar versus euro exchange rate, play a very important role in determining the nature of the interaction of EU and world markets under both the Baseline and the Scenario.

5.1 Cereals (Baseline Results)

Under the Baseline, world commodity markets are projected to be characterised by relatively buoyant prices when considered in US dollars. Strong economic growth, particularly in Asia, but also in the Europe and North America, leads to increased demand for cereals both for human consumption and as an animal feed. When compared with 2004, world prices by 2015, when denominated in US dollar terms, are projected to be 8 percent higher for wheat and almost 12 percent higher for barley. However, the projected depreciation of the US dollar against the euro means that world prices for wheat and barley when expressed in euro are, by 2015, projected to be 6 percent and 3 percent lower than the levels observed in 2004. These world price developments imply that, under the Baseline, some export subsidies are still required for most grain exports from the EU to world markets

EU wheat and barley prices, which largely determine Irish wheat prices, are projected in nominal terms to be largely unchanged over the projection period, remaining close to intervention levels. The Baseline level of Irish feed wheat prices in 2015 is projected to be largely unchanged from the level in 2004, while Irish feed barley prices are projected to be up over 13 percent from the low levels observed in 2004.

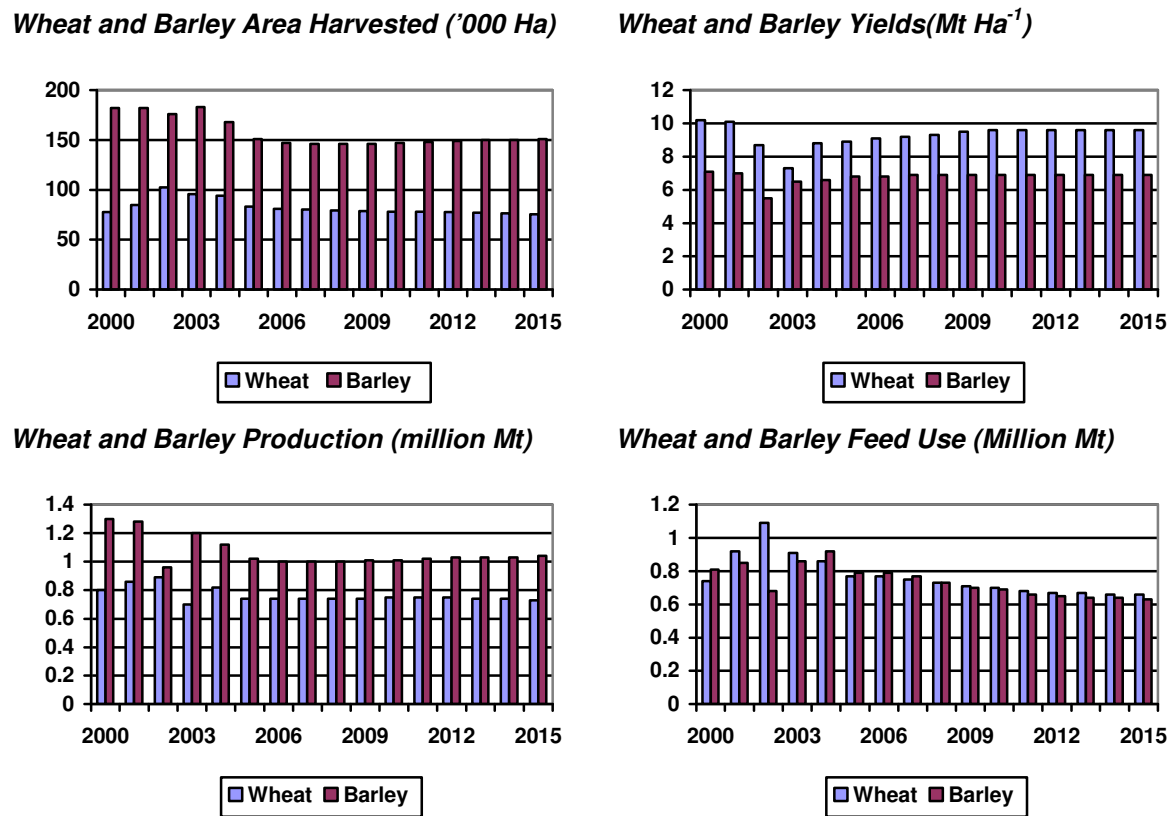
In the Baseline, cereals area harvested in Ireland declines as the arable payments that were previously linked to the cultivation of arable crops such as soft wheat and barley are now fully decoupled from production. Total wheat area harvested in Ireland declines, by over 18 percent while total barley area harvested is projected to decline by approximately 12 percent between 2004 and 2015.

Over the projection period yields for cereals are projected to increase. For the period 2004 to 2015 yields per hectare in Ireland are projected to increase by approximately 10 percent for soft wheat and 4 percent for barley. These increases reflect the trends observed historically in crop yields and are also the result of less productive land moving out of cereals which increases average per hectare yields of the remaining land.

The projected changes in production of soft wheat and barley are not as dramatic as the changes in area harvested, as improved yields offset the projected declines in area harvested. By 2015 soft wheat production in Ireland is close to over 710 thousand tonnes, this is 10 percent less than production in the 2004/2005 season. Irish barley areas harvested have not been as volatile as wheat areas. By 2015 total production is projected at 1,031 thousand tonnes, this represents a decline of approximately 9 percent from the level observed in 2004.

² The FAPRI EU GOLD model disaggregates Ireland, Italy, France, Germany, the UK, Hungary and Poland. Other MS are modelled in two groups the first comprising the remaining "old" MS and the second the eight remaining "new" MS of the EU.

Figure 5-1: Irish Wheat Production, Yields and Use (Baseline)



FAPRI-Ireland Model (2006)

Overall the large declines in area harvested and in yield are reflected in large declines in the value of output produced by the Irish cereal sector. Under the Baseline the value of cereal output at producer prices is projected to decline by more than 19 percent between 2004 and 2015.

5.2 Beef (Baseline Results)

The decoupling of direct payments under the Luxembourg Agreement is projected to have a significant impact on Irish livestock production under the Baseline (i.e. in the absence of further agricultural policy or trade policy reform). Earlier FAPRI-Ireland analyses (Binfield et al., 2003a, 2003b and 2003c) analysed the impact of the most recent CAP reform versus a Baseline of Agenda 2000 agricultural policy and indicated that the decoupling of direct payments would lead to substantial reductions in the Irish suckler cow herd and in Irish beef production. The results described below also project substantial declines in the Irish suckler cow herd. The analysis does however differ from earlier FAPRI-Ireland analyses in that the decoupling decisions by other MS differ from the full decoupling decision made by Ireland. Decisions by MS such as France to decouple to the minimal extent allowed under the June 2003 CAP reform, mean that the negative short run price impact on EU markets projected in earlier analyses is not as large in the current Baseline. However, as a consequence of the partial decoupling options chosen by some MS and the associated lesser supply impact of the reforms, over the projection period, the positive price impact of the MTR on EU beef prices projected in earlier analyses is moderated.

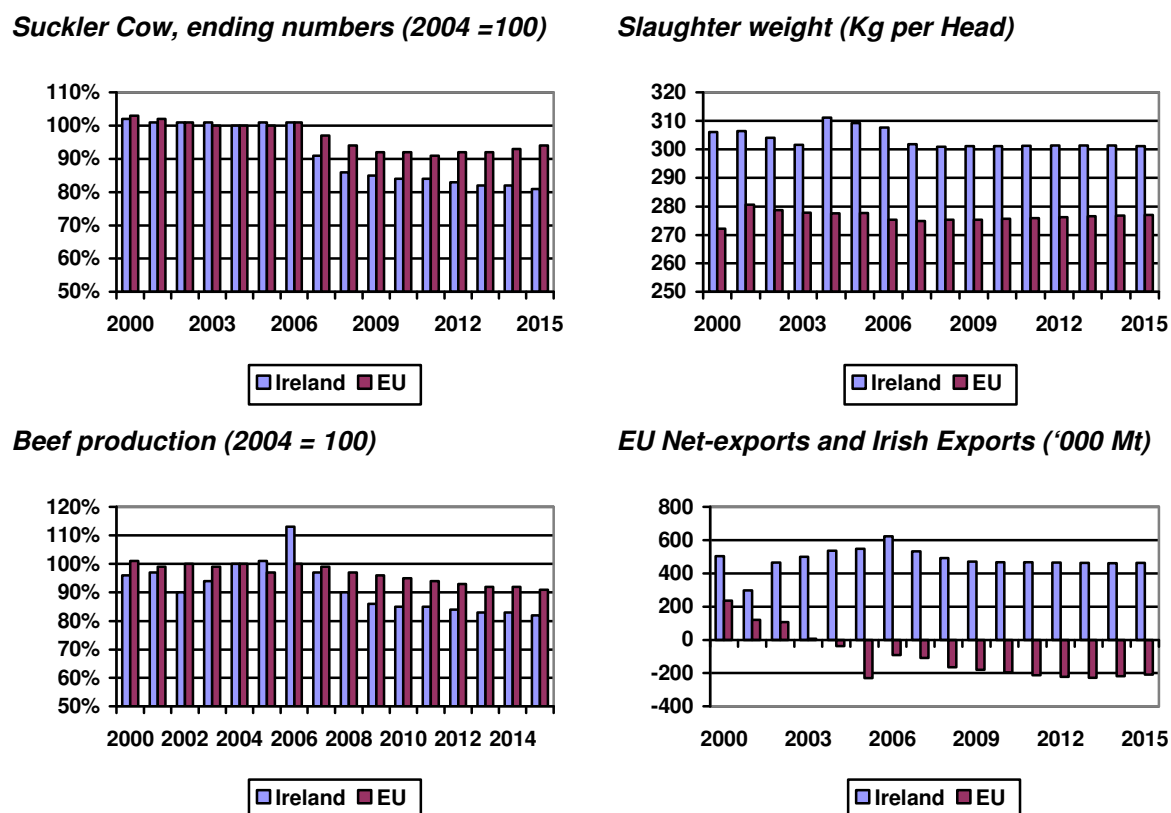
Prices for meats on world markets under the Baseline are projected to decline by over 15 percent in dollar terms due to strong growth in supply from South American producers among others. The weak path of projected prices in US dollars, when converted into euro prices, means that export subsidies continue to be necessary to sell EU beef on non-EU markets.

The full decoupling of direct payments in Ireland under the current Baseline is projected to lead to a decline of 19 percent (between 2004 and 2015) in the beginning numbers of suckler cows in Ireland. Ongoing improvements in milk yields (in the context of a continuing milk quota), also leads to a

projected decline in numbers of dairy cows. Over the projection period, 2004 to 2015, Irish dairy cow number decline by approximately 14 percent. The greater decline in the Irish suckler cow herd over the projection period also leads to a decline in the share of the Irish cow herd accounted for by beef breeds and this is reflected in a 3 percent decline in average slaughter weight. The decline in total cow numbers and declining slaughter weights are reflected in a decline in the volume of Irish beef production. Over the period 2004 to 2015 Irish production of beef is projected to decline by over 18 percent.

While the overall EU suckler cow herd does not decline by the same proportion as the Irish suckler cow herd, some contraction is projected to occur under the reformed CAP over the Baseline projection period. Total EU suckler cow numbers are projected to decline by approximately 6 percent. Declining suckler cow numbers, when combined with declining dairy cow numbers, and declining average slaughter weights leads to a contraction in EU beef production of approximately 9 percent by 2015.³

Figure 5-2: EU and Irish Cattle and Beef Projections (Baseline)



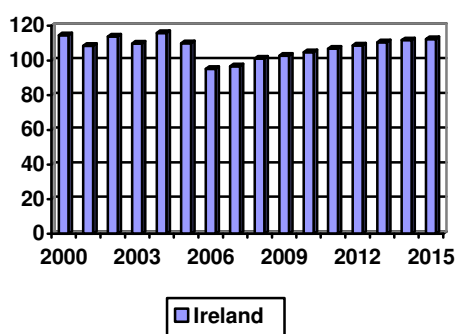
FAPRI-Ireland Model (2006)

The contraction of EU indigenous beef supply leads to increases in EU beef prices over the projection period and increases in EU imports of beef. EU beef prices are projected to increase by 11 percent over the period 2004-2015 while EU imports of beef increase by over 22 percent. EU exports over the same period are projected to contract by almost 10 percent. By the end of the projection period the EU is a significant net importer of beef with total imports exceeding total exports by over 200,000 tonnes. In response to increased prices and reflecting the long run trend of reduced per consumption of red meats, EU25 per capita consumption of beef, under the Baseline, is projected to decline by 8 percent. In the EU10 income growth is sufficient to reverse this projection with per capita consumption increasing by almost 3 percent.

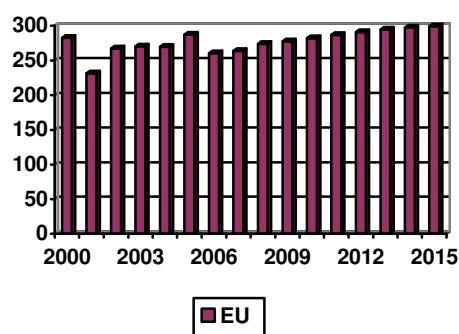
Figure 5-3: Irish and EU Cattle Prices (Baseline)

³ A significant factor in the apparent discrepancy between the decline in the numbers of cows and beef production is accounted for by the ending of the Over Thirty Month Scheme in the UK. This leads to a significant increase in the volume of beef that is produced for human consumption in the UK.

Irish Cattle Reference Price (€uro/100Kg)



EU R3 Price (€uro/100Kg)



FAPRI-Ireland Model (2006)

With EU prices increasing due to a tighter internal supply and use balance, Irish prices increase after first falling due to increased supplies of beef that arise due to the slaughter of cows and heifers. The Baseline Irish beef price in Ireland in 2015 is projected to be 3 percent lower than the price level observed in 2004 which when compared with 2003 was a “good” year in terms of farm gate cattle prices. Due to the reduced volumes of beef production under the Baseline and beef prices that at best struggle to maintain their value in nominal terms, the value of output from the Irish beef sector over the Baseline period declines. In 2015 the value of output produced by the sector is projected to decline by almost 17 percent compared to the 2004 level.

As noted in section 4.2.1 the FAPRI-Ireland Baseline outlook for the EU beef market differs in important respects (volume of beef consumed in the EU and volumes exported with subsidy) from baselines produced by other models such as the OECD-FAO Outlook (2005). These differences in Baseline outlook are largely driven by differing projections for per capita consumption of beef in the EU15 and EU10. The OECD-FAO Outlook projects that EU10 per capita consumption of beef increases by almost 12 percent between 2004 and 2014 and EU15 contracts by approximately 4 percent, while in contrast, the FAPRI-Ireland Baseline projects EU10 per capita consumption growth of less than 3 percent and a decline in EU15 per capita consumption of almost 9 percent over the same period. These differences are reflected in the OECD-FAO and FAPRI-Ireland projections for the evolution of EU beef exports over the period 2004-2014. The OECD-FAO Outlook projects EU exports that contract by 43 percent while the FAPRI-Ireland Baseline projects a contraction of only 11 percent.

5.3 Sheep (Baseline Results)

Under the Baseline, the decoupling of all direct payments is projected to lead to a further decline in the Irish ewe flock. Ending numbers of ewes in Ireland are projected to be over 18 percent lower in 2015 than in 2004. The projected decline reflects the well established trend observed since the early 1990s. This decline has been linked to the increased prevalence of part-time farming systems which are seen as largely incompatible with the perceived labour intensity of sheep production systems. Additionally changes in the supports paid to hill farmers have reduced the incentive to place sheep on upland commonages. The decoupling of the ewe premium under the Luxembourg reforms accelerates the decline that has been ongoing since the late 1990s.

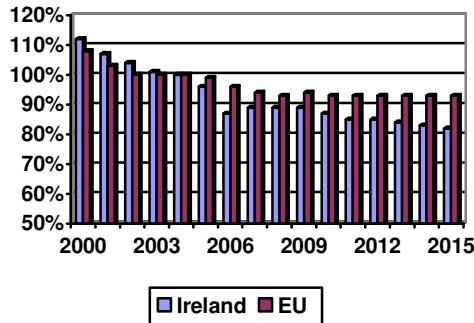
The reduction in the Irish ewe flock is reflected in reduced Irish lamb production that declines by over 21 percent over the projection period. EU lamb production also declines but by a much lesser amount. By 2015, under the Baseline, EU lamb production is approximately 3 percent less than the level in 2004.

The Baseline reduction in indigenous EU supplies of lamb, as in the beef sector Baseline, leads to an increase in EU and Irish lamb prices. The increases in lamb prices are larger than the increases projected in the beef sector. Over the period 2004 to 2015 EU prices are projected to increase by over 13 percent and Irish prices increase by over 14 percent. This large increase occurs because while imports of lamb into the EU increase (by 2015 they are projected to be approximately 14 percent than in 2004), the growth of lamb imports beyond the existing TRQ amounts is only 11 percent. This

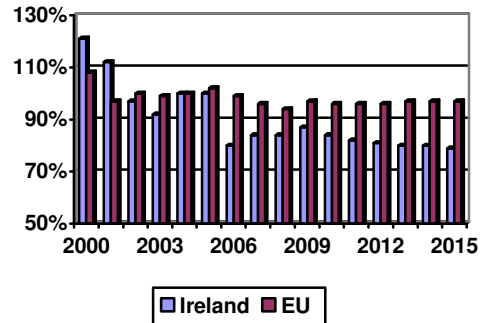
contrasts with the more dramatic growth in EU beef imports, which by 2015 are projected to be over 200 percent larger than the EU beef TRQ.

Figure 5-4: EU and Irish Sheep Production, Trade and Prices (Baseline)

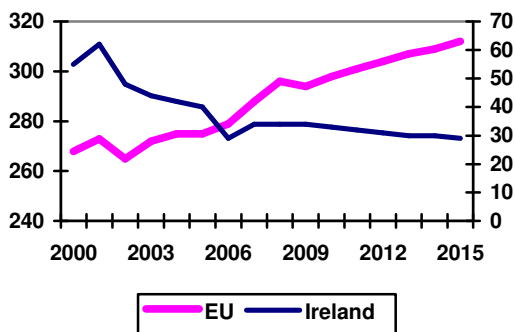
EU & Irish Ewe Flocks (2004=100)



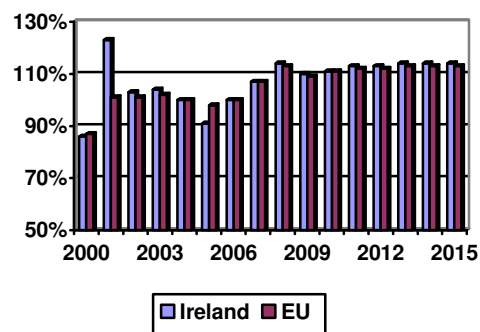
EU & Irish Lamb Production (2004=100)



EU Lamb Imports & Irish Lamb Exports



EU and Irish Lamb Price (2004=100)



FAPRI-Ireland Model (2006)

Over the Baseline period, the impact of reduced volume of lamb production in Ireland on the value of the sector's output is offset somewhat by the increased prices and by some increases in lambs per ewe. Total value of the output from the Irish sheep sector in 2015 is projected to decline by over 5 percent from the value of output from the sector observed in 2004.

In the lamb sector out of TRQ tariff rates have been high enough until now to prevent the import of any lamb paying the full tariff. However, recent years have seen an expansion of beef imports from South America that pay the full tariff. The increased supply of beef from non-EU suppliers has led to lower EU internal prices. The FAPRI-Ireland model treats beef as a homogeneous commodity, which increasingly beef, as traded internationally, is not. Most of the beef shipped from South America to the EU is composed of higher valued cuts. A recent paper by Bureau, Ramos and Salvatici (2005) shows how TRQ mechanisms when combined with high out-of-quota tariffs lead to increases in the quality of the beef shipped from Mercosur countries to the EU. Increases in volumes of higher value cuts on the EU market have a greater impact on the average internal EU cattle carcass price than an equivalent increase in lower quality meat.

5.4 Pigs (Baseline Results)

EU pig prices are not projected to increase over the medium term. Over the projection period continuing growth in pig meat production and the strong euro exchange rate moderate pig prices. The sector is projected to experience only modest growth over the medium term and the EU breeding herd is projected to stabilise at a level close to 160 million, including about 30 million sows from the NMS.

While the EU breeding herd will contract by about 3 percent over the projection period, increases in slaughter weights and piglets per sow will ensure that overall pig meat production actually increases by about 5 percent by the end of the projection period. Growth in domestic consumption of pig meat

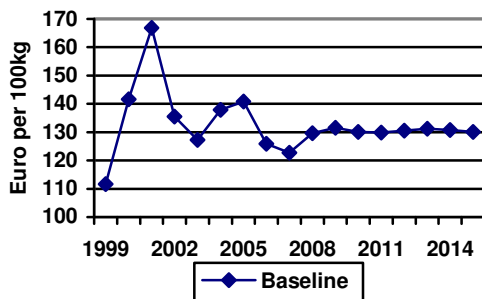
will track increases in production quite closely and growth in EU exports of pig meat will be limited to about 5 percent over the Baseline projection period.

The medium term projection is for EU and Irish pig prices to remain relatively stable and close to the average levels recorded in the last couple of years. There was a further contraction in the Irish breeding herd in 2004 in line with the trend in the last couple of years. Over the longer term, the absence of increasing prices is projected to prevent any expansion in the breeding herd. Irish pig meat production should grow by a modest amount over the projection period (up 5 percent relative to the low2003 level) with increased sow productivity and a slight increase in slaughter weight.

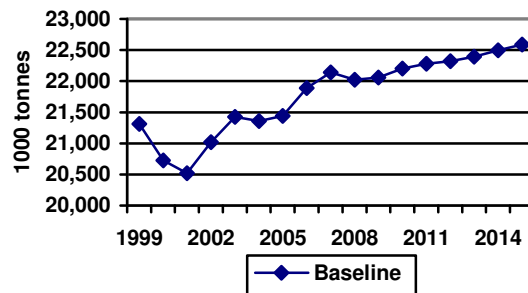
Over the medium term Irish pig meat consumption, on a per capita basis, is projected to stabilise. However, consumption will increase in aggregate terms by 14 percent due to projected growth in the Irish population. Exports are projected to grow by about 10 percent over the projection period. The recent trend of increased imports of pig meat is set to continue.

Figure 5-5: EU and Irish Pig Production and Prices (Baseline)

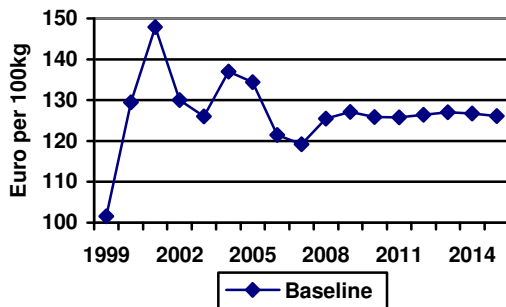
EU Pig Price



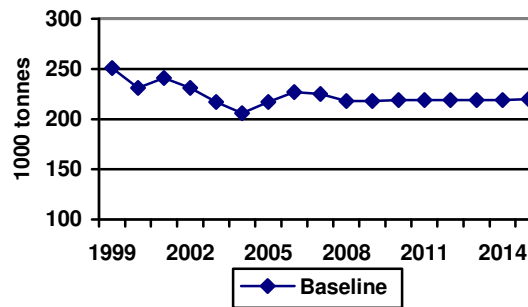
EU Pig meat Production



Pig Prices: Ireland



Pig Meat Production : Ireland



FAPRI-Ireland Model (2006)

5.5 Dairying (Baseline Results)

The Baseline outlook for international dairy markets is quite positive in terms of price prospects in dollar terms. Growing international demand for dairy products is projected to outstrip increases in milk supply and, over the projection period, prices for the main dairy commodities should increase substantially when measured against the relatively low prices recorded in 2004. Increases in world prices are projected to be stronger in the case of butter, cheese and skinned milk powder (SMP) than in the case of whole milk powder (WMP).

However, these relatively buoyant world price levels appear more modest when expressed in euro terms due to the projected weakening of the US dollar through the projection period. In euro terms, Baseline 2015 cheese and butter prices are projected to have increased by 18 percent relative to 2004. The world price increase for SMP over the same period is projected to be more modest at 11 percent. In euro terms world prices for WMP are projected to fall. While these 2015 prices may, on first examination, appear high, they are still marginally below the prices achieved for butter and cheese in 2001, and well below the 2001 prices in the case of powders.

EU Milk production is projected to decrease by about 2 percent under the Baseline, although it is projected to remain about 2 million tonnes above milk quota levels by 2015. Milk yields in the EU25 increase at a greater rate than in the EU15, reflecting the expected higher percentage growth in milk yields in the NMS.

Reflecting the reduction in support for intervention prices, in the Baseline there is some change in the EU dairy product mix. EU cheese production will increase by close to 1 percent per year, amounting to an increase of about 9 percent over the period 2004 to 2015. Growth in domestic cheese consumption is of similar magnitude. Imports increase at a greater rate than exports, and overall therefore, there is some increase in cheese stocks over the Baseline projection period.

EU butter production declines by 7 percent over the period 2004 to 2015. Domestic consumption of butter falls by close to 3 percent and therefore the supply demand balance requires a reduction in both exports (13 percent) and stock levels (56 percent). Over the projection period, EU SMP production declines by 24 percent. The reduction in EU SMP domestic use is more modest at 10 percent. There is a substantial decline in exports and stock levels (almost 70 percent in both cases). Changes in EU WMP production are largely confined to reduced levels of production (17 percent) and exports (26 percent).

In common with other MS, much of Ireland's milk production volume increase that was granted under CAP reform is eroded over time by subsequent increases in butterfat content in the milk delivered. Milk yields increase at a rate of just over 1 percent per annum over the period to 2015 with a corresponding decline in dairy cow numbers over the same period.

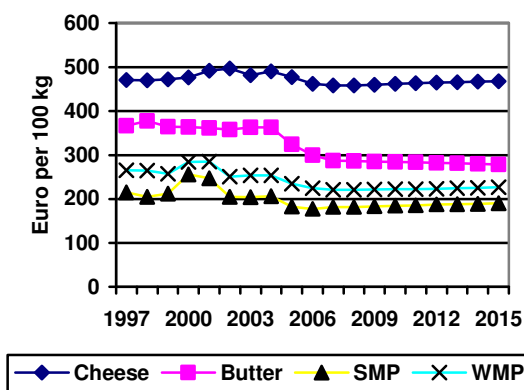
Despite the MTR related reduction in dairy product support prices in 2005, the seasonality of Irish milk production partially insulated the sector from the decline in dairy product prices which occurred later in the year. Strong international demand also affected the market situation so that overall, the decline in milk price over the last 12 months is lower than what would have been expected.

Reflecting the reduction in support for the intervention products, Irish cheese production is projected to grow under the Baseline reaching a level of 130 thousand tonnes by the end of the projection period. This represents an increase of 17 percent on the 2004 figure. By contrast production of butter declines, as does the Irish production of SMP. Without investment in new processing facilities or moves to reduce the seasonality of milk production, the potential for change in product mix of the Irish dairy industry will be limited.

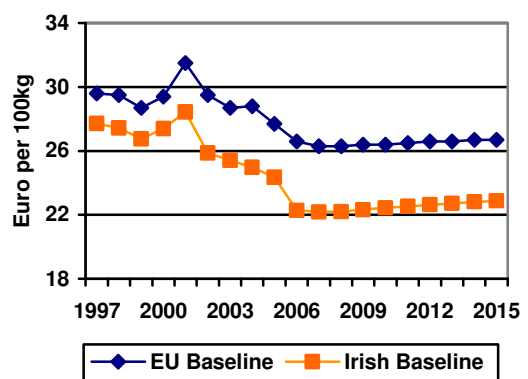
Population growth in Ireland (now projected to run at about one percent a year) will bolster domestic use of butter and liquid milk, where per capita consumption is relatively static. Irish cheese consumption is projected to continue to increase throughout the projection period. The considerable divergence in reported levels of Irish cheese consumption, from various sources, makes it more difficult to project the full extent of this growth.

Figure 5-6: EU and Irish Dairy Product and Milk Prices

EU Dairy Product Prices: Baseline



EU and Irish Milk Price Baseline



FAPRI-Ireland Model (2006)

The Baseline projection is for EU and Irish milk prices to decrease over the next couple of years as the remainder of the CAP reforms for the dairy sector are implemented. Much will depend on the international market situation and the attitude of the European Commission towards the provision of export refunds. The Irish milk price, under the Baseline, is projected to decline to about 21.6 euro per 100 kg (101 cents per gallon) by 2007. However it is projected that prices will recover to a level of 22.9 euro per 100 kg (106 cent per gallon) by 2015. These price projections, by the end of the projection period, would represent a decrease of over 8 percent on the milk price in 2004. By 2015 the value of Irish milk output is projected to be almost 15 percent lower than in 2004.

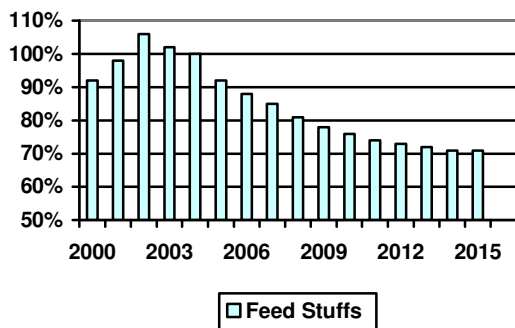
5.6 Intermediate Consumption & Operating Surplus (Baseline)

Under the Baseline, due to declining levels of agricultural activity, particularly in the dry stock sector, utilisation of input items would be expected to contract. Expenditure on agricultural inputs in Ireland declines over the Baseline projection period. However, the decline in expenditure and volumes of inputs used is moderated by exogenous increases in some input prices due to forces outside of agriculture (e.g. energy prices).

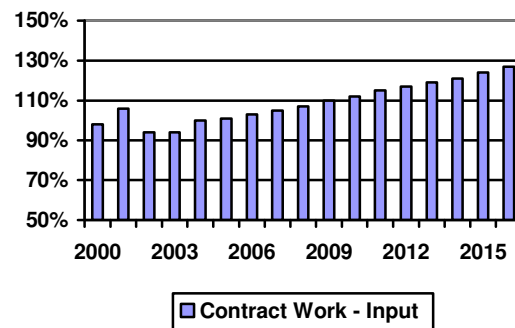
The contraction in the numbers of ruminant animals leads to reduced expenditure on feed stuff which by 2015 is projected to be 30 percent lower than in 2004. This reduced expenditure on purchased feeds is offset by increased spending on other inputs such as forage plants (up 2 percent) and services of agricultural contractors (up by 24 percent). Increased expenditure on these two items reflects the projected increase in the share of total agricultural area that is devoted to hay and silage, general inflationary pressures in the economy and the increased prevalence of part-time farming. As part-time farming systems become more prevalent some activities previously undertaken with own labour are contracted out. Exogenous projections for increased energy prices lead to increases in the projected energy expenditure under the Baseline. Over the period 2004 to 2015 expenditure on energy by the sector as a whole is projected to increase by approximately 14 percent.

Figure 5-7: Selected Irish Input Items and Total Intermediate Consumption (Baseline)

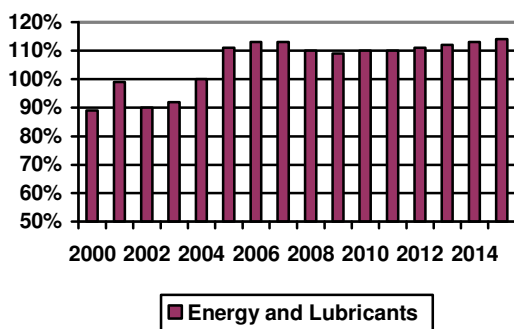
Feeding stuffs expenditure



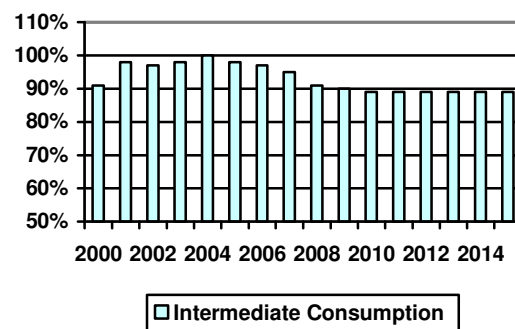
Contract work – input expenditure



Energy and Lubricants expenditure



Intermediate Consumption



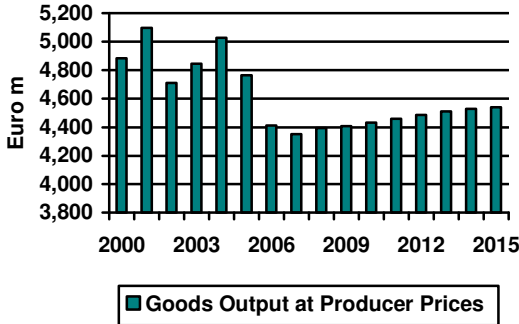
FAPRI-Ireland Model (2006)

Under the Baseline, overall intermediate input expenditure declines by almost 11 percent between 2004 and 2015. When combined with total direct payment receipts that are largely maintained in

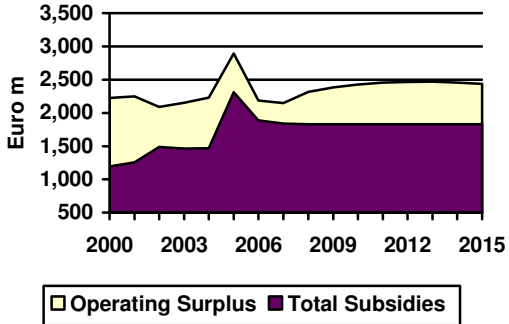
nominal value over the projection period,⁴ and a decline in the value of agricultural output sold off the farm (gross agricultural output at producer prices) of 10 percent, income arising in agriculture (so-called Operating Surplus) in 2015 is projected to be approximately 10 percent higher than the level observed in 2004. As illustrated in Figure 5-8 total subsidy receipts in agriculture (including the Rural Environmental Protection Scheme (REPS)) remain a crucial component of agricultural sector income.

Figure 5-8: Irish Good Output at Producer Prices and Operating Surplus

Goods Output at Producer Prices



Operating Surplus and Total Net Subsidies



FAPRI-Ireland Model (2006)

6 WTO Scenario Results

In this section we discuss the results of the analysis of the three WTO Scenarios (Low, Moderate and High) that were defined in section 4 of this paper. Most of our discussion concentrates on the results of the WTO High Scenario. The results of our analyses of the WTO and WTO Moderate Scenarios are discussed in section 6.7. The appendices to this paper contain full details of all of the results of the scenarios analysed.

The decision to concentrate our discussion on the WTO High Scenario is based on the degree to which the WTO High Scenario rather than either the WTO or WTO Moderate Scenarios approaches the current negotiating position of the EU. The sixth WTO Ministerial in Hong Kong ended with an agreement that all forms of export subsidisation would be eliminated by 2013. The exact schedule of the elimination has not yet been specified but there was a commitment to eliminate a substantial share of the subsidies by 2010. EU Agriculture Commissioner Marion Fischer-Boel has stated that any schedule agreed cannot lead to further CAP reform prior to 2013.

Negotiations on market access and domestic support pillars will continue with a deadline of April 2006. An outcome from the ongoing negotiation process surrounding domestic support and market access provisions necessitating further internal CAP reform cannot be ruled out. If this were to occur the impacts of such an outcome to the negotiating process would be more extreme than the impact of the reform analysed in the WTO High Scenario. Future FAPRI-Ireland analysis will seek to evaluate such proposals as they emerge from the negotiations process.

The WTO High Scenario is the most extreme of the three scenarios analysed by the FAPRI-Ireland team based at the Rural Economy Research Centre and the University of Missouri. The WTO High Scenario implies changes in domestic support, export competition, and market access that were defined in section 4. As noted in section 2, the analysis conducted examines the impact of unilateral changes in EU trade instruments and associated domestic support arrangements and takes no account of the impact of changes in the agricultural policy and trade rules of other countries that would be participants in a multilateral agreement under the Doha Round. Such changes in policy would be expected to have impacts on world agricultural commodity markets and a successful Doha Round would also have implications for wider economic growth and economic development.

⁴ Subsidies include the Single Farm Payment, REPS and forestry subsidies. These are projected to increase due to the increase in compensation to dairy farmers associated with dairy intervention price reductions, increased participation in REPS and increased farm forestry subsidies.

The global economic impact of a Doha Round Agreement on all economic activity cannot be addressed by partial equilibrium models such as those used by FAPRI and the FAPRI-Ireland group and is more amenable to analysis using CGE models.⁵ The former issue of the multilateral impact of an Agreement on agricultural commodity markets would require simulations using the entire FAPRI world agricultural commodity market modelling system. The scenario analysed, which examines the impact of the WTO reform scenarios on EU agricultural and agricultural trade policy alone, has an impact on world commodity markets due to the large role played in many of these markets by the EU. Since under the WTO High Scenario the multilateral nature of the reform has not been analysed, the price impacts at a world commodity market level represent lower bounds of the world price impacts that could be expected to flow from a multilateral reform such as those being contemplated in the Doha Round negotiations.

The WTO High Scenario analysed assumes that both butter and beef are classed as sensitive products and additionally that no changes to TRQ associated with this designation arise. One of the suggested solutions to the current negotiating issues relating to the designation of products as sensitive is that there would be increases in the associated TRQ so as to ensure liberalising market access outcomes. In our analysis we have not expanded the TRQ associated with either beef or butter. Analysis conducted by the European Commission using the OECD AGLINK model examined a scenario similar to the WTO High Scenario but which incorporated expansion of TRQ along the lines proposed in the EU WTO negotiation offer of October 2005 (EU, 2005a). The results of the scenario analysis published by the European Commission differs importantly from that described below due in part to the incorporation of changes in TRQ levels and due to differences in the baseline outlook for EU beef market balance used. These were discussed in sections 4.3.1 and 5.2. Future work by FAPRI-Ireland may examine the impact of expanded TRQ within the context of an alternative WTO reform scenario to those analysed in this paper.

6.1 Cereals (High Scenario Results)

Under the WTO High Scenario, cuts in export subsidies and the reductions in the tariff protection afforded to EU grain markets, leads to slightly lower internal EU prices for all of the major grains than under the Baseline. As in other sectors, the results of the WTO reform scenario analysed are sensitive to the projected development of the US dollar/euro exchange rate. Under the WTO High Scenario EU prices decline in nominal terms relative to the Baseline. EU wheat prices are projected, by 2015, to be 2.5 percent lower than under the Baseline, while EU barley prices are also projected to be about 2.5 percent lower.

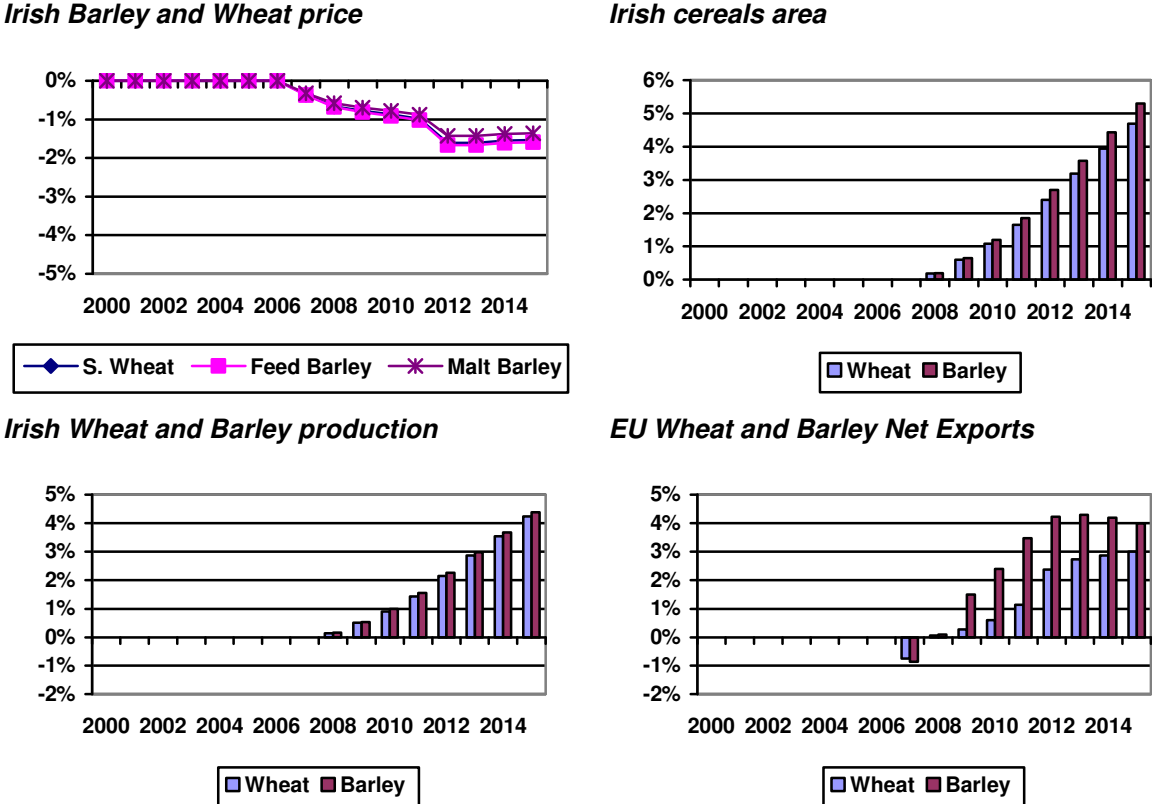
By 2015, under the WTO High Scenario, with increased world prices and lower internal EU grain prices as a result of the trade reforms, EU soft wheat is almost entirely exported without use of export subsidies. Relative to the Baseline, volumes of wheat exported from the EU increase under the WTO High Scenario by 1.5 percent, by 2015, when compared with the level under the Baseline. The share of barley exports that are exported with subsidy also declines dramatically, so that by 2015 almost all barley exports are exported without subsidy. As was the case with soft wheat, the increased price competitiveness of barley leads to an increase in EU barley exports of over 3 percent by 2015 when compared with the levels projected under the Baseline. Exports of grains from the EU25 increase, despite the reduction of export subsidies, due to the lower prices that reduce internal EU cereal prices to world price levels. This reduction in internal EU prices in part results from a fall in demand for cereals for feed in the EU as the livestock sector contracts. Reductions in bound tariffs for the cereals sector are assumed not to lead to an increase in imports given that the tariff rates are high and cereals prices are closer to their world market counterparts than most of the other commodities.

Reduced EU grain prices are reflected in lower Irish grain prices with the Irish soft wheat price 1.5 percent lower and barley prices approximately 2 percent lower, under the WTO High Scenario than their Baseline levels by 2015. This decline in cereal prices does not lead to a decline in the area harvested or in cereals production in Ireland. The small magnitude of the price change projected for cereals when compared with those projected for other agricultural commodities such as beef, lamb and milk increases the relative returns from cereals. This projected improvement in the relative returns

⁵ In general CGE models are unable to provide analysis at the level of detail provided by partial equilibrium models such as the FAPRI-Ireland model. See van Tongeren et al. (2001) for further discussion of the merits and demerits of general equilibrium approaches and partial equilibrium approaches to modelling the impact of agricultural policy change.

to cereals leads to a small increase in the area of agricultural land devoted to cereals. In the WTO High Scenario Irish wheat area is, by 2015, approximately 5 percent higher than under the Baseline. Irish barley area is also increased relative to the Baseline, by approximately 5 percent. When compared with areas historically harvested both wheat and barley areas harvested are still significantly below the levels observed in 2004.

Figure 6-1: WTO High Scenario Impact: Percentage Change vs Baseline



FAPRI-Ireland Model (2006)

Total use of cereals in Ireland declines under the scenario largely because of the impact of the WTO reform scenario on feed use by the Irish livestock sector. With slightly increasing production, and reduced domestic use, total imports of barley into Ireland are projected to be 15 percent lower under the WTO High Scenario than under the Baseline. Soft wheat imports are, by 2015 projected to be down approximately 6 percent relative to the Baseline.

The total value of cereal sector output increases slightly under the WTO High scenario relative to the Baseline because of the slightly higher volume of production that arises due to the increase in area of cereals harvested. As noted above the increased Irish cereal area under the WTO High Scenario is due to the increase in cereals prices relative to other agricultural output prices. By 2015, under the scenario, the value of the Irish cereals sector, at €154m, is approximately 3 percent up on the projected value of the sector under the Baseline.

6.2 Beef (High Scenario Results)

The elimination of export subsidies and the reductions in the tariffs that are part of the WTO High Scenario have a significant impact on the EU and Irish beef sectors. As export subsidies are eliminated and import barriers are lowered, beef that had been exported with subsidy under the Baseline (in 2015 amounting to 463 thousand tonnes or 6 percent of production) must find an internal EU market. Thus the elimination of export refunds lowers internal EU prices and reduces the attractiveness, *ceteris paribus*, of the EU market to exporters from outside the EU. By 2015, with export subsidies eliminated and tariff levels reduced by 25 percent EU beef prices are almost 10

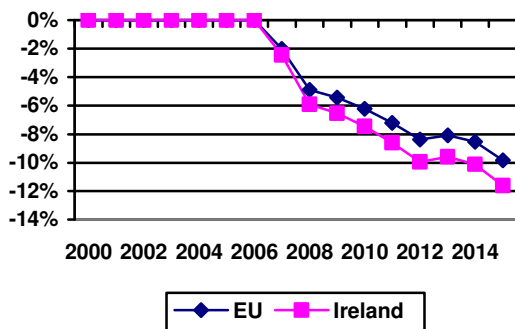
percent lower than they would be under the Baseline where no reform of agricultural trade rules occurs.

The designation of beef as a sensitive product within the WTO High Scenario provides some measure of continued tariff protection to EU beef markets. Nevertheless, the elimination of export subsidies causes a significant reduction in internal EU prices and in EU production of beef. Under the WTO High Scenario EU net imports of beef in 2015 are projected to be over 150 percent higher, with the vast bulk of the increase in net imports due to the virtual collapse of EU beef exports that occurs with the elimination of export refunds.

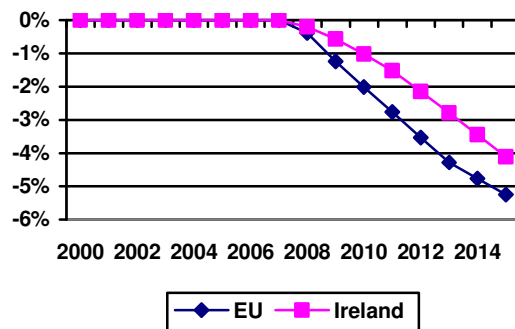
With the decline in internal EU prices and an increase in world prices due to the large contraction in EU beef exports, supplies of beef, which under the Baseline, were exported with subsidy are now consumed within the EU market. This means that by 2015 the volume of beef that is imported into the EU from the rest of the world, under the WTO High Scenario, is only marginally greater than that projected under the Baseline. This result may appear counter-intuitive but is a consequence of the impact on EU beef price of the elimination of export subsidies when combined with the 25 percent reduction in the tariffs applied to beef imports. Under the WTO High Scenario, the large volume of beef production previously exported from the EU with subsidy is absorbed on the EU market. Under the WTO High Scenario imports of beef into the EU increase, but that increase is marginally smaller than the increase projected under the Baseline where exports of beef from the EU are still subsidised.

Figure 6-2: EU and Irish Beef Prices and Production: Percentage Change vs Baseline

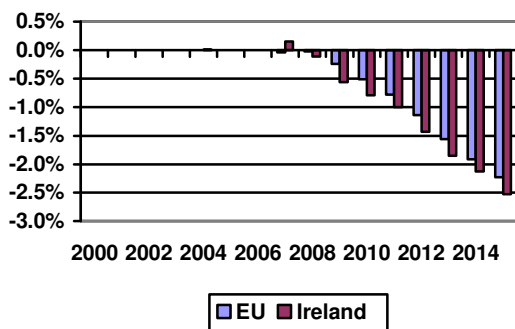
EU and Irish prices



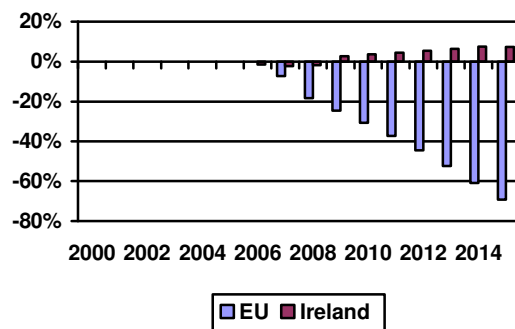
Suckler cow herds



Beef production



EU & Irish Beef Exports



FAPRI-Ireland Model (2006)

Note that this is not suggesting that reducing tariffs have no effect on imports, rather in the case where beef is treated as sensitive and combined with an elimination of export subsidies, imports do not increase significantly. As noted above the heterogeneous nature of beef and complexity of tariffs mean that it is difficult to model the impact of tariff reductions. Tariffs on beef as calculated as ad valorem equivalents (AVE) for the purposes of the Doha round showed very high tariffs, typically close to 100 percent, and therefore a 25 percent reduction is likely to have little effect on the bulk of beef produced and traded. Given the difficulty all faced by all modellers in capturing the complexity of tariff lines and their reform in homogenous goods models it cannot be ruled out that even a small reduction

in tariffs could result in an expansion of imports in some cuts of meat that could turn out to be significant.

Analysis published by the European Commission (2005b) projects a much larger increase in the volume of beef imports into the EU than that projected in this analysis. Two issues are important in understanding the reasons for this difference. The first relates to the reference or “baseline” scenario’s supply and use numbers and the second relates to differences in the scenarios analysed.

As Westhoff et al. (2004) have noted in analysis of multilateral trade reform the Baseline or reference scenario is very important. Under the OECD-FAO AGLINK baseline model projections used by the European Commission total exports from the EU are considerably lower than those in the FAPRI-Ireland Baseline. (This lower level of exports is ultimately a function of a stronger OECD-FAO baseline projection of EU beef consumption.) This lower baseline level of exports means that the market impact (i.e. negative price impact) of the elimination of export subsidies is lesser in their analysis than ours. The greater reduction in internal EU prices in our analysis reduces, *ceteris paribus*, the attractiveness of the EU market as a destination for beef exports from non-EU countries.

The second difference between the analysis conducted by the Commission and that reported here relates to the scenario analysed. In the European Commission analysis reforms to the market access pillar include expansion of TRQ amounts. Our analysis specifically excludes any changes in TRQ amounts. We would expect that an expansion of TRQ would, if added to the parameters of our scenario, lead to increases in EU beef imports greater than those projected under our WTO High Scenario. Nevertheless, given the differences in the reference scenarios used in the two models (FAPRI-Ireland and OECD-FAO AGLINK) it is unlikely that import flows of the magnitude projected in the analysis released by the European Commission would result.

In Ireland the suckler cow herd, which under the Baseline was projected to decline by almost 20 percent over the period 2004-2015 is projected under the WTO High Scenario, by 2015, to have declined by a further 4 percent relative to the Baseline. Such a development would leave Irish suckler cow numbers under the WTO High Scenario at levels last observed prior to the Mac Sharry reforms of the early 1990s. Associated with the decline in suckler cow herds are declines in the volume of beef produced. Irish beef production by 2015 is over 2.5 percent lower than under the Baseline. This arises from a decline in the number of calves produced by the smaller suckler cow herd and from a drop of 1 percent in the average slaughter weight of cattle, as an increased proportion of the cow herd is made up of dairy cows. The projected decline in Irish beef production under the WTO High Scenario is not matched by a decline in Irish exports, increased imports of beef into Ireland when combined with slow growth in domestic consumption leads to an increase of 7 percent in exports of beef from Ireland. The re-orientation of Irish exports away from non-EU markets towards EU markets that has been underway over the last 5 years is accelerated by the elimination of export refunds. By the end of the period almost all Irish beef exports are to EU markets.

By 2015 the combination of lower prices compared to the Baseline (these are almost 12 percent lower), as well as lower volumes of beef production, mean that the value of beef output sold by the Irish cattle sector when compared with the level projected under the Baseline, is over 13 percent lower. When the value of the sector’s output under the WTO High Scenario in 2015 is compared with the value of the sector in 2004, the cumulative decline through the WTO High Scenario projection period is almost 28 percent. .

6.3 Sheep (High Scenario Results)

Under the WTO High Scenario the tariff protection afforded to the EU sheep sector is dramatically reduced. With lamb not designated as a sensitive product under the WTO High Scenario import tariffs are reduced by 60 percent. This large reduction in import tariffs leads to a large increase in the volume of lamb imported into the EU. EU lamb imports in 2015 under the WTO High Scenario are over 56 percent higher than under the Baseline. These increased lamb imports into the EU lead to a large reduction in EU lamb prices when compared to the price levels projected under the Baseline. Compared to the Baseline, EU lamb prices are projected under the scenario to be almost 16 percent lower. Irish lamb prices, which are determined by development on EU markets are also significantly lower, with the projected price under the WTO High Scenario in 2015 approximately 16 percent lower

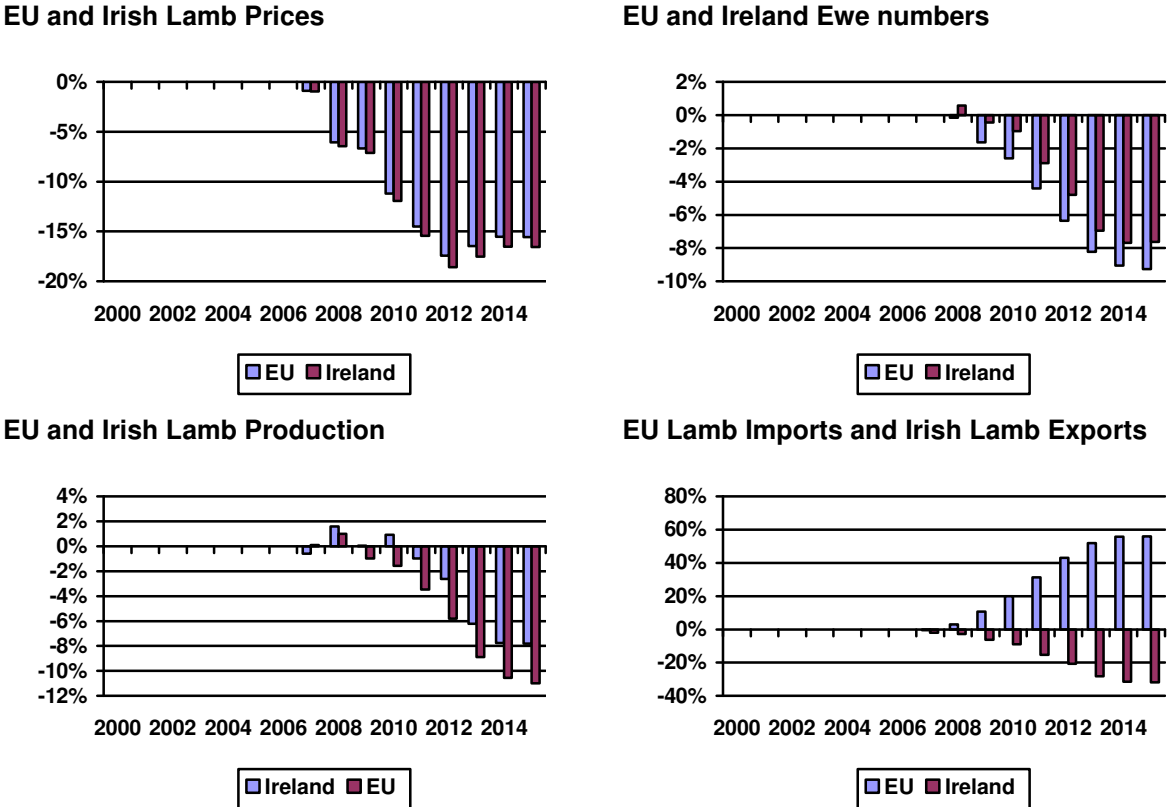
than under the Baseline. It should be noted that the baseline price for the sheep sector is high due to the reduction in flocks that is a result of the introduction of the SFP. These high prices increase the impact of reducing tariffs on imports, and the resulting price in the sheep sector is still relatively strong.

The reductions in prices projected under the WTO High Scenario, significantly reduce the incentives EU farmers have to retain ewes or to add to their flocks. Overall, compared to the Baseline projections, the number of breeding ewes in the EU is, by 2015, projected to be over 9 percent lower. The Irish ewe flock, which under the Baseline was projected to decline by 20 percent between 2004 and 2015, is projected, under the WTO High Scenario, to contract by approximately 8 percent relative to the Baseline level by 2015.

The reduction in the ewe flock in Ireland and the EU is reflected in reduced indigenous production of lamb. Total EU production of lamb in 2015 under the WTO High Scenario is projected to be over 11 percent lower than under the Baseline. Irish lamb production in 2015 is projected to be 8 percent lower than under the Baseline. If we compare the volume of Irish lamb production under the WTO High Scenario in 2015 with that produced in 2004, the reduction is over 27 percent.

The projected fall in the volume of lamb production, when combined with the lower Irish lamb prices that are projected under the WTO High Scenario, together mean that the value of sheep sector output declines significantly. Under the Baseline in 2015, the value of lamb output sold was projected to be €193 million, while under the WTO High Scenario the value of output from the sheep sector is projected to decline by over 23 percent to €148 million.

Figure 6-3: EU and Irish Lamb Prices Production and Trade: Percentage Change vs Baseline



FAPRI-Ireland Model (2006)

6.4 Pigs (High Scenario Results)

The impact of the WTO High Scenario on the outlook for Irish and EU pig meat prices does not deviate substantially from the Baseline projection. Irish pig meat prices under the WTO High Scenario are projected to be approximately 2 percent below the level projected in the Baseline. This decline is

due to the cross price effects of lower priced beef and lamb, and the elimination of export subsidies for pork, though these are less important for pig meat than for beef.

The impact of the WTO High Scenario on the projected level of the breeding herd is minimal (less than a one percent reduction relative to the Baseline) given that the scenario has only a small impact on pig prices. The WTO High Scenario has a minimal impact on the projected path of pig meat production and consumption. By 2015, under the WTO High Scenario, the value of the Irish pig sector is 2.5 percent below the projected Baseline level.

6.5 Dairy (High Scenario Results)

The WTO High Scenario outlook for international dairy markets is more positive in terms of price prospects than the Baseline. This is due to the reduced level of exports, under this Scenario, from the EU to the world market. The EU a major exporter on the world market and therefore any reduction in exports has a direct impact on world prices.

The impact of the WTO High Scenario on world prices is not uniform across the dairy commodities. Differences relate to the scale of EU export reductions for the particular commodity as well as the share of world markets held by the EU for the commodity in question. For example, the impact of the WTO High Scenario on world dairy product prices is greatest in the case of butter, due to the steep reduction in EU butter exports and the fact that the EU is a key supplier of butter to the world market.

Overall, by 2015, the WTO High Scenario leads to an increase in world prices of 19 percent and 3 percent respectively in the case of butter and SMP relative to the 2015 Baseline price. Under the WTO High Scenario world prices in the case of cheese and WMP increase by 5 percent and 10 percent respectively relative to the 2015 Baseline price.

The impact of the WTO High Scenario is to lower EU dairy product and milk prices and hence milk yields increase at a slightly lower rate than under the Baseline. The slower growth in milk yields also has the effect of slowing the rate of decrease in the number of dairy cows under the scenario relative to the Baseline. Milk production is marginally lower under the WTO High Scenario than in the Baseline but is still assumed to meet the milk quota.

While there is a change in product mix under the Baseline, in favour of additional cheese production and lower butter/SMP production, this change is largely mirrored under the WTO High Scenario. The change in policy impacts on dairy product prices in a fashion that broadly reflects the alteration in the relative prices of cheese versus butter/SMP seen in the Baseline. Growth in domestic cheese consumption is slightly stronger than in the Baseline, as consumption per capita increases at a stronger rate than in the Baseline due to the lower cheese price in the WTO High Scenario. Lower tariffs in the WTO High Scenario allow imports of cheese to increase at a greater rate than in the Baseline. By 2015, EU imports of cheese are close to 70 percent higher than the corresponding year in the Baseline. EU cheese exports, which were already projected to decline in the Baseline, are reduced further under the WTO High Scenario, due to the scaling back in export refunds to meet the reduced export subsidy limits. By 2015 EU cheese exports in the WTO High Scenario are down 34 percent on the projected Baseline level in 2015. Cheese stock levels are little changed on their projected Baseline level.

In the WTO High Scenario EU butter production declines by 6 percent over the period 2004 to 2015. This is a slightly higher rate of decrease in butter production than projected in the Baseline. Under the WTO High Scenario, the change in relative prices means milk is diverted from butter to cheese production (as in the Baseline) but the change in production is only slightly more pronounced than in the Baseline. In contrast with the Baseline, where EU butter consumption continued to decline, under the WTO High Scenario EU domestic use of butter increases by over 11 percent relative to the baseline in 2015. It is notable that the reduction in butter price under the WTO High Scenario is sufficient to offset the downward trend in consumer preference for butter.

EU butter imports occur at similar levels to those projected in the Baseline (an increase of 8 percent by 2015 relative to the 2004 level). Despite the general reduction in tariffs specified in the scenario, the sensitive products designation for butter protects the EU butter market from a greater level of

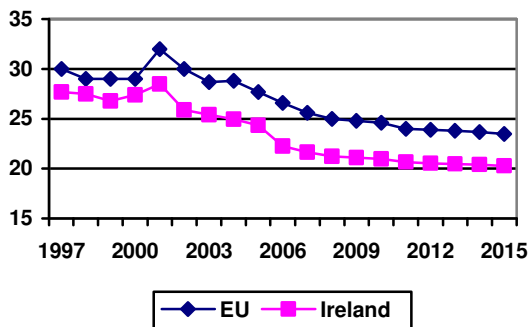
import penetration. EU butter exports, which were already projected to decline by 15 percent over the period of the Baseline projection, are further reduced in the WTO High Scenario. By 2015, under the WTO High Scenario, butter exports are projected to be 87 percent below the corresponding 2015 level in the Baseline due to the lower level of export subsidies available. In order to prevent a build up of butter stocks in the EU, it is also necessary to reduce the EU butter intervention price by a further 20 percent below the level that would be in effect when the MTR is fully implemented.

EU SMP production declines by 17 percent in the period 2004 to 2015 in the WTO High Scenario. This represents a 6 greater decrease than that projected in the Baseline. As in the case of butter, the change in the price of SMP relative to cheese is marginally less favourable in the WTO High Scenario than in the Baseline. Under the WTO High Scenario, EU SMP imports take place at a similar level to that in the Baseline. Despite the reduction in import tariffs, the internal EU price for SMP approaches world price levels in the WTO High Scenario, providing little incentive to other countries to deliver additional volumes of SMP to the EU. It is projected that there will be a substantial decline in exports (approximately 60 percent) in the case of SMP in the Baseline over the period 2004 to 2015 and the decline in EU SMP exports is more pronounced in the WTO High Scenario at 87 percent relative to 2004 by 2015. The scaling back of export subsidies in the WTO High Scenario reduces SMP exports, raises world prices and reduces the EU SMP price to world price levels, and exports refunds are not necessary for third country SMP exports.

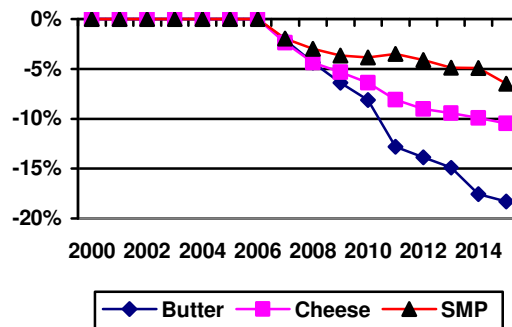
The reduction over the projection period in EU SMP domestic use in the WTO High Scenario is equivalent to the 10 percent reduction projected in the Baseline. This is because of a slightly lower SMP price in the WTO High Scenario, which slightly offsets the decline in consumption that occurs at Baseline prices. As in the case of butter, the WTO High Scenario requires a further reduction in SMP intervention prices (10 percent lower than the reduction taking place under the CAP reform) to prevent a build up of SMP stocks in the EU. Changes in EU WMP production are largely confined to reduced levels of production (17 percent) and exports (36 percent). The EU milk price under the WTO High Scenario is projected to be 23.5 euro per 100kg by 2015, which represents a reduction of 12 percent relative to the price projected by 2015 under the Baseline.

Figure 6-4: EU and Irish Milk Price (High Scenario) and EU Export Volumes

EU and Irish Milk Prices (High Scenario)



EU Exports (Baseline vs High Scenario)



FAPRI-Ireland Model (2006)

The impact of the WTO High Scenario is to lower Irish milk prices to a level below that projected in the Baseline and hence milk yields increase at a slightly lower rate than under the Baseline. As in the case of the EU generally, this also has the effect of slowing, very slightly, the rate of decrease in the number of dairy cows under the WTO High Scenario relative to the Baseline. Irish milk production is marginally lower under the WTO High Scenario than in the Baseline but still meets the milk quota.

By 2015, under the WTO High Scenario, the Irish milk price is project to decline to about 20.3 euro per 100 kg (93 euro cent per gallon) by 2015. This represents a further 11 percent reduction below the price that would have prevailed in the Baseline by 2015. As in the Baseline projection, much would depend on the international market situation and the attitude of the European Commission in the provision of export refunds in the period when export subsidy limits are being reduced.

Under the WTO High Scenario Irish consumption of dairy products is, by 2015, projected to be between 0.3 percent and 1.3 percent higher than projected under the Baseline. This is due to lower projected prices for dairy products under the WTO High Scenario when compared with the Baseline. The value of the Irish milk output is projected, by 2015, to be a further 12 percent below the Baseline level, which was 15 percent below the level of output value observed in 2004.

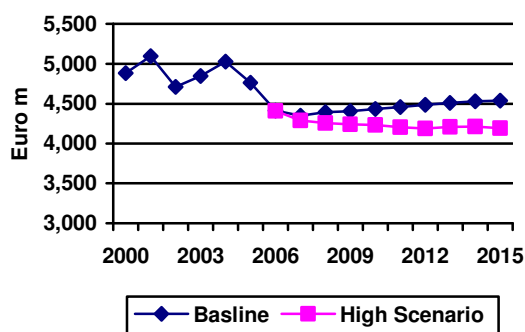
6.6 Intermediate Consumption & Operating Surplus (High Scenario Results)

The large declines in the value of agricultural output in the WTO High Scenario have mainly been driven by declines in the farm gate prices of agricultural products. The reductions in the volumes of production under the scenario in the dry stock and cereals sectors have not been as dramatic as the declines in prices. As a consequence this means that the decline in expenditure on producing agricultural output under the scenario is also limited. The prices of most of the inputs which farmers purchase, with the exception of animal feed stuffs, are determined outside of the agricultural industry and are not affected in the scenario we have analysed. Thus, the value of intermediate consumption, which under the WTO High Scenario declines by 2.3 percent relative to the Baseline, does not decline sufficiently to maintain the level of operating surplus projected under the Baseline. We have assumed that the Green Box designation of the decoupled SFP remains and that no change in the value of the SFP occurs under the WTO High Scenario so that subsidy receipts are unchanged relative to the Baseline.

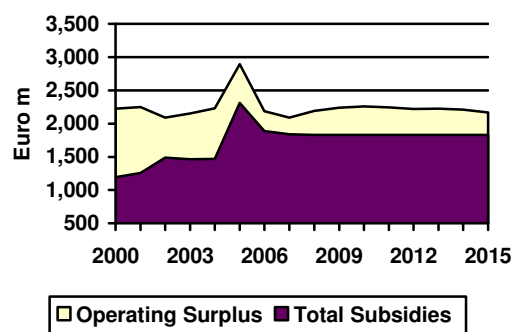
When reduced agricultural output (8 percent lower under the WTO High Scenario in 2015) is combined with marginally reduced expenditure on inputs (down 2 percent) and unchanged subsidy receipts, the implications for Irish agricultural sector income (Operating Surplus) are inescapable. When compared with the level of operating surplus projected under the continuation of current policy in 2015 (€ 2,436m) the projected level under the WTO High Scenario of € 2,167m represents a decline of over 11 percent decline in agricultural sector income.

Figure 6-5: Goods Output and Operating Surplus: High Scenario

Goods Output at Producer Prices



Operating Surplus and Total Net Subsidies



FAPRI-Ireland Model (2006)

As illustrated in Figure 6-5 the share of total subsidies in total agricultural sector operating surplus is also projected to increase under the WTO High Scenario. This increased share arises as the value of the goods produced by the sector declines. By 2015 subsidies are projected to equal 85 percent of agricultural sector income (operating surplus). This projected development implies that Irish agricultural sector income will be more exposed to changes in EU agricultural policy that could reduce the value of the receipts from the Single Payment Scheme. Such a change might arise from a challenge to the Green Box designation of decoupled income payments or from a change in the CAP that involved greater emphasis and expenditure on Rural Development. As is clear from the WTO High Scenario projections the assumed continued “Green Box” designation of the EU decoupled income supports to farming is critical to the maintenance of agricultural sector income at the levels projected.

Overall, the WTO High Scenario has a large negative impact on the Irish agricultural operating surplus. A decline in agricultural sector income of 11 percent relative to the Baseline is a large change.

The value of agricultural output at producer prices in 2015 declines under the WTO High Scenario by over 8 percent relative to the Baseline; relative to the level observed in 2004 the decline of almost 17 percent in nominal value of the agricultural sector's output indicates the magnitude of the challenge that would be posed to Irish agriculture and associated industries by an outcome to the Doha Round that was similar to the WTO High Scenario. Of course the WTO High Scenario is less radical than the proposals put forward by either the US or the G20 and an agreement with deeper tariff cuts, increased TRQ, and tighter restrictions on the designation of sensitive products is possible. Such an outcome would be expected to have a greater impact on the sector than the WTO High Scenario analysed.

Comparisons of the level of agricultural sector income projected in 2015 under the WTO High Scenario with the level of agricultural sector income observed in 2004 have to take account of the impact of inflation over the intervening period. Using the projections of Irish inflation used in the FAPRI-Ireland model, which are obtained from the ESRI, the projected level of operating surplus in 2015 when expressed in 2005 prices declines by over 21 percent. When compared with the operating surplus in 2005 the decline over the projection period is considerably more dramatic. Due to the large increase in the level of operating surplus in 2005 compared to 2004, the operating surplus projected for 2015 under the High Scenario, when expressed in 2005 prices, is almost 40 percent lower.

6.7 WTO Low and Moderate Scenario Results

Detailed results for both the WTO Low and WTO Moderate Scenarios are presented in the annexes to this report (Annex IV and V). In this section we do not present the results for the WTO Low and WTO Moderate Scenarios in the same level of detail as was the case for the Baseline and High Scenario simulation results. Due to the design of the Low and Moderate Scenarios, differences between these scenarios and the WTO High Scenario tend to be more pronounced midway through the projection period rather than at the end points of the projection period. This occurs primarily due to the "front loading" of the export subsidy elimination in the WTO High Scenario, by the end of the projection period (2015) the remaining export subsidies provisions for the EU are largely equal in the WTO Moderate and WTO High Scenarios. The longer elimination schedule for export subsidies and lower tariff cuts under the WTO Low Scenario largely explain the differences between the results in the WTO Low versus WTO Moderate and High Scenarios.

The discussion in this section is confined to a commentary on the overall output, input and income situation in Irish agriculture under the different scenarios and at the sector level we highlight only the main differences between the scenarios. Annex I provides projections of overall agricultural sector output, input and income under the Baseline and all three of the WTO scenarios analysed. Detailed projections of commodity supply and uses under all of the scenarios analysed are provided in Annexes III, IV and V.

6.7.1 Low Scenario

At the commodity level the impact of the WTO Low Scenario is greatest in the case of sheep and lamb. By 2015 even under the WTO Low Scenario there is a 13 percent drop in sector value relative to the 2015 Baseline. Reductions in the value of the beef and milk sectors under the WTO Low Scenario are more modest at approximately 7 percent in 2015 relative to the Baseline. In the case of beef the reduction in value is due initially to the decrease in tariffs and only towards the end of the projection period does the reduced export subsidisation become an additional factor. It should be remembered that beef 3rd country exports from the EU currently run well below the level allowable under the existing URAA limit. This means that under the WTO Low Scenario it is only towards the end of the 15 year schedule of reductions in export subsidies that the reduction from the URAA bound levels negatively affects the EU ability to subsidise beef exports when compared to the Baseline. This illustrates the importance of the timing of the cuts in subsidies, a rapid phase out rate would cost Ireland's beef producers millions of euro cumulatively relative to a longer period, assuming the Commission continues to use export subsidies consistently with past behaviour.

In the case of milk it has been the practice to operate closer to the URAA export subsidy limits (or at the limit in the case of cheese). Hence the impact of the WTO Low Scenario is more immediately felt and the impact is more attributable to the decrease in subsidised exports than to the increase in dairy product imports. In either case a market balance can only be achieved through lower prices for EU dairy products.

The WTO Low Scenario has only a minor impact on the cereals sector because by 2015, under the Baseline, the EU is projected to be exporting some soft wheat and barley onto world markets without subsidy. The reduction in export subsidies and reduced tariff protection afforded to EU cereals markets under the WTO Low Scenario lead to slightly lower internal EU prices (soft wheat price falls by approximately 1 percent relative to the Baseline by 2015). However lower EU prices leads to increased cereal exports from the EU. In 2015 EU wheat exports are almost 1 percent higher and barley exports almost 2 percent higher than under the Baseline.

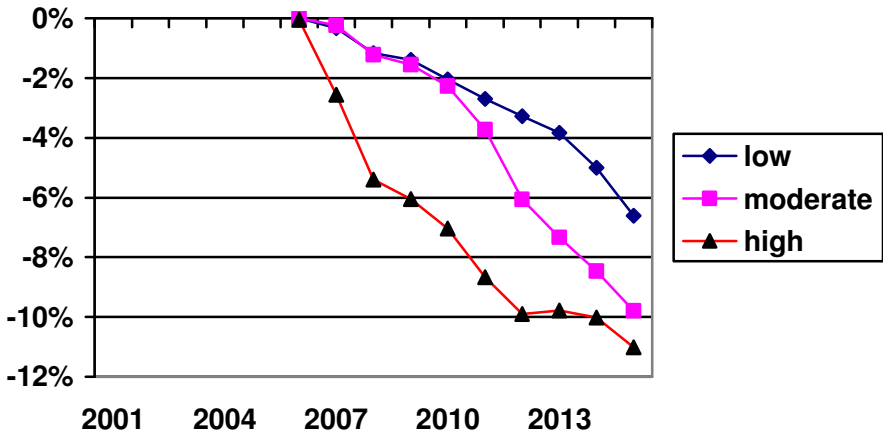
The WTO Low Scenario has little impact on input usage. There are decreases in feed and fertiliser usage (due to lower levels of livestock production) which amount to less than 1 percent relative to the Baseline by 2015. Overall the WTO Low Scenario produces a decrease in agricultural income relative to the Baseline of 6.6 percent by 2015.

6.7.2 Moderate Scenario

While the WTO Moderate Scenario does not include the front loading of export subsidy reductions, in common with the WTO High Scenario the WTO Moderate Scenario does imply the elimination of export subsidies over a 10 year period. Therefore by 2015 export subsidy limits are not greatly above the level to which they fall under the WTO High Scenario.

Relative to the WTO Low Scenario the impact on the sheep sector is largely unchanged in the WTO Moderate Scenario (the faster pace of reduction in export subsidies in the WTO Moderate Scenario relative to the WTO Low Scenario has no impact since the EU is not a sheep meat exporter). In the case of other livestock sectors and the milk sector however, the decrease in sector value is quite close in magnitude to the reductions experienced in the WTO High Scenario. This similarity is due to the equivalence of end point of the export subsidy elimination schedules under the High and Moderate scenarios.

Figure 6-6: Percentage change in operating surplus (income) relative to the Baseline



FAPRI-Ireland Model (2006)

The WTO Moderate Scenario has, like the Low and High Scenarios, only a limited impact on the EU and Irish cereals sectors because, as noted in the previous section, by 2015 under the Baseline the EU is exporting cereals without subsidy. This implies that the elimination of subsidies and reduction in tariff protection has only a limited impact on internal EU price levels, production and trade.

The impact on input expenditure in the WTO Moderate Scenario is not substantial, when compared with expenditure levels under the Baseline, by 2015 Irish agriculture’s expenditure on inputs is projected to decline by approximately 1.4 percent under the WTO Moderate Scenario. Overall the WTO Moderate Scenario produces a decrease in agricultural income relative to the Baseline of just under 10 percent. This decline is about 90 percent of that which occurs under the WTO High Scenario by 2015. As noted above the similarity in the end points of the WTO Moderate and WTO High scenarios in terms of the freedom afforded to the EU to subsidise the export of agricultural commodities explains the relatively close level of the projections of operating surplus under these two

scenarios. The smaller magnitude of the operating surplus reduction under the WTO Moderate Scenario, when compared with the WTO High Scenario, is largely accounted for by the higher levels of tariff protection afforded under the WTO Moderate Scenario.

7 High Scenario - Exchange Rate Sensitivity

An important consideration concerning the impact of WTO reform is the future exchange rate between the euro and the US dollar. On international markets, agricultural commodities are generally traded in US dollars. Just as a weaker euro can lead to an increase in the price of oil in euro terms, other things being equal, a weaker euro increases the world price of an agricultural commodity when the price is expressed in euro. The economic impact in the EU of tariff reductions and limitations on the amount that can be spent on export subsidies depends on world commodity prices as expressed in euro since the size of the export refund is dependent on the price gap between the world price (in euro) of a commodity and the price of that commodity as traded in euro on internal EU markets.

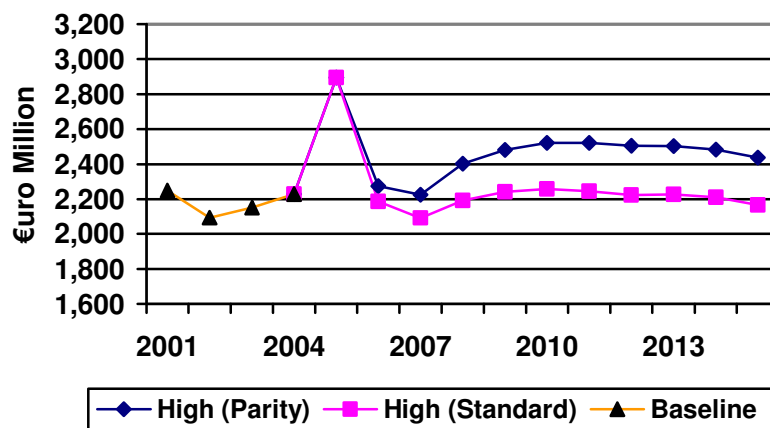
In this analysis our standard projected exchange rate between the US dollar and the euro, shows the dollar decreasing in value over time to \$US 1.43 per euro. Economic arguments could be made on the one hand for an even weaker future path for the US dollar, or by contrast, for a stronger dollar that might take the exchange rate back closer to parity with the euro.

It is likely that the EU will seek, in the course of the Doha round negotiations, to ensure that export subsidy reduction are subject to a binding outlay (value of expenditure) constraint rather than a volume (of product) constraint. A euro denominated value constraint has some element of flexibility in that it can facilitate differing volumes of product subsidisation depending on the value of export subsidy required per unit of product exported to third countries. In turn the export subsidy required per unit of product exported depends on the gap between the world price and the internal EU price and, as outlined above this is contingent of the US dollar / euro exchange rate.

To examine the impact of a different exchange rate path, the WTO High Scenario was implemented under the assumption of a parity exchange rate between the US dollar and the euro. As outlined above a parity exchange rate has the potential to reduce the impact on EU agriculture of a WTO reform agreement since world prices when expressed in euro would, *ceteris paribus*, be higher thereby reducing, and in some cases negating, the need for export refunds. The main beneficiaries under these circumstances would be the sectors with the greatest requirement for export refunds namely the dairy and beef sectors.

Overall agricultural output value would be higher under the WTO High Scenario with a parity exchange rate than under the WTO High Scenario conducted with the standard exchange rate. This is illustrated in Figure 7-1 below.

Figure 7-1: Projected Agricultural Income under the WTO High Scenario with differing dollar/euro exchange rates



FAPRI-Ireland Model (2006)

As illustrated in Figure 7-1 the WTO High Scenario under the parity euro/US dollar exchange rate could add approximately €270m to the level of agricultural sector income under the WTO High Scenario projected under the standard exchange rate. The parity exchange rate raises the value of the output of the beef, sheep, milk and cereals sectors. While input expenditure is also higher under the parity scenario, the increase in the output value of agriculture is greater and hence, given that subsidies are unchanged under the two scenarios, income levels under the High-Parity Rate scenario are almost 12 percent higher in 2015 than they are for the corresponding year in the High-Standard Rate scenario.

In the WTO High Scenario with the parity exchange rate, it is assumed that the European Commission would operate export refunds at the maximum level allowable under the schedule of exports subsidy limits where these bite. The European Commission could of course take a different view and might not spend at the allowable limit, in which case the beneficial impact of the parity scenario on agricultural incomes would be reduced.

8 Conclusions

Each of the WTO Scenarios analysed and discussed has a negative impact on Irish agricultural income. The elimination of export subsidies, lowering of tariffs and reduced expenditure on trade distorting supports reduces the market prices of Irish agricultural output. Lower prices for Irish agricultural output lead to lower volumes of production, as Irish farmers for whom the marginal costs of production are greater than the prevailing market price cease or reduce their levels of agricultural production. Lower prices and lower volume of production combine to dramatically lower the value of Irish agricultural output. By 2015, under the WTO High Scenario, the value of goods output produced by Irish agriculture declines by almost 8 percent when compared to the Baseline. Under the Baseline (which incorporates the decoupling of direct payments) the value of goods output is projected to decline by almost 10 percent between 2004 and 2015. Thus, cumulatively over the next ten years, under the most extreme of the WTO Scenarios analysed and with the implementation of the most recent CAP reform, the value of Irish agricultural production will decline by almost 17 percent.

The WTO High Scenario may not, *ex post*, be as “extreme” as the final WTO Agreement. The agreement at the Sixth WTO Ministerial on an end date for the elimination of export subsidies is earlier than that used in the WTO High and WTO Moderate Scenarios. Final agreement on reforms to the market access and domestic support pillars of the negotiations have not been reached, but it is possible that they will be more extreme than the reform parameters analysed in the WTO High Scenario. In the final WTO agreement, when compared to the WTO High Scenario analysed in this paper, the tariff cuts agreed may be deeper, the freedom to designate products as sensitive may be restricted, and the expansion of TRQ (not considered in our analysis) may occur. In the event of such an outcome it is probable that projections of the impact of such a reform on the value of output produced by Irish agriculture would, *ceteris paribus*, be greater than those suggested in the analysis of the WTO High Scenario. Future research by FAPRI-Ireland will examine such reforms as the shape of the final agreement becomes clearer.

Lower levels of agricultural activity under both the Baseline and the WTO Scenarios are associated with lower levels of expenditure on agricultural inputs. However, the savings from reduced input expenditure are not of the magnitude to significantly offset the negative impact of the reduction in the value of goods output that results from the elimination of export refunds and lowering of tariffs. Under the WTO High Scenario expenditure on inputs by Irish agriculture is projected to decline approximately 2 percent relative to the Baseline in 2015.

The continued “Green Box” status of the SFP means that the reduction in the AMS in all of the WTO Scenarios analysed has little impact on Irish and EU agriculture. The strategy of reforming the CAP so that the majority of the budgetary support provided to agriculture is in a decoupled form would, at this stage, seem to have insulated the sector from externally driven (i.e. WTO Agreement) reform. The December 2005 negotiations on the EU budget appear to guarantee the SFP system until 2013, though the provision for a review of all EU revenue and spending in 2008/9 may pose a threat to the longer term existence of the SFP system as currently constituted. The continued payment of decoupled direct payments is assumed to continue for the projection period (i.e. to 2015) under both the Baseline and the WTO Scenarios. With declining agricultural output value under the WTO

Scenarios when compared with the Baseline, the share of agricultural sector income accounted for by subsidies under the WTO Scenarios increases from 75 percent under the Baseline to over 84 percent under the WTO High Scenario.

Irish agricultural sector income in 2015 is, in the absence of a WTO Agreement (i.e. under the Baseline), projected to increase by 9 percent when compared with the level observed in 2004. Under the WTO High Scenario the level of income arising in the sector in 2015 is projected to be almost 11 percent lower under the Baseline in that year. This represents a major decline in nominal income arising in the sector. As noted above, the final WTO Agreement could possibly be more extreme than the WTO High Scenario, and it would be expected that the projected impact of such a final WTO agreement would be more extreme than the WTO High Scenario.

The caveats noted in earlier sections should be recalled in interpretation of the results of this study. This analysis has examined the unilateral implementation of trade reforms by the EU. No account has thus been taken of the affect on world markets of similar reforms undertaken by other WTO Members. The ending all export subsidies and the tighter regulation of food aid, would be expected, along with a multilateral lowering of tariff barriers, to have a positive impact on the level of world prices. A WTO agreement that lowered barriers to trade in agriculture, industrial goods and services would also be expected to boost global economic growth. Most computable general equilibrium analyses of multilateral trade agreements suggest that higher economic growth would occur as the distorting effects of tariffs and export subsidies on resource allocation are reduced (Hertel and Keeney 2005, Anderson, Martin and van der Mensbrugge 2005). Higher levels of income, especially in developing countries, would be expected to increase demand for agricultural goods and also raise the level of world agricultural prices. These issues suggest that the negative impact of reforms agreed as part of the Doha Round may not be as “negative” as suggested by the partial equilibrium analysis conducted in this paper. However, any such ameliorating general equilibrium impacts would not be of sufficient magnitude to reverse the negative effect of the likely outcome from the Doha Round on Irish agricultural sector income.

The agreement reached on the elimination of export subsidies of all forms at the sixth WTO Ministerial meeting in Hong Kong in December 2005 marks, perhaps, the beginning of the end of the WTO Doha round negotiations that started with the Doha Declaration of November 2001. The agreement to eliminate all export subsidies by 2013 that was reached in Hong Kong leaves two of the three pillars of the agricultural negotiations within Doha Round unresolved. The shape of the final agreed text that will incorporate some future agreement on these further two pillars of the WTO negotiations (market access and domestic support) is at this point unclear. However, the broad shape of a probable future agreement is clear from the report of Mr Crawford Falconer the Chairman of the WTO Agriculture Committee (WTO, 2005). Chairman Falconer’s report provides what is probably the best idea of where the negotiations are currently, where they probably will and will not go.

Some of the possible outcomes from the negotiations outlined in WTO Agriculture Committee Chairman Falconer’s report go beyond the parameters of the possible policy reforms analysed in this paper’s Low, Moderate and High Scenarios. Future research by the FAPRI-Ireland partnership will analyse proposals which emerge as WTO Members negotiate the modalities of an agreement on agricultural trade reform. Nevertheless the analysis of the WTO Low, WTO Moderate and WTO High Scenarios indicates the magnitude of the possible impacts from a WTO agreement on agriculture trade reform.

Bibliography

- Anderson, K., W. Martin and D. van der Mensbrugghe (2005). "Market and Welfare Implications of Doha Reform Scenarios." In Anderson and Martin (eds.) *Agricultural Trade Reform and the Doha Development Agenda*. Palgrave Macmillan and the World Bank. IBRD, Washington, D.C.
- Binfield, J., J. Behan, J. Breen, T. Donnellan, K. Hanrahan, T. Hennessy and P. Westhoff (2003a). "An Analysis of the Effects of Decoupling of Direct Payments from Production in the Beef, Sheep and Cereal sectors." Analysis prepared for the Department of Agriculture and Food. January 2003. Published by Teagasc, Dublin.
- Binfield, J., T. Donnellan, K. Hanrahan, and P. Westhoff (2003b). "The impact of the MTR and WTO reform on the agriculture sector in the EU and Ireland." Paper published in the *Outlook 2003: Medium Term Analysis for the Agri-Food Sector*. Teagasc Dublin. May 2003.
- Binfield, J., T. Donnellan, K. Hanrahan and P. Westhoff (2003c). "The Luxembourg CAP Reform Agreement: Implications for EU and Irish Agriculture". Paper published in The Luxembourg CAP Agreement: Analysis of the impact on EU and Irish Agriculture. Teagasc, Dublin October 2003.
- Bureau, J.-C., M. P. Ramos and L. Salvatici (2005). "Tariffs, TRQs and Import Composition: The Case of Beef Trade Between the EU and Mercosur." Paper presented at *European Trade Study Group*, Seventh Annual Conference, 8-10 September 2005, University College Dublin, Ireland.
- European Commission (2005a). "Statement of EU Conditional negotiating proposals – with explanatory annotations. Memo, Brussels, 10 October, 2005, Available to download at http://europa.eu.int/commission_barroso/mandelson
- European Commission (2005b). "The Commission proposal and the Doha Round: What impact on EU agriculture." Presentation made by the European Commission at the 6th WTO Ministerial, Hong Kong, 13—18 December, 2005. Available to download from <http://europa.eu.int/comm/agriculture/external/wto/hongkong/pres1.pdf>
- Fabiosa, J., J. Beghin, S. de Cara, A. Elobeid, C. Fang, M. Isik, H. Matthey, A. Saak, P. Westhoff, D. S. Brown, B. Willott, D. Madison, S. Meyer, and J. Kruse (2005). "The Doha round of the World Trade Organization and Agricultural Markets Liberalization: Impacts on Developing Economies." *Review of Agricultural Economics*, 27(3): 317—335.
- Hertel, T.W. and R. Keeney (2005) "What Is at Stake: The Relative Importance of Import Barriers, Export Subsidies, and Domestic Support." In Anderson and Martin (eds.) *Agricultural Trade Reform and the Doha Development Agenda*. Palgrave Macmillan and the World Bank. IBRD, Washington, D.C.
- OECD-FAO (2005) OECD-FAO Agricultural Outlook 2005—2014. OECD Publications, Paris, France.
- Tongeren, F. van, H. van Meijl, Y. Surry (2001): Global models applied to agricultural and trade policies: A review and assessment. *Agricultural Economics*, 26:149–172.
- Office of the United States Trade Representative (2005). "U.S. proposal for Bold Reform in Global Agricultural Trade." Doha Development Agenda Policy Brief – October 2005. Available to download at www.ustr.gov
- Westhoff, P.C., J.F. Fabiosa, J.C. Beghin, W.H. Meyers (2004). "Challenges in Modelling the Effects of trade agreements on the agricultural sector." *Journal of Agricultural and Applied Economics*, 36(2):383—393.
- World Trade Organisation (2005) Doha Work Programme Ministerial Declaration. WT/MIN(05)/W/3/Rev.2 Available from www.wto.org.

Annex I Output Input and Income Tables

Table A-I-1: Output Input and Income in Agriculture (Baseline)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2015 v 2004
	Euro millions													
Livestock	2,070	2,218	2,265	1,970	1,916	1,956	1,957	1,971	1,984	1,998	2,010	2,012	2,009	-9.4%
Of which: cattle	1,244	1,345	1,335	1,141	1,075	1,088	1,088	1,099	1,109	1,118	1,125	1,126	1,121	-16.6%
pigs	283	301	297	285	274	283	287	286	285	286	287	287	285	-5.2%
sheep and lambs	193	203	203	179	197	209	200	199	198	197	197	194	193	-5.1%
Livestock Products	1,470	1,457	1,374	1,223	1,215	1,213	1,217	1,222	1,227	1,233	1,237	1,243	1,246	-14.5%
Of which: milk	1,432	1,417	1,332	1,191	1,181	1,178	1,181	1,185	1,190	1,196	1,200	1,206	1,209	-14.6%
Crops	1,307	1,353	1,353	1,220	1,220	1,225	1,232	1,240	1,248	1,256	1,265	1,275	1,285	-5.0%
Of which: cereals	172	182	125	138	139	142	144	147	148	149	150	150	149	-17.6%
root crops	174	167	166	122	119	117	116	115	114	114	114	114	114	-31.6%
forage plants	640	686	682	661	665	669	674	679	683	687	691	695	699	1.9%
Goods output at producer prices	4,846	5,027	4,932	4,413	4,351	4,395	4,407	4,433	4,459	4,486	4,512	4,530	4,540	-9.7%
Agricultural services	248	263	261	271	276	282	289	296	302	308	314	320	326	23.7%
Subsidies less taxes on products	889	879	409	-39	-39	-39	-39	-39	-39	-39	-39	-39	-39	-104.5%
Agricultural output at basic prices	5,983	6,169	5,602	4,645	4,588	4,638	4,657	4,690	4,722	4,755	4,786	4,810	4,826	-21.8%
Intermediate consumption	3,377	3,451	3,443	3,332	3,275	3,145	3,090	3,071	3,058	3,061	3,066	3,075	3,082	-10.7%
of which: feeding stuffs	923	904	864	796	765	731	706	690	669	659	652	645	638	-29.4%
fertilizers	371	358	364	331	322	316	313	311	311	311	312	313	314	-12.3%
energy	227	245	267	278	277	270	268	268	270	272	274	277	280	14.3%
forage plants	631	677	671	649	653	658	663	668	672	676	680	684	689	1.8%
agricultural services	248	263	261	271	276	282	289	296	302	308	314	320	326	23.7%
Gross value added at basic prices	2,606	2,718	2,158	1,313	1,313	1,493	1,567	1,619	1,664	1,694	1,720	1,736	1,744	-35.9%
Fixed capital consumption	643	656	669	635	630	628	629	632	641	654	671	690	711	8.4%
Net value added basic prices	1,964	2,063	1,489	678	683	865	938	987	1,023	1,040	1,049	1,046	1,033	-49.9%
Subsidies less taxes on production	578	594	1,702	1,928	1,881	1,872	1,872	1,871	1,871	1,871	1,871	1,871	1,871	214.9%
Factor income	2,542	2,657	3,191	2,606	2,564	2,737	2,810	2,858	2,894	2,911	2,920	2,917	2,904	9.3%
Compensation of employees	389	428	426	418	417	420	424	429	436	444	452	460	469	9.4%
Operating surplus	2,153	2,229	2,765	2,188	2,147	2,317	2,386	2,428	2,458	2,467	2,469	2,457	2,436	9.3%

Source: FAPRI-Ireland GOLD Model.
Historical data, CSO.

Table A-I-2: Output Input and Income in Agriculture (WTO High Scenario)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2015 v 2004
	Euro millions													
Livestock	2,017	2,070	2,265	2,168	1,970	1,887	1,874	1,862	1,852	1,837	1,818	1,830	1,828	-18.7%
Of which: cattle	1,179	1,244	1,335	1,332	1,141	1,051	1,026	1,015	1,013	1,007	998	1,003	996	-27.6%
pigs	301	283	297	295	285	273	279	283	282	280	277	281	282	-7.6%
sheep and lambs	202	193	203	177	179	195	196	185	172	162	152	150	150	-27.0%
Livestock Products	1,450	1,470	1,374	1,370	1,221	1,185	1,158	1,148	1,139	1,120	1,114	1,110	1,106	-24.6%
Of which: milk	1,413	1,432	1,332	1,337	1,191	1,152	1,124	1,113	1,104	1,085	1,079	1,076	1,071	-24.9%
Crops	1,244	1,307	1,353	1,225	1,220	1,219	1,225	1,232	1,241	1,250	1,258	1,269	1,280	-4.5%
Of which: cereals	142	172	125	141	138	138	141	144	147	149	150	152	153	-15.1%
root crops	169	174	166	123	122	119	118	117	116	116	116	117	118	-28.6%
forage plants	621	640	682	657	661	665	669	674	679	682	686	689	692	1.5%
Goods output at producer prices	4,711	4,846	4,932	4,763	4,412	4,290	4,257	4,242	4,232	4,207	4,190	4,209	4,214	-16.6%
Agricultural services	248	248	261	266	271	276	283	289	296	302	307	313	319	23.2%
Subsidies less taxes on products	877	889	409	560	-39	-39	-39	-39	-39	-39	-39	-39	-39	-104.5%
Agricultural output at basic prices	5,836	5,983	5,602	5,589	4,643	4,528	4,500	4,492	4,489	4,470	4,458	4,483	4,493	-27.4%
Intermediate consumption	3,343	3,377	3,443	3,382	3,331	3,270	3,135	3,073	3,045	3,024	3,015	3,012	3,012	-12.7%
of which: feeding stuffs	956	923	864	830	796	762	725	698	679	656	640	631	622	-32.1%
fertilizers	341	371	364	347	330	320	312	308	306	304	304	303	304	-15.1%
energy	222	227	267	273	278	277	270	268	268	269	271	273	275	13.4%
forage plants	611	631	671	645	649	653	658	663	667	671	675	678	682	1.3%
agricultural services	248	248	261	266	271	276	283	289	296	302	307	313	319	23.2%
Gross value added at basic prices	2,493	2,606	2,158	2,207	1,312	1,258	1,366	1,420	1,444	1,445	1,443	1,471	1,481	-46.1%
Fixed capital consumption	638	643	669	645	635	630	627	627	630	638	651	667	685	7.6%
Net value added basic prices	1,855	1,964	1,489	1,562	677	628	738	792	814	807	793	805	796	-63.1%
Subsidies less taxes on production	616	578	1,702	1,755	1,928	1,881	1,872	1,872	1,871	1,871	1,871	1,871	1,871	214.9%
Factor income	2,471	2,542	3,191	3,317	2,605	2,509	2,611	2,664	2,685	2,679	2,664	2,676	2,668	-0.9%
Compensation of employees	378	389	426	422	418	417	419	423	428	434	441	449	457	8.6%
Operating surplus	2,093	2,153	2,765	2,895	2,187	2,092	2,192	2,241	2,258	2,245	2,223	2,227	2,211	-2.8%

Source: FAPRI-Ireland GOLD Model.
Historical data, CSO.

Table A-I-3: Percentage Change from Baseline (WTO High Scenario)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
Percentage change (scenario relative to Baseline)														
Livestock	0.0	0.0	0.0	0.0	0.0	-1.5	-4.2	-4.9	-6.0	-7.4	-9.0	-8.9	-9.2	-10.2
of which: cattle	0.0	0.0	0.0	0.0	0.0	-2.3	-5.7	-6.7	-7.8	-9.2	-10.8	-10.8	-11.5	-13.3
pigs	0.0	0.0	0.0	0.0	0.0	-0.6	-1.4	-1.3	-1.4	-1.8	-3.1	-2.3	-1.7	-2.5
sheep and lambs	0.0	0.0	0.0	0.0	0.0	-0.8	-6.1	-7.7	-13.1	-18.3	-23.0	-23.6	-23.1	-23.1
Livestock Products	0.0	0.0	-0.1	-0.1	-2.5	-4.5	-5.7	-6.8	-8.7	-9.6	-10.2	-11.0	-11.8	
of which: milk	0.0	0.0	0.0	0.0	-2.5	-4.6	-5.8	-6.9	-8.8	-9.7	-10.4	-11.2	-12.1	
Crops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	
of which: cereals	0.0	0.0	0.0	0.0	-0.4	-0.6	-0.3	0.1	0.6	0.6	1.5	2.3	3.1	
root crops	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.9	1.4	2.0	2.7	3.5	4.4	
forage plants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.3	-0.3	-0.4	
Goods output at producer prices	0.0	0.0	0.0	0.0	-1.4	-3.1	-3.7	-4.5	-5.7	-6.6	-6.7	-7.0	-7.6	
Agricultural services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.3	-0.4	
Subsidies less taxes on products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Agricultural output at basic prices	0.0	0.0	0.0	0.0	-1.3	-3.0	-3.5	-4.3	-5.3	-6.2	-6.3	-6.6	-7.2	
Intermediate consumption	0.0	0.0	0.0	0.0	-0.2	-0.3	-0.6	-0.9	-1.1	-1.5	-1.8	-2.0	-2.3	
of which: feeding stuffs	0.0	0.0	0.0	0.0	-0.4	-0.8	-1.1	-1.5	-2.0	-2.9	-3.2	-3.5	-3.8	
fertilizers	0.0	0.0	-0.1	-0.2	-0.5	-1.0	-1.4	-1.7	-2.1	-2.5	-2.7	-3.0	-3.2	
energy	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.3	-0.4	-0.5	-0.6	-0.7	-0.8	
forage plants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.3	-0.4	-0.4	
agricultural services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.3	-0.4	
Gross value added at basic prices	0.0	0.0	0.0	0.0	-4.2	-8.5	-9.4	-10.8	-13.1	-14.8	-14.5	-14.6	-15.9	
Fixed capital consumption	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.3	-0.4	-0.5	-0.6	-0.7	-0.7	
Net value added basic prices	0.0	0.0	-0.1	-0.1	-8.1	-14.6	-15.5	-17.5	-21.1	-23.8	-23.3	-23.9	-26.3	
Subsidies less taxes on production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Factor income	0.0	0.0	0.0	0.0	-2.2	-4.6	-5.2	-6.0	-7.4	-8.5	-8.4	-8.6	-9.4	
Compensation of employees	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.3	-0.4	-0.5	-0.6	-0.7	-0.7	-0.8	
Operating surplus	0.0	0.0	0.0	0.0	-2.6	-5.4	-6.0	-7.0	-8.7	-9.9	-9.8	-10.0	-11.0	

Source: FAPRI-Ireland GOLD Model.
Historical data, CSO.

Table A-I-4: Output Input and Income in Agriculture (WTO Moderate Scenario)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2015 v 2004
	Euro millions													
Livestock	2,070	2,218	2,265	1,970	1,914	1,944	1,943	1,943	1,928	1,900	1,885	1,862	1,832	-17.4%
Of which: cattle	1,244	1,345	1,335	1,141	1,074	1,084	1,081	1,088	1,078	1,053	1,034	1,009	978	-27.3%
pigs	283	301	297	285	274	282	286	285	283	282	283	282	280	-7.1%
sheep and lambs	193	203	203	179	197	202	194	185	178	171	170	170	169	-16.6%
Livestock Products	1,470	1,457	1,374	1,223	1,211	1,194	1,190	1,187	1,179	1,161	1,152	1,145	1,133	-22.2%
Of which: milk	1,432	1,417	1,332	1,191	1,177	1,160	1,155	1,150	1,142	1,125	1,116	1,109	1,096	-22.6%
Crops	1,307	1,353	1,353	1,220	1,220	1,225	1,232	1,240	1,248	1,257	1,267	1,277	1,289	-4.7%
Of which: cereals	172	182	125	138	139	142	144	147	149	150	151	152	152	-16.1%
root crops	174	167	166	122	119	117	116	115	115	115	115	116	117	-30.0%
forage plants	640	686	682	661	665	669	674	679	683	686	690	694	697	1.7%
Goods output at producer prices	4,846	5,027	4,932	4,413	4,345	4,364	4,365	4,370	4,355	4,318	4,304	4,285	4,254	-15.4%
Agricultural services	248	263	261	271	276	283	289	296	302	307	313	319	325	23.5%
Subsidies less taxes on products	889	879	409	-39	-39	-39	-39	-39	-39	-39	-39	-39	-39	-104.5%
Agricultural output at basic prices	5,983	6,169	5,602	4,645	4,582	4,607	4,615	4,627	4,618	4,586	4,578	4,565	4,540	-26.4%
Intermediate consumption	3,377	3,451	3,443	3,331	3,274	3,143	3,086	3,064	3,047	3,045	3,043	3,042	3,041	-11.9%
of which: feeding stuffs	923	904	864	796	764	730	705	688	665	653	643	633	624	-31.0%
fertilizers	371	358	364	330	321	314	311	309	308	307	307	307	307	-14.3%
energy	227	245	267	278	277	270	268	268	269	272	274	276	279	13.8%
forage plants	631	677	671	649	653	658	663	667	672	675	679	683	687	1.6%
agricultural services	248	263	261	271	276	283	289	296	302	307	313	319	325	23.5%
Gross value added at basic prices	2,606	2,718	2,158	1,314	1,308	1,464	1,529	1,562	1,570	1,542	1,535	1,523	1,499	-44.9%
Fixed capital consumption	643	656	669	635	630	628	629	631	640	653	668	687	707	7.8%
Net value added basic prices	1,964	2,063	1,489	679	678	836	901	931	930	889	866	836	792	-61.6%
Subsidies less taxes on production	578	594	1,702	1,928	1,881	1,872	1,872	1,871	1,871	1,871	1,871	1,871	1,871	214.9%
Factor income	2,542	2,657	3,191	2,607	2,559	2,708	2,772	2,802	2,801	2,760	2,738	2,707	2,663	0.2%
Compensation of employees	389	428	426	418	417	420	424	429	435	442	450	458	466	8.8%
Operating surplus	2,153	2,229	2,765	2,189	2,142	2,289	2,349	2,373	2,366	2,318	2,288	2,249	2,197	-1.4%

Source: FAPRI-Ireland GOLD Model.
Historical data, CSO.

Table A-I-5: Percentage Change from Baseline (WTO Moderate Scenario)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Percentage change (scenario relative to Baseline)													
Livestock	0.0	0.0	0.0	0.0	-0.1	-0.6	-0.8	-1.4	-2.8	-4.9	-6.2	-7.5	-8.8
of which: cattle	0.0	0.0	0.0	0.0	-0.1	-0.4	-0.6	-1.1	-2.8	-5.8	-8.1	-10.4	-12.8
pigs	0.0	0.0	0.0	0.0	0.0	-0.2	-0.2	-0.4	-0.8	-1.2	-1.4	-1.6	-2.0
sheep and lambs	0.0	0.0	0.0	0.0	-0.1	-3.1	-3.1	-7.0	-10.5	-13.3	-13.4	-12.5	-12.1
Livestock Products	0.0	0.0	0.0	0.0	-0.4	-1.5	-2.2	-2.9	-3.9	-5.8	-6.9	-7.9	-9.1
of which: milk	0.0	0.0	0.0	0.0	-0.4	-1.6	-2.3	-3.0	-4.0	-6.0	-7.1	-8.1	-9.3
Crops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3
of which: cereals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.7	1.3	1.9
root crops	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.8	1.2	1.7	2.3
forage plants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2
Goods output at producer prices	0.0	0.0	0.0	0.0	-0.1	-0.7	-0.9	-1.4	-2.3	-3.8	-4.6	-5.4	-6.3
Agricultural services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2
Subsidies less taxes on products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Agricultural output at basic prices	0.0	0.0	0.0	0.0	-0.1	-0.7	-0.9	-1.3	-2.2	-3.5	-4.4	-5.1	-5.9
Intermediate consumption	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.3	-0.5	-0.8	-1.1	-1.4
of which: feeding stuffs	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.3	-0.6	-1.0	-1.3	-1.8	-2.2
fertilizers	0.0	0.0	-0.1	-0.2	-0.3	-0.4	-0.5	-0.7	-0.9	-1.3	-1.7	-2.0	-2.4
energy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.4	-0.5
forage plants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2
agricultural services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2
Gross value added at basic prices	0.0	0.0	0.0	0.1	-0.4	-1.9	-2.4	-3.5	-5.6	-9.0	-10.7	-12.3	-14.0
Fixed capital consumption	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.3	-0.4	-0.5
Net value added basic prices	0.0	0.0	0.0	0.1	-0.8	-3.3	-4.0	-5.6	-9.0	-14.5	-17.4	-20.1	-23.4
Subsidies less taxes on production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Factor income	0.0	0.0	0.0	0.0	-0.2	-1.0	-1.3	-1.9	-3.2	-5.2	-6.3	-7.2	-8.3
Compensation of employees	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.3	-0.4	-0.5	-0.5
Operating surplus	0.0	0.0	0.0	0.0	-0.2	-1.2	-1.6	-2.3	-3.7	-6.1	-7.3	-8.5	-9.8

Source: FAPRI-Ireland GOLD Model.
Historical data, CSO.

Table A-I-6: Output Input and Income in Agriculture (WTO Low Scenario)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2015 v 2004
	Euro millions													
Livestock	2,070	2,218	2,265	1,970	1,914	1,945	1,943	1,945	1,947	1,951	1,956	1,933	1,903	-14.2%
Of which: cattle	1,244	1,345	1,335	1,141	1,074	1,084	1,082	1,090	1,095	1,101	1,102	1,079	1,048	-22.1%
pigs	283	301	297	285	274	282	286	285	284	284	286	284	282	-6.4%
sheep and lambs	193	203	203	179	197	202	193	184	177	171	169	168	167	-17.8%
Livestock Products	1,470	1,457	1,374	1,223	1,212	1,199	1,198	1,195	1,192	1,189	1,183	1,180	1,166	-20.0%
Of which: milk	1,432	1,417	1,332	1,191	1,178	1,164	1,162	1,159	1,156	1,152	1,146	1,144	1,129	-20.3%
Crops	1,307	1,353	1,353	1,222	1,221	1,227	1,234	1,242	1,250	1,258	1,267	1,277	1,288	-4.8%
Of which: cereals	172	182	125	139	140	143	145	148	150	150	151	152	152	-16.4%
root crops	174	167	166	123	120	118	117	116	116	115	116	116	116	-30.2%
forage plants	640	686	682	661	665	669	674	679	682	686	690	693	697	1.7%
Goods output at producer prices	4,846	5,027	4,932	4,415	4,348	4,370	4,375	4,382	4,389	4,398	4,406	4,391	4,356	-13.3%
Agricultural services	248	263	261	271	276	283	289	296	302	307	313	319	325	23.4%
Subsidies less taxes on products	889	879	409	-39	-39	-39	-39	-39	-39	-39	-39	-39	-39	-104.5%
Agricultural output at basic prices	5,983	6,169	5,602	4,646	4,585	4,614	4,625	4,639	4,651	4,666	4,680	4,671	4,642	-24.8%
Intermediate consumption	3,377	3,451	3,443	3,336	3,279	3,148	3,092	3,071	3,055	3,055	3,057	3,061	3,063	-11.2%
Of which: feeding stuffs	923	904	864	796	765	730	706	689	667	656	647	639	630	-30.3%
fertilizers	371	358	364	334	324	318	315	313	312	312	312	313	313	-12.6%
energy	227	245	267	278	277	271	268	268	269	272	274	277	280	14.1%
forage plants	631	677	671	649	653	658	663	667	672	675	679	683	687	1.5%
agricultural services	248	263	261	271	276	283	289	296	302	307	313	319	325	23.4%
Gross value added at basic prices	2,606	2,718	2,158	1,310	1,306	1,465	1,533	1,568	1,596	1,611	1,623	1,610	1,579	-41.9%
Fixed capital consumption	643	656	669	635	630	628	629	631	640	653	669	688	708	8.1%
Net value added basic prices	1,964	2,063	1,489	675	676	837	904	937	956	958	954	922	871	-57.8%
Subsidies less taxes on production	578	594	1,702	1,928	1,881	1,872	1,872	1,871	1,871	1,871	1,871	1,871	1,871	214.9%
Factor income	2,542	2,657	3,191	2,603	2,557	2,710	2,776	2,808	2,827	2,829	2,825	2,793	2,742	3.2%
Compensation of employees	389	428	426	418	417	420	424	429	436	443	451	459	467	9.0%
Operating surplus	2,153	2,229	2,765	2,185	2,140	2,290	2,352	2,379	2,391	2,386	2,374	2,334	2,275	2.1%

Source: FAPRI-Ireland GOLD Model.
Historical data, CSO.

Table A-I-7: Percentage Change from Baseline (WTO Low Scenario)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
Percentage change (scenario relative to Baseline)														
Livestock	0.0	0.0	0.0	0.0	0.0	-0.1	-0.6	-0.7	-1.3	-1.9	-2.3	-2.7	-3.9	-5.3
of which: cattle	0.0	0.0	0.0	0.0	0.0	-0.1	-0.4	-0.6	-0.9	-1.2	-1.5	-2.0	-4.2	-6.6
Pigs	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.2	-0.3	-0.4	-0.5	-0.6	-0.9	-1.3
sheep and lambs	0.0	0.0	0.0	0.0	0.0	0.0	-3.2	-3.3	-7.3	-10.7	-13.6	-14.1	-13.6	-13.4
Livestock Products	0.0	0.0	0.0	0.0	0.0	-0.3	-1.2	-1.6	-2.2	-2.8	-3.6	-4.4	-5.0	-6.5
of which: milk	0.0	0.0	0.0	0.0	0.0	-0.3	-1.2	-1.6	-2.2	-2.9	-3.6	-4.5	-5.2	-6.6
Crops	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
of which: cereals	0.0	0.0	0.8	0.8	0.7	0.7	0.7	0.7	0.8	0.8	0.9	1.1	1.3	1.5
root crops	0.0	0.0	0.2	0.3	0.5	0.6	0.7	0.8	1.0	1.1	1.1	1.4	1.7	2.1
forage plants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.2
Goods output at producer prices	0.0	0.0	0.0	0.0	0.0	-0.1	-0.6	-0.7	-1.1	-1.6	-2.0	-2.4	-3.1	-4.0
Agricultural services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2
Subsidies less taxes on products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Agricultural output at basic prices	0.0	0.0	0.0	0.0	0.0	-0.1	-0.5	-0.7	-1.1	-1.5	-1.9	-2.2	-2.9	-3.8
Intermediate consumption	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	-0.1	-0.2	-0.3	-0.5	-0.5	-0.6
of which: feeding stuffs	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.4	-0.6	-0.7	-1.0	-1.3	
fertilizers	0.0	0.0	0.8	0.9	0.9	0.8	0.7	0.6	0.4	0.3	0.1	-0.1	-0.4	
energy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.2	
forage plants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.3	
agricultural services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2	
Gross value added at basic prices	0.0	0.0	-0.1	-0.2	-0.5	-1.8	-2.1	-3.1	-4.1	-4.9	-5.6	-7.2	-9.4	
Fixed capital consumption	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	
Net value added basic prices	0.0	0.0	-0.1	-0.4	-1.0	-3.2	-3.6	-5.1	-6.5	-7.9	-9.1	-11.9	-15.7	
Subsidies less taxes on production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Factor income	0.0	0.0	-0.1	-0.1	-0.3	-1.0	-1.2	-1.7	-2.3	-2.8	-3.3	-4.3	-5.6	
Compensation of employees	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	
Operating surplus	0.0	0.0	-0.1	-0.1	-0.3	-1.2	-1.4	-2.0	-2.7	-3.3	-3.8	-5.0	-6.6	

Source: FAPRI-Ireland GOLD Model.
Historical data, CSO.

Annex II Baseline Commodity Supply and Use Projections

A-II-1 Baseline EU 25 Cereal Supply and Use Projections

EU-25 wheat supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015
Soft wheat														
Area harvested	22,157	23,337	23,124	22,583	22,296	22,222	thousand hectares			22,417	22,493	22,550	22,581	-3.2%
Yield	4.8	5.8	5.4	5.5	5.5	5.5	5.6	5.6	5.6	5.7	5.7	5.7	5.8	0.0%
Production	105	134	126	123	123	123	125	125	126	127	128	129	130	-3.2%
Beginning stocks	18	12	27	26	23	20	18	18	18	18	18	18	18	52.0%
Imports	7	7	7	7	7	7	7	7	7	7	6	6	6	-13.3%
Total supply	130	154	160	155	152	150	150	150	150	151	152	154	155	0.7%
Domestic use	104	110	116	117	117	117	118	118	119	119	120	120	121	9.7%
Feed	46	52	56	56	56	56	56	56	57	57	57	58	58	12.5%
Other	59	59	61	61	61	61	61	62	62	62	62	63	63	7.2%
Exports	13	17	18	16	15	14	14	14	14	14	14	15	15	-9.9%
Ending stocks	12	27	26	23	20	18	18	18	18	18	18	18	19	-29.8%
Loss, statistical disc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Net exports	7	9	11	9	8	8	8	8	8	8	8	8	9	-7.2%
Set-aside rate	10	5	10	10	10	10	10	10	10	10	10	10	10	100.0%
Intervention price	101	101	101	101	101	101	101	101	101	101	101	101	101	0.0%
Market price	129	105	101	103	105	107	108	108	109	109	108	107	107	1.2%

EU-25 barley and maize supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015
Barley														
Area harvested	13,363	12,954	12,721	13,276	13,357	13,134	thousand hectares			12,896	12,873	12,859	12,850	-0.8%
Yield	4.2	4.8	4.0	4.4	4.4	4.5	4.5	4.6	4.6	4.7	4.7	4.7	4.8	0.6%
Production	56	62	51	58	59	59	59	59	60	60	61	61	61	-0.2%
Beginning stocks	10	6	12	10	10	10	10	10	10	11	11	11	11	77.4%
Imports	1	1	2	1	1	1	1	1	1	1	1	1	1	-5.9%
Total supply	67	69	65	70	71	71	70	71	71	72	72	73	74	6.9%
Domestic use	56	50	49	51	52	52	52	52	52	52	52	52	52	3.7%
Feed	41	38	38	39	40	40	40	40	40	40	40	40	41	5.6%
Other	14	12	12	12	12	12	12	12	12	12	12	12	12	-2.6%
Exports	5	6	6	9	8	8	8	9	9	9	9	10	10	60.7%
Ending stocks	6	12	10	10	10	10	10	10	11	11	11	11	12	-6.9%
Net exports	4	5	4	7	7	7	7	7	8	8	8	9	9	74.8%
Set-aside rate	10	10	5	10	10	10	10	10	10	10	10	10	10	0.0%
Intervention price	101	101	101	101	101	101	101	101	101	101	101	101	101	0.0%
Market price	117	103	105	103	103	104	105	105	105	105	105	105	104	1.5%
Maize for grain														
Area harvested	6,213	6,571	6,213	6,097	6,104	6,108	thousand hectares			6,161	6,164	6,163	6,167	-6.2%
Yield	6.6	8.2	8.0	8.1	8.2	8.2	8.3	8.4	8.4	8.5	8.6	8.7	8.7	6.3%
Production	41	54	50	49	50	50	51	52	52	52	53	53	54	-0.3%
Beginning stocks	9	7	10	9	8	8	8	8	8	8	8	9	9	25.7%
Imports	6	3	7	7	7	6	6	7	7	7	7	7	7	134.8%
Total supply	56	64	67	65	65	65	65	66	67	68	68	69	70	9.2%
Domestic use	48	51	52	51	51	51	52	52	53	53	54	54	54	6.2%
Feed	38	42	42	42	42	42	43	43	43	44	44	44	45	5.9%
Other	9	9	9	9	9	9	9	9	10	10	10	10	10	7.7%
Exports	2	3	6	6	6	5	6	6	6	6	6	6	7	160.7%
Ending stocks	7	10	9	8	8	8	8	8	8	8	9	9	9	-13.9%
Net exports	-4	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	16.9%
Set-aside rate	10	5	10	10	10	10	10	10	10	10	10	10	10	100.0%
Intervention price	101	101	101	101	101	101	101	101	101	101	101	101	101	0.0%
Market price	142	115	107	113	115	115	114	114	113	112	111	110	108	-5.7%

A-II-2 Baseline Irish Cereal Supply and Use Projections

Irish wheat supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015		
Wheat																
Wheat area harvested	95.7	94.2	83.4	81.0	80.4	79.6	thousand hectares		78.1	77.8	77.3	76.6	75.8	-19.5%		
Wheat yield	7.3	8.8	8.9	9.1	9.2	9.3	tonnes per hectare		9.5	9.6	9.6	9.6	9.6	10.0%		
Production	703.2	824.0	741.2	739.8	738.3	742.4	thousand tonnes		744.9	753.5	751.9	749.1	744.4	737.9	729.9	-11.4%
Beginning stocks	11.6	39.5	60.7	53.7	49.7	47.1	45.6	44.6	44.3	43.6	42.4	41.0	39.3	-0.5%		
Imports	811.6	667.7	669.9	692.0	698.8	690.1	686.7	685.7	685.4	695.8	709.7	726.0	744.4	11.5%		
Total supply	1,526.5	1,531.2	1,471.8	1,485.5	1,486.8	1,479.5	1,477.2	1,483.8	1,481.6	1,488.5	1,496.5	1,504.8	1,513.6	-1.2%		
Domestic use	1,320.3	1,303.9	1,251.4	1,269.1	1,273.1	1,267.2	1,266.0	1,272.8	1,271.4	1,279.3	1,288.8	1,298.9	1,309.7	0.4%		
Feed	909.3	861.4	772.0	769.7	754.1	728.4	707.8	695.3	678.4	671.3	665.3	660.0	655.1	-23.9%		
Other	411.1	442.5	479.3	499.4	518.9	538.8	558.2	577.5	592.9	608.1	623.5	638.9	654.6	47.9%		
Exports	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	0.0%		
Ending stocks	39.5	60.7	53.7	49.7	47.1	45.6	44.6	44.3	43.6	42.4	41.0	39.3	37.2	-38.6%		
Loss, statistical disc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%		
Prices	Jan.-Dec. average															
Feed wheat	120.0	107.8	109.9	108.8	108.8	109.4	euro/tonne		110.0	110.1	110.1	109.9	109.7	109.6	109.3	1.4%

Irish barley supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015		
Barley																
Barley area harvested	183	168	151	147	146	146	thousand hectares		146	147	148	149	150	150	151	-10.2%
Barley yield	6.5	6.6	6.8	6.8	6.9	6.9	tonnes per hectare		6.9	6.9	6.9	6.9	6.9	6.9	6.9	3.7%
Production	1,198	1,116	1,025	1,004	1,001	1,003	thousand tonnes		1,009	1,015	1,020	1,025	1,030	1,035	1,040	-6.9%
Beginning stocks	67	110	118	113	109	107	107	107	107	107	107	107	107	107	107	-2.1%
Imports	110	239	221	239	240	230	222	220	212	211	211	212	214	214	-10.7%	
Total supply	1,375	1,465	1,364	1,357	1,350	1,341	1,338	1,341	1,339	1,343	1,349	1,354	1,361	1,361	-7.1%	
Domestic use	1,155	1,303	1,188	1,203	1,199	1,181	1,170	1,170	1,160	1,164	1,169	1,176	1,183	1,183	-9.2%	
Feed	865	916	793	789	768	732	704	686	663	653	645	637	631	631	-31.2%	
Other	290	386	395	414	431	449	467	484	497	511	524	538	552	552	43.0%	
Exports	102	45	63	45	44	53	61	64	72	73	72	72	70	70	57.4%	
Ending stocks	118	118	113	109	107	107	107	107	107	107	107	107	108	108	-8.7%	
Market prices	euro per tonne, Jan.-Dec.															
Feed barley	111.3	92.7	106.1	104.9	105.0	105.6	106.2	106.3	106.3	106.1	105.9	105.8	105.5	105.5	13.8%	
Malt barley	123.7	103.0	123.9	122.7	122.7	123.4	123.9	124.1	124.0	123.9	123.7	123.6	123.3	123.3	19.7%	

A-II-3 Baseline EU 25 Livestock and Meat Supply and Use Projections

EU 25 livestock supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Cattle														
	million head													
Beginning inventories	88.76	87.49	85.72	85.71	84.82	83.71	82.57	81.49	80.49	79.60	78.81	78.13	77.53	-11.4%
Dairy cows	24.46	23.96	23.37	23.18	22.97	22.70	22.41	22.11	21.81	21.52	21.24	20.96	20.69	-13.7%
Suckler cows	12.03	12.01	12.07	12.11	11.61	11.25	11.09	11.00	10.98	11.01	11.07	11.16	11.25	-6.3%
Cattle slaughter	29.17	29.50	28.68	29.72	29.43	28.94	28.66	28.27	27.91	27.59	27.31	27.07	26.87	-8.9%
Slaughter weight	kilograms per head													
	277.82	277.56	277.73	275.27	274.86	275.40	275.44	275.69	275.95	276.23	276.55	276.81	277.03	-0.2%
Pigs														
	million head													
Beginning inventories	154.47	152.90	151.76	154.60	158.70	157.15	156.30	157.17	157.70	157.57	157.54	157.86	158.28	3.5%
Sows	15.74	15.21	14.87	15.68	15.55	15.27	15.31	15.38	15.33	15.28	15.26	15.27	15.27	0.4%
Pig slaughter	241.52	240.62	240.96	247.66	250.78	248.35	248.14	249.52	250.00	249.85	250.05	250.73	251.35	4.5%
Slaughter weight	kilograms per head													
	88.72	88.76	88.99	88.38	88.29	88.67	88.89	88.97	89.12	89.33	89.55	89.73	89.88	1.3%
Sheep														
	million head													
Beginning inventories	89.92	89.57	89.38	87.16	84.84	84.32	85.04	84.92	84.79	84.86	84.93	85.06	85.07	-5.0%
Ewes	66.62	66.62	66.08	63.86	62.39	62.02	62.56	62.08	61.93	61.89	61.84	61.85	61.75	-7.3%
Sheep slaughter	64.37	65.13	66.28	63.81	61.22	59.88	61.25	60.77	60.50	60.50	60.43	60.56	60.49	-7.1%
Slaughter weight	16.48	16.44	16.50	16.60	16.76	16.86	16.93	16.97	17.03	17.07	17.12	17.16	17.19	4.6%

EU 25 meat supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Beef and veal														
	thousand tonnes													
Production	8,104	8,187	7,964	8,182	8,089	7,971	7,894	7,793	7,702	7,622	7,552	7,494	7,445	-9.1%
Non-EU imports	485	550	626	615	625	640	648	656	664	670	673	672	673	22.3%
Domestic use	8,296	8,259	8,200	8,270	8,196	8,134	8,073	7,989	7,914	7,845	7,778	7,712	7,652	-7.3%
Non-EU exports	492	513	396	523	515	475	468	459	450	446	445	453	463	-9.8%
Stock change	-199	-36	-6	3	3	1	1	1	1	1	1	2	2	-105.7%
Intervention/SPS stocks	20	0	0	0	0	0	0	0	0	0	0	0	0	
Pig meat														
Production	21,427	21,359	21,443	21,887	22,141	22,022	22,057	22,201	22,280	22,319	22,392	22,498	22,590	5.8%
Non-EU imports	30	26	30	30	30	30	30	30	30	30	30	30	30	15.8%
Domestic use	20,109	20,120	20,117	20,559	20,811	20,700	20,703	20,847	20,941	20,994	21,042	21,117	21,204	5.4%
Non-EU exports	1,341	1,334	1,371	1,328	1,344	1,357	1,384	1,378	1,363	1,350	1,377	1,406	1,410	5.7%
Stock change	6	-69	-14	30	16	-5	0	7	6	4	4	5	6	-109.1%
Poultry														
Production	10,368	10,522	10,669	10,627	10,662	10,774	10,880	10,970	11,065	11,170	11,279	11,383	11,479	9.1%
Non-EU imports	595	445	450	454	456	458	460	462	464	466	468	469	471	5.9%
Domestic use	9,982	9,935	10,105	10,071	10,126	10,249	10,348	10,435	10,528	10,630	10,737	10,837	10,930	10.0%
Non-EU exports	973	1,031	1,007	989	982	981	984	988	992	995	1,000	1,005	1,009	-2.1%
Stock change	9	1	7	20	10	3	8	10	10	10	10	11	10	1195.6%
Sheep meat														
Production	1,061	1,071	1,094	1,059	1,026	1,009	1,037	1,031	1,030	1,033	1,034	1,039	1,040	-2.9%
Non-EU imports	272	275	275	279	288	296	294	298	301	304	307	309	312	13.5%
Domestic use	1,324	1,337	1,356	1,330	1,306	1,298	1,322	1,321	1,323	1,329	1,333	1,340	1,343	0.4%
Non-EU exports	8	8	8	8	8	8	8	8	8	8	8	8	8	0.0%
Stock change	0	0	0	0	-1	-1	1	0	0	0	0	0	0	
Consumption														
	kilograms per capita, cwe													
Beef and veal	16.6	16.4	16.3	16.4	16.2	16.1	15.9	15.7	15.6	15.4	15.3	15.1	15.0	-8.8%
Pig meat	40.1	40.1	40.0	40.7	41.2	40.9	40.8	41.1	41.2	41.3	41.3	41.4	41.5	3.7%
Poultry meat	19.9	19.8	20.1	20.0	20.0	20.2	20.4	20.6	20.7	20.9	21.1	21.3	21.4	8.3%
Sheep meat	2.6	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	-1.2%
Total	79.3	79.0	79.0	79.7	80.0	79.7	79.8	79.9	80.1	80.2	80.3	80.4	80.6	2.1%
Prices														
	euro per 100 kilograms													
Cattle reference	270	270	287	261	264	274	278	282	287	291	295	298	299	11.0%
Pig meat reference	127	138	141	126	123	130	131	130	130	131	131	131	130	-5.7%
Chicken	145	146	140	136	136	138	138	138	137	137	136	135	134	-8.6%
Sheep meat reference	419	409	403	409	437	462	445	453	458	460	463	462	464	13.5%
Beef intervention	206	195	185	175	175	175	175	175	175	175	175	175	175	-10.5%

A-II-4 Baseline Irish Livestock Supply and Use Projections

Irish livestock supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Cattle														
	million head													
Beginning inventories	6.33	6.22	6.24	6.18	5.83	5.63	5.52	5.46	5.40	5.34	5.29	5.24	5.19	-16.7%
Dairy cows	1.13	1.14	1.12	1.08	1.08	1.06	1.05	1.03	1.02	1.01	1.00	0.99	0.98	-14.1%
Suckler cows	1.15	1.15	1.15	1.16	1.04	0.99	0.97	0.96	0.96	0.95	0.94	0.94	0.93	-19.0%
Other cattle	4.05	3.94	3.97	3.94	3.71	3.58	3.51	3.46	3.42	3.38	3.35	3.32	3.28	-16.7%
Calf crop	2.13	2.13	2.13	2.10	1.98	1.92	1.88	1.87	1.85	1.83	1.81	1.80	1.78	-16.6%
Cattle imports	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-100.0%
Total supply	8.46	8.36	8.37	8.28	7.80	7.55	7.41	7.33	7.25	7.17	7.10	7.03	6.97	-16.7%
Cattle slaughter	1.86	1.92	1.95	2.19	1.92	1.79	1.71	1.70	1.68	1.67	1.65	1.64	1.62	-15.5%
Cow slaughter	0.33	0.33	0.34	0.61	0.45	0.37	0.32	0.32	0.31	0.30	0.30	0.29	0.29	-12.8%
Calf slaughter	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0%
Other slaughter	1.52	1.58	1.60	1.57	1.47	1.41	1.39	1.38	1.37	1.36	1.35	1.34	1.33	-16.1%
Cattle exports	0.22	0.14	0.18	0.20	0.19	0.18	0.18	0.18	0.17	0.17	0.16	0.16	0.15	11.1%
Destruction, death loss	0.16	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	-16.7%
Ending inventories	6.22	6.24	6.18	5.83	5.63	5.52	5.46	5.40	5.34	5.29	5.24	5.19	5.14	-17.7%
	kilograms per head													
Slaughter weight	301.6	311.1	309.2	307.7	301.8	300.9	301.2	301.2	301.3	301.4	301.4	301.4	301.2	-3.2%
	1000 head													
Live cattle exports	218	139	175	202	194	185	180	175	171	166	162	158	154	11.1%
Calves	78	45	65	69	52	42	37	34	31	28	25	22	20	-55.6%
Non-calves to the EU	146	82	98	121	130	131	131	129	128	126	124	123	122	49.0%
Non-calves to the ROW	-6	12	12	12	12	12	12	12	12	12	12	12	12	0.0%
Pigs														
	million head													
Beginning inventories	1.78	1.73	1.76	1.76	1.72	1.66	1.63	1.63	1.62	1.61	1.60	1.59	1.59	-8.5%
Sows	0.183	0.176	0.179	0.179	0.178	0.176	0.176	0.177	0.176	0.176	0.176	0.176	0.176	0.1%
Other pigs	1.60	1.56	1.58	1.58	1.54	1.48	1.46	1.45	1.44	1.43	1.42	1.42	1.41	-9.4%
Pig crop	3.16	3.23	3.32	3.34	3.26	3.21	3.22	3.23	3.22	3.21	3.21	3.21	3.20	-0.8%
Pig imports	0.06	0.02	0.05	0.10	0.10	0.09	0.08	0.09	0.09	0.09	0.08	0.08	0.09	325.8%
Total supply	5.00	4.98	5.12	5.20	5.08	4.95	4.94	4.94	4.93	4.90	4.89	4.89	4.87	-2.2%
Pig slaughter	2.87	2.73	2.87	2.99	2.96	2.86	2.85	2.86	2.86	2.85	2.84	2.84	2.84	4.0%
Pig exports	0.45	0.46	0.49	0.48	0.47	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	-1.3%
Destruction, death loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Ending inventories	1.73	1.76	1.76	1.72	1.66	1.63	1.63	1.62	1.61	1.60	1.59	1.59	1.57	-10.5%
	kilograms per head													
Slaughter weight	75.6	75.3	75.7	75.8	76.0	76.2	76.4	76.6	76.8	76.9	77.1	77.2	77.4	2.7%
Sheep														
	million head													
Beginning inventories	4.83	4.85	4.65	4.31	4.34	4.34	4.33	4.24	4.18	4.14	4.09	4.05	4.00	-17.6%
Ewes	3.73	3.68	3.53	3.19	3.27	3.27	3.27	3.19	3.14	3.11	3.08	3.05	3.01	-18.1%
Other sheep	1.10	1.17	1.12	1.12	1.08	1.07	1.06	1.05	1.04	1.02	1.01	1.00	0.98	-16.0%
Lamb crop	3.81	3.55	3.41	3.08	3.15	3.16	3.16	3.08	3.04	3.01	2.97	2.94	2.91	-18.1%
Sheep imports	0.02	0.02	0.02	0.00	0.03	0.03	0.03	0.02	0.02	0.03	0.03	0.03	0.03	4.4%
Total supply	8.66	8.43	8.07	7.40	7.53	7.52	7.51	7.34	7.24	7.17	7.09	7.02	6.93	-17.8%
Sheep slaughter	3.16	3.45	3.44	2.78	2.91	2.91	2.99	2.88	2.83	2.81	2.78	2.76	2.72	-21.2%
Sheep exports	0.06	0.10	0.11	0.07	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	-27.4%
Destruction, death loss	0.59	0.23	0.22	0.20	0.21	0.21	0.21	0.20	0.20	0.20	0.19	0.19	0.19	-17.6%
Ending inventories	4.85	4.65	4.31	4.34	4.34	4.33	4.24	4.18	4.14	4.09	4.05	4.00	3.95	-15.0%
	kilograms per head													
Slaughter weight	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	0.0%

A-II-5 Baseline Irish Meat Supply and Use Projections

Irish meat supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
thousand tonnes														
Beef and veal														
Production	561	598	602	673	579	537	516	511	507	502	498	494	489	-18.1%
Imports	18	26	36	48	54	57	58	61	63	65	66	66	71	171.6%
Domestic use	84	88	90	96	100	103	103	103	102	101	100	99	97	11.1%
Exports	500	536	548	624	533	492	471	468	467	466	464	461	463	-13.6%
Intervention stocks	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pig meat														
Production	217	206	217	227	225	218	218	219	219	219	219	219	220	6.7%
Imports	50	59	61	67	69	67	68	69	70	71	72	73	74	25.6%
Domestic use	146	146	146	150	155	158	160	162	163	165	166	167	167	14.6%
Exports	121	119	132	143	139	127	126	127	126	125	125	126	127	6.3%
Ending stocks	15	15	15	15	15	15	15	15	15	15	15	15	15	0.0%
Broiler meat														
Production	95	73	72	72	73	74	74	75	76	77	77	78	79	7.3%
Imports	37	38	40	40	39	38	37	36	36	36	37	38	39	3.5%
Domestic use	108	92	104	104	103	103	102	102	102	103	104	105	107	16.0%
Exports	24	19	8	8	8	8	9	9	9	10	10	10	11	-42.9%
Ending stocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Other poultry meat														
Production	38	37	36	37	37	37	38	38	38	39	39	39	40	7.3%
Imports	19	19	20	20	19	19	18	18	18	18	18	19	19	3.5%
Domestic use	24	42	33	32	32	32	32	32	32	33	33	34	35	-16.8%
Exports	33	14	23	24	24	24	24	24	24	24	24	24	24	76.0%
Ending stocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Sheep meat														
Production	63	69	69	55	58	58	60	58	56	56	55	55	54	-21.2%
Imports	2	2	2	2	2	2	2	2	2	2	2	2	2	0.0%
Domestic use	21	29	31	28	26	26	27	27	27	27	27	27	27	-6.7%
Exports	44	42	40	29	34	34	34	33	32	31	30	30	29	-30.2%
Stock change	0	0	0	0	0	0	0	0	0	0	0	0	0	
kilograms per capita, cwe														
Consumption														
Beef and veal	21	22	22	24	24	25	24	24	24	23	23	22	22	-2.3%
Pig meat	37	37	36	37	38	38	38	38	38	38	37	37	37	0.8%
Broiler meat	27	23	26	26	25	25	24	24	24	23	23	24	24	2.0%
Other poultry meat	6	11	8	8	8	8	8	7	7	7	8	8	8	-26.8%
Sheep meat	5	7	8	7	6	6	6	6	6	6	6	6	6	-18.0%
Total	97	100	100	101	101	101	101	99	99	98	97	96	96	-3.9%
euro per 100 kilograms														
Market prices														
Cattle reference	109.7	115.8	110.0	95.2	96.6	101.1	102.7	104.8	106.8	108.7	110.5	111.7	112.4	-3.0%
Pig meat	126.0	137.0	134.4	121.5	119.2	125.5	127.1	125.9	125.8	126.4	127.0	126.7	126.1	-8.0%
Sheep meat representative	360.4	347.8	316.9	347.8	373.0	396.1	381.1	387.6	392.2	394.1	397.0	396.4	398.2	14.5%
euro per pair														
Chicken	3.08	2.83	2.72	2.65	2.65	2.69	2.69	2.68	2.67	2.66	2.65	2.63	2.61	-7.6%

A-II-6 Baseline EU 25 Dairy Commodity Supply and Use Projections

EU 25 dairy supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Dairy cows	24,456	23,963	23,247	23,043	22,802	22,511	22,205	21,908	21,619	21,334	21,054	20,779	20,511	-14.4%
Production/cow	5,898	5,994	6,201	6,260	6,328	6,399	6,472	6,547	6,621	6,695	6,770	6,846	6,920	15.5%
Fluid milk														
Cow's milk Production	144.24	143.64	144.15	144.25	144.29	144.04	143.72	143.42	143.13	142.84	142.55	142.25	141.94	-1.2%
Milk quota			138.05	139.02	139.50	139.50	139.50	139.50	139.50	139.50	139.50	139.50	139.50	
Other milk production	3.34	3.33	3.34	3.35	3.36	3.37	3.38	3.39	3.40	3.41	3.42	3.43	3.44	3.3%
Fluid consumption	40.32	40.37	41.39	41.47	41.36	41.17	40.95	40.73	40.52	40.30	40.08	39.87	39.66	-1.8%
Manufacturing use	100.94	100.28	99.80	99.85	100.02	100.04	100.01	100.01	100.01	100.01	100.01	100.00	99.97	-0.3%
Feed use, net exports	6.33	6.32	6.30	6.28	6.26	6.20	6.14	6.07	6.00	5.94	5.87	5.81	5.75	-9.0%
Cheese														
Production	8,162	8,264	8,362	8,477	8,537	8,588	8,631	8,679	8,725	8,767	8,811	8,854	8,894	7.6%
Imports	138	141	145	147	149	151	153	155	156	158	160	162	164	16.1%
Domestic use	7,726	7,807	7,908	8,033	8,102	8,148	8,186	8,223	8,263	8,299	8,338	8,374	8,415	7.8%
Exports	579	569	583	577	576	585	593	607	614	622	630	638	640	12.5%
Ending stocks	463	492	509	524	533	539	543	547	551	554	558	562	565	14.9%
Butter														
Production	2,176	2,123	2,103	2,081	2,082	2,076	2,070	2,064	2,059	2,053	2,045	2,038	2,031	-4.4%
Imports	93	112	121	121	121	121	121	121	121	121	121	121	121	7.8%
Domestic use	1,902	1,946	1,932	1,979	1,992	1,975	1,958	1,941	1,924	1,906	1,889	1,871	1,854	-4.7%
Exports	331	343	299	271	248	238	239	245	254	264	273	284	292	-14.8%
Ending stocks	265	212	205	156	119	103	97	96	98	102	107	111	117	-44.8%
Skim powder														
Production	1,442	1,240	1,268	1,210	1,206	1,191	1,179	1,168	1,157	1,145	1,130	1,117	1,103	-11.1%
Imports	58	61	61	61	61	61	61	61	61	61	61	61	61	0.0%
Domestic use	1,189	1,200	1,208	1,202	1,166	1,158	1,145	1,133	1,120	1,108	1,097	1,085	1,074	-10.5%
Exports	290	241	174	121	104	94	94	95	94	95	95	97	94	-61.2%
Ending stocks	402	262	210	157	154	154	154	155	158	162	162	158	154	-41.1%
Whole powder														
Production	875	815	766	752	746	742	738	734	729	730	731	733	734	-9.9%
Imports	20	20	17	17	17	17	18	18	18	18	18	18	18	-8.1%
Domestic use	364	325	334	340	344	347	349	351	354	356	358	360	362	11.1%
Exports	530	509	447	426	417	412	406	400	392	392	392	391	390	-23.3%
Ending stocks	25	25	28	30	32	32	33	33	34	34	34	34	34	31.6%
Consumption														
Fluid milk	80.47	80.38	88.75	88.93	88.66	88.22	87.74	87.26	86.80	86.33	85.88	85.43	85.00	5.8%
Cheese	15.42	15.54	18.21	18.46	18.58	18.65	18.70	18.76	18.82	18.88	18.94	19.00	19.07	22.7%
Butter	3.80	3.87	4.33	4.44	4.46	4.41	4.37	4.32	4.27	4.23	4.18	4.13	4.09	5.6%
Prices														
	euro per 100 kilograms													
Milk, 3.7% fat	29	29	28	27	26	26	26	26	26	27	27	27	27	-7.3%
Cheese market	482	490	477	462	458	458	460	462	463	464	465	467	467	-4.7%
Butter market	363	363	324	299	287	286	285	284	283	282	281	280	279	-23.1%
SMP market	204	206	182	177	182	182	183	185	186	187	188	189	190	-7.8%
WMP market	254	254	235	225	221	221	222	222	222	223	225	226	227	-10.6%
Butter intervention	328	305	282	259	246	246	246	246	246	246	246	246	246	-19.4%
SMP intervention	206	195	185	175	175	175	175	175	175	175	175	175	175	-10.5%

A-II-7 Baseline Irish Dairy Commodity Supply and Use Projections

Irish dairy supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
	thousand head, end of year													
Dairy cows	1,156	1,157	1,118	1,108	1,094	1,080	1,066	1,052	1,040	1,028	1,017	1,005	995	-14.0%
Production/cow	4,822	4,805	4,862	4,885	4,933	4,981	5,031	5,082	5,138	5,195	5,251	5,307	5,363	11.6%
	million tonnes													
Fluid milk														
Cow's milk Production	5.57	5.56	5.44	5.41	5.40	5.38	5.36	5.34	5.34	5.34	5.34	5.34	5.33	-4.0%
Milk quota	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	0.0%
Other milk production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Fluid consumption	0.51	0.55	0.59	0.60	0.60	0.61	0.62	0.63	0.63	0.64	0.65	0.66	0.67	22.2%
Manufacturing use	4.87	4.82	4.66	4.64	4.62	4.59	4.57	4.55	4.54	4.53	4.52	4.51	4.50	-6.6%
Feed use, net exports	0.19	0.19	0.19	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.16	0.16	-14.4%
	thousand tonnes													
Cheese														
Production	112	117	123	124	125	125	126	127	128	128	129	130	131	11.9%
Imports	14	16	16	17	19	20	21	23	24	26	27	28	30	85.5%
Domestic use	32	33	35	37	38	40	42	44	46	47	49	51	53	60.6%
Exports	96	100	103	104	104	105	105	106	106	106	107	107	107	7.8%
Ending stocks	27	27	27	27	28	28	28	28	29	29	29	29	29	8.4%
	thousand tonnes													
Butter														
Production	155	144	132	129	129	127	126	125	125	124	124	123	123	-14.7%
Imports	1	1	4	5	5	5	5	5	5	5	5	5	5	369.8%
Domestic use	17	16	17	17	17	18	18	18	19	19	19	19	20	19.3%
Exports	146	140	121	117	116	114	113	111	111	110	109	108	107	-23.8%
Ending stocks	93	81	79	79	78	79	80	81	82	83	84	85	86	6.7%
	thousand tonnes													
Skim powder														
Production	88	84	64	55	52	50	50	49	49	48	47	47	46	-45.7%
Imports	3	4	4	4	4	4	5	5	5	5	5	6	6	59.5%
Domestic use	11	11	12	12	12	12	12	12	12	12	12	12	12	7.6%
Exports	97	85	58	48	46	43	43	42	42	42	41	40	40	-53.5%
Ending stocks	78	69	67	66	66	65	65	65	65	65	65	65	65	-6.4%
	thousand tonnes													
Whole powder														
Production	29	29	29	29	29	29	29	29	29	29	29	29	29	-0.3%
Imports	30	30	30	30	30	30	30	30	30	30	30	30	30	-0.3%
Domestic use	1	1	1	1	1	1	1	1	1	1	1	1	1	0.0%
Exports	1	1	1	1	1	1	1	1	1	1	1	1	1	0.0%
Ending stocks	48	47	51	54	54	55	55	54	54	54	54	54	54	16.7%
	kilograms per capita													
Consumption														
Fluid milk	130.47	137.51	146.03	146.31	146.30	146.30	146.30	146.33	146.61	146.89	147.18	147.48	147.79	7.5%
Cheese	8.14	8.37	8.70	9.02	9.31	9.61	9.90	10.21	10.52	10.83	11.15	11.48	11.81	41.2%
Butter	4.19	4.12	4.17	4.21	4.23	4.24	4.26	4.27	4.28	4.29	4.30	4.31	4.32	
	euro/100 kg													
Milk price, 3.7% fat														
euro/100 kg	25.4	25.0	24.4	22.3	22.2	22.2	22.3	22.5	22.5	22.6	22.7	22.8	22.9	-8.4%
	thousand tonnes													
Casein														
Production	48	47	51	54	54	55	55	54	54	54	54	54	54	16.7%
Imports	2	2	2	2	2	2	2	2	2	2	2	2	2	0.0%
Exports	43	42	46	48	49	49	49	49	49	49	49	49	49	16.3%
Domestic Uses & Stock change	5	5	5	6	6	6	6	6	6	6	6	6	6	20.1%

A-II-8 Baseline Irish Input Use and Expenditure Projections

Irish Input Utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Feed														
Price	euro per tonne													
Dairy	210.25	218.00	210.72	209.05	209.07	210.00	210.81	210.99	210.95	210.69	210.48	210.27	209.89	-3.7%
Beef	213.27	221.12	210.32	208.57	208.58	209.56	210.41	210.60	210.56	210.29	210.07	209.85	209.44	-5.3%
Per head														
	kg/head													
Dairy	784	844	826	780	761	754	754	754	716	718	719	721	722	-14.5%
Beef	215	181	190	192	191	176	162	152	145	140	136	133	130	-27.9%
Total														
	000 tonnes													
Dairy	887	977	923	865	833	814	803	793	744	738	731	725	718	-26.5%
Beef	1,227	1,043	1,098	1,100	1,034	920	828	767	725	694	669	647	627	-39.9%
All animals & poultry	3,286	3,120	3,136	3,084	2,984	2,844	2,738	2,671	2,584	2,549	2,519	2,493	2,468	-20.9%
Fertilizer														
Nitrogen Application	kg/ha													
Per Ha of Grassland Area	98	92	90	86	84	82	82	82	82	83	83	83	83	-9.5%
Per Ha of Crop Area	143	135	138	141	141	139	139	139	139	138	138	138	138	2.9%
Total NPK Application														
	000 tonnes													
	543	516	491	460	444	434	430	427	426	424	423	422	420	-18.6%
Intermediate Consumption of Inputs of which:														
	million Euro													
feedingsuffs	923	904	830	796	765	731	706	690	669	659	652	645	638	-29.4%
fertilisers	371	358	347	331	322	316	313	311	311	312	312	313	314	-12.3%
energy and lubricants	227	245	273	278	277	270	268	268	270	272	274	277	280	14.3%
forage work	631	677	645	649	653	658	663	668	672	676	680	684	689	1.8%
contract work	248	263	266	271	276	282	289	296	302	308	314	320	326	23.7%

Annex III WTO High Scenario Commodity Supply and Use Projections

A-III-1 WTO High Scenario EU 25 Cereal Supply and Use Projections

EU-25 wheat supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015
Soft wheat														
Area harvested	22,157	23,337	23,124	22,583	22,296	22,224	22,321	22,360	22,362	22,378	22,446	22,502	22,535	-3.4%
Yield	4.8	5.8	5.4	5.5	5.5	5.5	5.6	5.6	5.6	5.7	5.7	5.7	5.8	0.0%
Production	105	134	126	123	123	123	124	125	126	127	128	129	130	-3.5%
Beginning stocks	18	12	27	26	23	20	19	18	18	18	18	18	19	54.6%
Imports	7	7	7	7	7	7	7	7	7	6	6	6	6	-13.7%
Total supply	130	154	160	155	152	150	150	150	151	151	152	154	155	0.6%
Domestic use	104	110	116	117	117	117	117	118	118	119	119	120	120	9.2%
Feed	46	52	56	56	56	56	56	56	56	56	57	57	57	11.3%
Other	59	59	61	61	61	61	61	62	62	62	63	63	63	7.3%
Exports	13	17	18	16	15	14	14	14	14	14	15	15	15	-8.5%
Ending stocks	12	27	26	23	20	19	18	18	18	18	18	19	19	-28.7%
Loss, statistical disc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Net exports	7	9	11	9	8	8	8	8	8	8	8	9	9	-4.4%
Set-aside rate	10	5	10	10	10	10	10	10	10	10	10	10	10	100.0%
Intervention price	101	101	101	101	101	101	101	101	101	99	99	99	99	-2.0%
Market price	129	105	101	103	105	106	106	107	107	106	105	105	104	-1.3%

EU-25 barley and maize supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015
Barley														
Area harvested	13,363	12,954	12,721	13,276	13,357	13,133	12,953	12,925	12,914	12,909	12,877	12,859	12,847	-0.8%
Yield	4.2	4.8	4.0	4.4	4.4	4.5	4.5	4.6	4.6	4.7	4.7	4.7	4.8	0.6%
Production	56	62	51	58	59	59	59	59	60	60	61	61	61	-0.2%
Beginning stocks	10	6	12	10	10	11	11	11	11	11	11	11	12	83.3%
Imports	1	1	2	1	1	1	1	1	1	1	1	1	1	-9.3%
Total supply	67	69	65	70	71	71	71	71	72	72	73	73	74	7.3%
Domestic use	56	50	49	51	52	52	51	52	52	52	52	52	52	2.9%
Feed	41	38	38	39	40	40	40	40	40	40	40	40	40	4.5%
Other	14	12	12	12	12	12	12	12	12	12	12	12	12	-2.2%
Exports	5	6	6	9	8	9	9	9	9	9	10	10	10	65.8%
Ending stocks	6	12	10	10	11	11	11	11	11	11	11	12	12	-4.1%
Net exports	4	5	4	7	7	7	7	7	8	8	9	9	9	81.8%
Set-aside rate	10	10	5	10	10	10	10	10	10	10	10	10	10	0.0%
Intervention price	101	101	101	101	101	101	101	101	101	101	99	99	99	-2.0%
Market price	117	103	105	103	103	103	104	104	104	102	102	102	102	-1.0%
Maize for grain														
Area harvested	6,213	6,571	6,213	6,097	6,104	6,094	6,134	6,127	6,129	6,127	6,127	6,123	6,128	-6.7%
Yield	6.6	8.2	8.0	8.1	8.2	8.2	8.3	8.4	8.4	8.5	8.6	8.7	8.7	6.2%
Production	41	54	50	49	50	50	51	51	52	52	53	53	53	-1.0%
Beginning stocks	9	7	10	9	8	8	8	8	8	8	8	9	9	26.6%
Imports	6	3	7	7	7	7	7	7	7	7	7	7	7	135.1%
Total supply	56	64	67	65	65	65	65	66	67	67	68	69	70	8.7%
Domestic use	48	51	52	51	51	51	52	52	53	53	53	54	54	5.5%
Feed	38	42	42	42	42	42	42	43	43	43	44	44	44	5.0%
Other	9	9	9	9	9	9	9	9	10	10	10	10	10	8.1%
Exports	2	3	6	6	6	5	5	6	6	6	6	6	7	160.0%
Ending stocks	7	10	9	8	8	8	8	8	8	8	9	9	9	-13.3%
Net exports	-4	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	21.9%
Set-aside rate	10	5	10	10	10	10	10	10	10	10	10	10	10	100.0%
Intervention price	101	101	101	101	101	101	101	101	101	99	99	99	99	-2.0%
Market price	142	115	107	113	114	113	112	112	110	108	107	106	105	-8.6%

A-III-2 WTO High Scenario Irish Cereal Supply and Use Projections

Irish wheat supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015
Wheat														
Wheat area harvested	thousand hectares													
	95.7	94.2	83.4	81.0	80.4	79.7	79.2	79.2	79.4	79.6	79.7	79.6	79.4	-15.7%
Wheat yield	tonnes per hectare													
	7.3	8.8	8.9	9.1	9.2	9.3	9.5	9.6	9.6	9.6	9.6	9.6	9.6	9.5%
Production	thousand tonnes													
	703.2	824.0	741.2	739.8	738.3	743.5	748.7	760.3	762.7	765.2	765.7	764.0	760.8	-7.7%
Beginning stocks	11.6	39.5	60.7	53.7	49.7	47.1	45.7	45.0	45.1	44.8	44.4	43.7	42.7	8.2%
Imports	811.6	667.7	669.9	691.9	698.1	687.5	680.6	675.0	669.2	672.9	680.0	689.8	701.8	5.1%
Total supply	1,526.5	1,531.2	1,471.8	1,485.4	1,486.1	1,478.0	1,475.0	1,480.4	1,476.9	1,482.9	1,490.0	1,497.4	1,505.3	-1.7%
Domestic use	1,320.3	1,303.9	1,251.4	1,269.1	1,272.3	1,265.6	1,263.3	1,268.6	1,265.4	1,271.9	1,279.7	1,288.1	1,297.2	-0.5%
Feed	909.3	861.4	772.0	769.6	753.2	726.5	704.7	690.6	671.9	662.9	655.3	648.3	641.8	-25.5%
Other	411.1	442.5	479.3	499.4	519.1	539.2	558.7	578.0	593.5	609.0	624.4	639.8	655.4	48.1%
Exports	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	0.0%
Ending stocks	39.5	60.7	53.7	49.7	47.1	45.7	45.0	45.1	44.8	44.4	43.7	42.7	41.4	-31.7%
Loss, statistical disc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Feed wheat	Jan.-Dec. average euro/tonne													
	120.0	107.8	109.9	108.8	108.4	108.7	109.1	109.1	109.0	108.1	108.0	107.9	107.7	-0.1%

Irish barley supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015
Barley														
Barley area harvested	thousand hectares													
	183	168	151	147	146	146	147	149	151	153	155	157	159	-5.4%
Barley yield	tonnes per hectare													
	6.5	6.6	6.8	6.8	6.9	6.9	6.9	6.9	6.9	6.9	6.8	6.8	6.8	2.8%
Production	thousand tonnes													
	1,198	1,116	1,025	1,004	1,001	1,005	1,014	1,025	1,036	1,048	1,061	1,073	1,085	-2.8%
Beginning stocks	67	110	118	113	109	107	107	107	108	108	109	111	112	1.8%
Imports	110	239	221	239	239	229	218	212	200	195	190	186	182	-23.7%
Total supply	1,375	1,465	1,363	1,357	1,350	1,341	1,339	1,344	1,344	1,352	1,360	1,370	1,379	-5.9%
Domestic use	1,155	1,303	1,188	1,203	1,198	1,179	1,166	1,164	1,152	1,153	1,156	1,160	1,165	-10.6%
Feed	865	916	793	789	767	729	699	680	654	641	631	621	612	-33.2%
Other	290	386	395	414	431	449	467	485	498	512	525	539	553	43.2%
Exports	102	45	63	45	44	55	66	72	83	89	94	98	101	127.2%
Ending stocks	118	118	113	109	107	107	107	108	108	109	111	112	113	-4.3%
Feed barley	euro per tonne, Jan.-Dec.													
	111.3	92.7	106.1	104.9	104.6	104.9	105.3	105.3	105.2	104.3	104.2	104.1	103.8	12.0%
Malt barley	123.7	103.0	123.9	122.7	122.3	122.7	123.1	123.1	122.9	122.1	121.9	121.9	121.6	18.1%

A-III-3 WTO High Scenario EU 25 Livestock and Meat Supply & Use Projections

EU 25 livestock supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Cattle														
	million head													
Beginning inventories	88.76	87.49	85.72	85.71	84.82	83.67	82.40	81.13	79.92	78.78	77.73	76.81	75.99	-13.1%
Dairy cows	24.46	23.96	23.37	23.18	22.97	22.72	22.40	22.08	21.77	21.47	21.16	20.88	20.60	-14.0%
Suckler cows	12.03	12.01	12.07	12.11	11.61	11.21	10.95	10.78	10.68	10.62	10.59	10.63	10.66	-11.2%
Suckler cow quota			12.82	12.82	12.82	12.82	12.82	12.82	12.82	12.82	12.82	12.82	12.82	
Cattle slaughter	29.17	29.50	28.68	29.72	29.46	29.03	28.71	28.26	27.86	27.47	27.09	26.78	26.54	-10.0%
Slaughter weight	277.82	277.56	277.73	275.27	274.50	274.48	274.33	274.34	274.29	274.27	274.47	274.47	274.27	-1.2%
	kilograms per head													
Pigs														
	million head													
Beginning inventories	154.47	152.90	151.76	154.60	158.70	157.05	155.91	156.61	157.12	156.86	156.40	156.53	157.35	2.9%
Sows	15.74	15.21	14.87	15.68	15.55	15.25	15.25	15.32	15.27	15.19	15.11	15.15	15.20	-0.1%
Pig slaughter	241.52	240.62	240.96	247.66	250.74	248.03	247.36	248.57	248.97	248.44	247.98	248.72	249.86	3.8%
Slaughter weight	88.72	88.76	88.99	88.38	88.27	88.62	88.87	88.95	89.08	89.23	89.53	89.74	89.81	1.2%
	kilograms per head													
Sheep														
	million head													
Beginning inventories	89.92	89.57	89.38	87.16	84.84	84.20	83.95	82.98	81.57	80.09	78.63	77.87	77.57	-13.4%
Ewes	66.62	66.62	66.08	63.86	62.39	61.92	61.53	60.47	59.20	57.96	56.75	56.25	56.03	-15.9%
Sheep slaughter	64.37	65.13	66.28	63.81	61.30	60.58	60.85	60.12	58.85	57.57	55.68	54.80	54.45	-16.4%
Slaughter weight	16.48	16.44	16.50	16.60	16.75	16.83	16.87	16.88	16.89	16.90	16.92	16.96	17.00	3.4%

EU 25 meat supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Beef and veal														
	thousand tonnes													
Production	8,104	8,187	7,964	8,181	8,086	7,969	7,875	7,754	7,642	7,535	7,434	7,351	7,279	-11.1%
Non-EU imports	485	550	626	615	623	634	646	658	670	678	682	679	674	22.6%
Domestic use	8,296	8,259	8,200	8,270	8,228	8,211	8,165	8,090	8,026	7,962	7,902	7,850	7,807	-5.5%
Non-EU exports	492	513	396	523	478	388	353	318	283	248	212	177	142	-72.3%
Stock change	-199	-36	-6	3	4	4	4	3	3	3	3	3	4	-110.4%
Intervention/SPS stocks	20	0	0	0	0	0	0	0	0	0	0	0	0	
Pig meat														
Production	21,427	21,359	21,443	21,887	22,131	21,981	21,984	22,110	22,177	22,168	22,201	22,321	22,440	5.1%
Non-EU imports	30	26	30	30	30	30	30	30	34	123	91	35	30	15.9%
Domestic use	20,109	20,120	20,117	20,559	20,796	20,651	20,625	20,750	20,833	20,913	20,904	20,947	21,074	4.7%
Non-EU exports	1,341	1,334	1,371	1,328	1,347	1,364	1,389	1,384	1,371	1,370	1,387	1,405	1,387	4.0%
Stock change	6	-69	-14	30	18	-3	0	7	7	7	2	4	8	-112.2%
Poultry														
Production	10,368	10,522	10,669	10,627	10,619	10,668	10,753	10,824	10,882	10,934	11,039	11,146	11,230	6.7%
Non-EU imports	595	445	450	454	456	458	460	462	494	544	540	525	507	13.9%
Domestic use	9,982	9,935	10,105	10,071	10,135	10,254	10,350	10,431	10,527	10,633	10,748	10,848	10,922	9.9%
Non-EU exports	973	1,031	1,007	989	926	864	853	845	837	832	821	813	805	-21.9%
Stock change	9	1	7	20	14	8	9	10	12	13	9	10	11	1218.0%
Sheep meat														
Production	1,061	1,071	1,094	1,059	1,027	1,019	1,027	1,015	994	973	942	929	926	-13.6%
Non-EU imports	272	275	275	279	287	305	326	358	396	435	466	481	486	77.0%
Domestic use	1,324	1,337	1,356	1,330	1,306	1,317	1,344	1,364	1,381	1,399	1,400	1,402	1,403	4.9%
Non-EU exports	8	8	8	8	8	8	8	8	8	8	8	8	8	0.0%
Stock change	0	0	0	0	0	0	1	1	1	1	0	0	0	
Consumption														
	kilograms per capita, cwe													
Beef and veal	16.6	16.4	16.3	16.4	16.3	16.2	16.1	15.9	15.8	15.6	15.5	15.4	15.3	-7.0%
Pig meat	40.1	40.1	40.0	40.7	41.1	40.8	40.7	40.9	41.0	41.1	41.0	41.1	41.3	3.1%
Poultry meat	19.9	19.8	20.1	20.0	20.0	20.3	20.4	20.5	20.7	20.9	21.1	21.3	21.4	8.2%
Sheep meat	2.6	2.7	2.7	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.8	2.7	3.3%
Total	79.3	79.0	79.0	79.7	80.0	79.8	79.8	80.0	80.2	80.4	80.4	80.5	80.7	2.3%
Prices														
	euro per 100 kilograms													
Cattle reference	270	270	287	261	258	260	262	265	266	267	271	272	270	0.1%
Pig meat reference	127	138	141	126	122	128	130	128	128	126	129	129	127	-8.1%
Chicken	145	146	140	136	135	135	135	134	133	131	131	130	128	-12.3%
Sheep meat reference	419	409	403	409	433	434	416	402	391	379	387	390	392	-4.2%
Beef intervention	206	195	185	175	170	170	166	166	166	166	166	166	157	-19.5%

A-III-4 WTO High Scenario Irish Livestock Supply and Use Projections

Irish livestock supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Cattle														
	million head													
Beginning inventories	6.33	6.22	6.24	6.18	5.83	5.63	5.51	5.43	5.36	5.29	5.22	5.16	5.09	-18.2%
Dairy cows	1.13	1.14	1.12	1.08	1.08	1.06	1.05	1.04	1.02	1.01	1.00	0.99	0.98	-13.8%
Suckler cows	1.15	1.15	1.15	1.16	1.04	0.99	0.96	0.95	0.94	0.93	0.92	0.90	0.89	-22.3%
Other cattle	4.05	3.94	3.97	3.94	3.71	3.58	3.50	3.44	3.40	3.35	3.31	3.26	3.22	-18.3%
Calf crop	2.13	2.13	2.13	2.10	1.98	1.92	1.88	1.86	1.84	1.82	1.79	1.77	1.75	-18.0%
Cattle imports	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-100.0%
Total supply	8.46	8.36	8.37	8.28	7.80	7.54	7.39	7.30	7.20	7.11	7.02	6.93	6.84	-18.2%
Cattle slaughter	1.86	1.92	1.95	2.19	1.92	1.79	1.71	1.69	1.68	1.66	1.64	1.62	1.60	-16.7%
Cow slaughter	0.33	0.33	0.34	0.61	0.45	0.37	0.33	0.33	0.32	0.32	0.31	0.31	0.30	-8.6%
Calf slaughter	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0%
Other slaughter	1.52	1.58	1.60	1.57	1.47	1.41	1.38	1.36	1.35	1.33	1.32	1.31	1.29	-18.4%
Cattle exports	0.22	0.14	0.18	0.20	0.20	0.19	0.19	0.18	0.18	0.18	0.17	0.17	0.16	18.5%
Destruction, death loss	0.16	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	-18.2%
Ending inventories	6.22	6.24	6.18	5.83	5.63	5.51	5.43	5.36	5.29	5.22	5.16	5.09	5.02	-19.5%
	kilograms per head													
Slaughter weight	301.6	311.1	309.2	307.7	301.7	300.2	299.6	299.4	299.2	298.8	298.5	298.4	297.9	-4.2%
	1000 head													
Live cattle exports	218	139	175	202	196	191	187	184	180	176	171	167	164	18.5%
Calves	78	45	65	69	52	44	38	35	32	29	25	22	19	-57.9%
Non-calves to the EU	146	82	98	121	131	135	136	136	136	136	134	133	134	62.8%
Non-calves to the ROW	-6	12	12	12	12	12	12	12	12	12	12	12	12	0.0%
Pigs														
	million head													
Beginning inventories	1.78	1.73	1.76	1.76	1.72	1.66	1.63	1.62	1.61	1.59	1.58	1.57	1.57	-9.2%
Sows	0.183	0.176	0.179	0.179	0.178	0.176	0.176	0.176	0.176	0.176	0.175	0.175	0.175	-0.2%
Other pigs	1.60	1.56	1.58	1.58	1.54	1.48	1.45	1.44	1.43	1.42	1.40	1.40	1.40	-10.3%
Pig crop	3.16	3.23	3.32	3.34	3.26	3.20	3.21	3.22	3.21	3.20	3.18	3.19	3.19	-1.2%
Pig imports	0.06	0.02	0.05	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	349.6%
Total supply	5.00	4.98	5.12	5.20	5.08	4.95	4.92	4.93	4.91	4.88	4.85	4.85	4.85	-2.6%
Pig slaughter	2.87	2.73	2.87	2.99	2.96	2.86	2.84	2.86	2.86	2.85	2.82	2.83	2.84	4.0%
Pig exports	0.45	0.46	0.49	0.48	0.47	0.46	0.46	0.46	0.46	0.45	0.45	0.45	0.45	-2.3%
Destruction, death loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Ending inventories	1.73	1.76	1.76	1.72	1.66	1.63	1.62	1.61	1.59	1.58	1.57	1.57	1.56	-11.4%
	kilograms per head													
Slaughter weight	75.6	75.3	75.7	75.8	76.0	76.2	76.4	76.6	76.8	76.9	77.1	77.3	77.4	2.7%
Sheep														
	million head													
Beginning inventories	4.83	4.85	4.65	4.31	4.34	4.35	4.31	4.21	4.09	3.98	3.87	3.80	3.75	-22.8%
Ewes	3.73	3.68	3.53	3.19	3.27	3.29	3.25	3.16	3.05	2.96	2.87	2.82	2.78	-24.4%
Other sheep	1.10	1.17	1.12	1.12	1.08	1.07	1.06	1.05	1.04	1.02	1.00	0.98	0.97	-17.7%
Lamb crop	3.81	3.55	3.41	3.08	3.15	3.17	3.14	3.05	2.95	2.86	2.76	2.71	2.68	-24.5%
Sheep imports	0.02	0.02	0.02	0.00	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.03	5.7%
Total supply	8.66	8.43	8.07	7.40	7.53	7.56	7.48	7.28	7.06	6.87	6.65	6.54	6.45	-23.4%
Sheep slaughter	3.16	3.45	3.44	2.78	2.89	2.96	2.99	2.91	2.80	2.74	2.60	2.55	2.51	-27.3%
Sheep exports	0.06	0.10	0.11	0.07	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.06	0.06	-33.3%
Destruction, death loss	0.59	0.23	0.22	0.20	0.21	0.21	0.20	0.20	0.19	0.19	0.18	0.18	0.18	-22.8%
Ending inventories	4.85	4.65	4.31	4.34	4.35	4.31	4.21	4.09	3.98	3.87	3.80	3.75	3.70	-20.3%
	kilograms per head													
Slaughter weight	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	0.0%

A-III-5 WTO High Scenario Meat Supply and Use Projections

Irish meat supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
thousand tonnes														
Beef and veal														
Production	561	598	602	673	580	537	513	507	501	495	489	483	477	-20.2%
Imports	18	26	36	38	42	50	75	84	91	100	107	114	122	362.0%
Domestic use	84	88	90	96	101	104	105	105	105	103	102	102	101	15.2%
Exports	500	536	548	615	521	483	483	485	488	491	494	496	497	-7.3%
Intervention stocks	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pig meat														
Production	217	206	217	227	225	218	217	219	219	219	218	218	220	6.8%
Imports	50	59	61	67	69	68	68	70	71	72	72	73	75	27.7%
Domestic use	146	146	146	150	155	158	160	162	163	164	165	165	166	13.8%
Exports	121	119	132	143	139	128	125	127	127	128	125	126	129	8.5%
Ending stocks	15	15	15	15	15	15	15	15	15	15	15	15	15	0.0%
Broiler meat														
Production	95	73	72	72	73	74	74	75	76	76	77	78	78	6.8%
Imports	37	38	40	40	39	38	37	36	36	37	38	39	40	6.8%
Domestic use	108	92	104	104	103	103	102	102	102	103	105	106	108	17.1%
Exports	24	19	8	8	8	8	9	9	9	10	10	10	11	-43.8%
Ending stocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Other poultry meat														
Production	38	37	36	37	37	37	38	38	38	39	39	39	40	6.8%
Imports	19	19	20	20	19	19	18	18	18	18	19	19	20	6.8%
Domestic use	24	42	33	32	32	32	32	32	32	33	34	35	36	-15.8%
Exports	33	14	23	24	24	24	24	24	24	24	24	24	24	75.9%
Ending stocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Sheep meat														
Production	63	69	69	55	58	59	60	58	56	55	52	51	50	-27.3%
Imports	2	2	2	2	2	2	2	2	2	2	2	2	2	0.0%
Domestic use	21	29	31	28	26	28	30	30	31	32	32	32	32	11.2%
Exports	44	42	40	29	33	33	32	30	27	25	22	21	20	-52.4%
Stock change	0	0	0	0	0	0	0	0	0	0	0	0	0	
kilograms per capita, cwe														
Consumption														
Beef and veal	21	22	22	24	24	25	25	25	24	24	23	23	22	1.2%
Pig meat	37	37	36	37	38	38	38	38	38	37	37	37	37	0.1%
Broiler meat	27	23	26	26	25	25	24	24	24	24	24	24	24	3.0%
Other poultry meat	6	11	8	8	8	8	8	7	7	7	8	8	8	-25.9%
Sheep meat	5	7	8	7	6	7	7	7	7	7	7	7	7	-2.2%
Total	97	100	100	101	101	102	102	101	100	99	99	98	98	-1.9%
euro per 100 kilograms														
Market prices														
Cattle reference	109.7	115.8	110.0	95.2	94.2	95.2	96.0	97.0	97.6	97.9	99.9	100.4	99.3	-14.3%
Pig meat	126.0	137.0	134.4	121.5	118.4	123.9	126.0	124.6	123.9	123.0	125.2	125.5	123.3	-10.0%
Sheep meat representative	360.4	347.8	316.9	347.8	369.4	370.5	353.9	341.4	331.6	320.8	327.4	330.8	332.2	-4.5%
euro per pair														
Chicken	3.08	2.83	2.72	2.65	2.63	2.64	2.64	2.62	2.60	2.56	2.56	2.54	2.52	-10.9%

A-III-6 WTO High Scenario EU 25 Dairy Commodity Supply and Use Projections

EU 25 dairy supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Dairy cows	24,456	23,963	23,247	23,043	22,812	22,497	22,179	21,870	21,559	21,259	20,971	20,690	20,411	-14.8%
Production/cow	5,898	5,994	6,201	6,260	6,318	6,378	6,447	6,516	6,581	6,652	6,725	6,797	6,868	14.6%
Fluid milk														
Cow's milk Production	144.24	143.64	144.15	144.25	144.14	143.50	142.98	142.50	141.87	141.40	141.03	140.63	140.18	-2.4%
Milk quota			138.05	139.02	139.50	139.50	139.50	139.50	139.50	139.50	139.50	139.50	139.50	96.9%
Other milk production	3.34	3.33	3.34	3.35	3.36	3.37	3.38	3.39	3.40	3.41	3.42	3.43	3.44	3.3%
Fluid consumption	40.32	40.37	41.39	41.47	41.53	41.48	41.33	41.19	41.11	40.95	40.76	40.59	40.42	0.1%
Manufacturing use	100.94	100.28	99.80	99.85	99.70	99.16	98.86	98.60	98.11	97.87	97.76	97.60	97.40	-2.9%
Feed use, net exports	6.33	6.32	6.30	6.28	6.27	6.23	6.17	6.10	6.05	5.99	5.93	5.87	5.81	-8.1%
Cheese														
Production	8,162	8,264	8,362	8,477	8,528	8,565	8,608	8,637	8,683	8,687	8,731	8,783	8,830	6.8%
Imports	138	141	145	147	149	150	160	203	248	307	298	285	278	96.9%
Domestic use	7,726	7,807	7,908	8,033	8,156	8,250	8,312	8,376	8,460	8,521	8,571	8,621	8,678	11.2%
Exports	579	569	583	577	508	455	449	458	465	468	453	441	424	-25.4%
Ending stocks	463	492	509	524	538	548	555	562	569	575	580	585	589	19.7%
Butter														
Production	2,176	2,123	2,103	2,081	2,091	2,091	2,077	2,070	2,054	2,047	2,030	2,007	1,989	-6.3%
Imports	93	112	121	121	121	121	121	121	121	121	121	121	121	7.8%
Domestic use	1,902	1,946	1,932	1,979	2,014	2,022	2,028	2,030	2,069	2,063	2,059	2,075	2,067	6.2%
Exports	331	343	299	271	236	193	171	149	127	105	83	60	38	-88.9%
Ending stocks	265	212	205	156	118	114	113	124	104	103	112	105	109	-48.3%
Skim powder														
Production	1,442	1,240	1,268	1,210	1,222	1,220	1,195	1,183	1,158	1,143	1,110	1,069	1,033	-16.7%
Imports	58	61	61	61	61	61	61	61	61	61	61	61	61	0.0%
Domestic use	1,189	1,200	1,208	1,202	1,171	1,161	1,149	1,133	1,111	1,099	1,091	1,077	1,074	-10.5%
Exports	290	241	174	121	118	115	114	113	110	102	76	54	32	-86.9%
Ending stocks	402	262	210	157	151	156	150	148	146	150	155	155	144	-45.3%
Whole powder														
Production	875	815	766	752	683	611	596	585	548	569	586	604	610	-25.1%
Imports	20	20	17	17	18	18	18	19	19	19	19	19	19	-3.7%
Domestic use	364	325	334	340	350	359	363	367	373	375	376	377	379	16.4%
Exports	530	509	447	426	347	267	249	235	192	212	230	247	251	-50.7%
Ending stocks	25	25	28	30	33	36	38	39	41	41	41	41	41	59.9%
Consumption														
Fluid milk	80.47	80.38	88.75	88.93	89.02	88.90	88.59	88.27	88.12	87.77	87.38	87.02	86.68	7.8%
Cheese	15.42	15.54	18.21	18.46	18.70	18.89	19.00	19.12	19.29	19.40	19.49	19.58	19.69	26.7%
Butter	3.80	3.87	4.33	4.44	4.52	4.53	4.54	4.54	4.63	4.61	4.60	4.64	4.61	19.1%
Prices														
Milk, 3.7% fat	29	29	28	27	26	25	25	25	24	24	24	24	24	-18.3%
Cheese market	482	490	477	462	447	438	435	432	426	423	422	421	419	-14.6%
Butter market	363	363	324	299	281	274	267	261	247	243	239	231	228	-37.2%
SMP market	204	206	182	177	178	176	176	177	179	180	179	180	178	-13.8%
WMP market	254	254	235	225	206	191	188	186	178	180	183	186	187	-26.3%
Butter intervention	328	305	282	259	240	240	234	234	209	209	209	197	197	-35.5%
SMP intervention	206	195	185	175	170	170	166	166	166	166	166	166	157	-19.5%

A-III-7: WTO High Scenario Irish Dairy Commodity Supply and Use Projections

Irish dairy supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
	thousand head, end of year													
Dairy cows	1,156	1,157	1,118	1,108	1,096	1,082	1,068	1,055	1,043	1,032	1,021	1,010	999	-13.6%
Production/cow	4,822	4,805	4,862	4,885	4,928	4,971	5,019	5,069	5,121	5,176	5,231	5,287	5,341	11.2%
	million tonnes													
Fluid milk														
Cow's milk Production	5.57	5.56	5.44	5.41	5.40	5.38	5.36	5.35	5.34	5.34	5.34	5.34	5.34	-4.0%
Milk quota	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	0.0%
Other milk production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Fluid consumption	0.51	0.55	0.59	0.60	0.60	0.61	0.62	0.63	0.64	0.65	0.65	0.66	0.67	22.6%
Manufacturing use	4.87	4.82	4.66	4.64	4.62	4.59	4.57	4.54	4.54	4.53	4.52	4.51	4.50	-6.7%
Feed use, net exports	0.19	0.19	0.19	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.16	-13.3%
	thousand tonnes													
Cheese														
Production	112	117	123	124	124	125	125	126	127	127	129	130	132	12.3%
Imports	14	16	16	17	19	20	22	23	25	26	28	29	30	88.3%
Domestic use	32	33	35	37	38	40	42	44	46	48	50	52	54	62.0%
Exports	96	100	103	104	104	104	105	105	105	106	106	107	108	8.2%
Ending stocks	27	27	27	27	28	28	29	29	29	29	30	30	30	10.8%
	thousand tonnes													
Butter														
Production	155	144	132	129	129	129	127	127	126	126	125	124	122	-14.8%
Imports	1	1	4	5	5	5	5	5	4	5	5	5	5	361.3%
Domestic use	17	16	17	17	17	18	18	18	19	19	19	20	20	20.8%
Exports	146	140	121	117	117	113	112	110	113	111	108	109	106	-24.1%
Ending stocks	93	81	79	79	78	81	83	86	84	84	86	85	86	7.0%
	thousand tonnes													
Skim powder														
Production	88	84	64	55	51	49	48	47	47	46	45	44	42	-50.7%
Imports	3	4	4	4	4	4	5	5	5	5	5	6	6	58.8%
Domestic use	11	11	12	12	12	12	12	12	12	12	12	12	12	8.2%
Exports	97	85	58	48	44	41	40	40	40	39	38	37	35	-58.8%
Ending stocks	78	69	67	66	66	66	66	66	66	66	66	66	66	-4.5%
	thousand tonnes													
Whole powder														
Production	29	29	29	29	28	27	27	27	27	27	27	28	28	-3.9%
Imports	30	30	30	30	29	28	28	28	28	28	28	29	29	-3.8%
Domestic use	1	1	1	1	1	1	1	1	1	1	1	1	1	0.0%
Exports	1	1	1	1	1	1	1	1	1	1	1	1	1	0.0%
Ending stocks	48	47	51	54	55	56	56	55	55	55	56	56	56	19.8%
	kilograms per capita													
Consumption														
Fluid milk	130.47	137.51	146.03	146.31	146.39	146.45	146.50	146.57	146.92	147.23	147.55	147.88	148.22	7.8%
Cheese	8.14	8.37	8.70	9.02	9.34	9.66	9.96	10.28	10.61	10.93	11.25	11.58	11.92	42.4%
Butter	4.19	4.12	4.17	4.21	4.24	4.26	4.28	4.29	4.32	4.33	4.35	4.37	4.38	
	euro/100 kg													
Milk price, 3.7% fat														
2003	25.4	25.0	24.4	22.3	21.7	21.2	21.1	21.0	20.7	20.6	20.5	20.4	20.3	-18.8%
	thousand tonnes													
Casein														
Production	48	47	51	54	55	56	56	55	55	55	56	56	56	19.8%
Imports	2	2	2	2	2	2	2	2	2	2	2	2	2	0.0%
Exports	43	42	46	48	49	50	50	50	49	50	50	50	50	19.3%
Domestic Uses & Stock change	5	5	5	6	6	6	6	6	6	6	6	6	6	23.8%

A-III-8: WTO High Scenario Irish Input Use and Expenditure Projections

Irish Input Utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Feed														
Price	euro per tonne													
Dairy	210.25	218.00	210.72	209.05	208.50	208.95	209.56	209.60	209.37	208.13	207.92	207.80	207.46	-4.8%
Beef	213.27	221.12	210.32	208.57	207.99	208.46	209.10	209.14	208.90	207.60	207.38	207.26	206.89	-6.4%
Per head														
Dairy	kg/head													
Beef	784	844	826	780	759	750	749	748	707	706	706	705	704	-16.6%
	215	181	190	192	191	176	161	150	142	137	132	128	124	-31.4%
Total														
Dairy	000 tonnes													
Beef	887	977	923	865	832	812	800	788	737	729	721	712	704	-28.0%
All animals & poultry	1,227	1,043	1,098	1,100	1,034	919	823	756	709	672	640	611	585	-43.9%
	3,286	3,120	3,136	3,084	2,982	2,838	2,727	2,651	2,556	2,510	2,472	2,437	2,403	-23.0%
Fertilizer														
Nitrogen Application	kg/ha													
Per Ha of Grassland Area	98	92	90	86	83	82	82	82	81	81	81	81	81	-11.7%
Per Ha of Crop Area	143	135	138	141	141	139	139	138	138	138	137	137	137	1.7%
Total NPK Application	000 tonnes													
	543	516	490	459	441	429	423	420	416	413	411	408	405	-21.5%
Intermediate Consumption of Inputs of which:														
feedingsuffs	million Euro													
fertilisers	3343	3377	3451	3382	3331	3270	3135	3073	3045	3024	3015	3012	3012	-10.8%
energy and lubricants	923	904	830	796	762	725	698	679	656	640	631	622	614	-32.1%
forage work	371	358	347	330	320	312	308	306	304	304	303	304	304	-15.1%
contract work	227	245	273	278	277	270	268	268	269	271	273	275	278	13.4%
	631	677	645	649	653	658	663	667	671	675	678	682	686	1.3%
	248	263	266	271	276	283	289	296	302	307	313	319	324	23.2%

Annex IV WTO Moderate Scenario Commodity Supply and Use Projections

A-IV-1 WTO Moderate Scenario EU 25 Cereal Supply and Use Projections

EU-25 wheat supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015
Soft wheat														
Area harvested	22,157	23,337	23,124	22,583	22,296	22,222	22,343	22,387	22,393	22,405	22,474	22,523	22,549	-3.4%
	thousand hectares													
Yield	4.8	5.8	5.4	5.5	5.5	5.5	5.6	5.6	5.6	5.7	5.7	5.7	5.8	0.0%
	million tonnes													
Production	105	134	126	123	123	123	125	125	126	127	128	129	130	-3.4%
Beginning stocks	18	12	27	26	23	20	18	18	18	18	18	18	19	54.3%
Imports	7	7	7	7	7	7	7	7	7	7	6	6	6	-13.5%
Total supply	130	154	160	155	152	150	150	150	150	151	152	154	155	0.7%
Domestic use	104	110	116	117	117	117	117	118	118	119	119	120	121	9.2%
Feed	46	52	56	56	56	56	56	56	56	57	57	57	57	11.4%
Other	59	59	61	61	61	61	61	62	62	62	62	63	63	7.3%
Exports	13	17	18	16	15	14	14	14	14	14	15	15	15	-8.8%
Ending stocks	12	27	26	23	20	18	18	18	18	18	18	19	19	-28.5%
Loss, statistical disc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Net exports	7	9	11	9	8	8	8	8	8	8	8	9	9	-5.1%
	percent													
Set-aside rate	10	5	10	10	10	10	10	10	10	10	10	10	10	100.0%
	euro per tonne, Jan.-Dec.													
Intervention price	101	101	101	101	101	101	101	101	101	101	101	101	101	0.0%
Market price	129	105	101	103	105	107	107	108	108	108	107	106	105	-0.3%

EU-25 barley and maize supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015
Barley														
Area harvested	13,363	12,954	12,721	13,276	13,357	13,134	12,945	12,916	12,905	12,902	12,884	12,873	12,867	-0.7%
	thousand hectares													
Yield	4.2	4.8	4.0	4.4	4.4	4.5	4.5	4.6	4.6	4.7	4.7	4.7	4.8	0.6%
	tonnes per hectare													
Production	56	62	51	58	59	59	59	59	60	60	61	61	62	-0.1%
Beginning stocks	10	6	12	10	10	10	10	10	10	11	11	11	12	82.6%
Imports	1	1	2	1	1	1	1	1	1	1	1	1	1	-6.5%
Total supply	67	69	65	70	71	71	70	71	71	72	73	73	74	7.4%
Domestic use	56	50	49	51	52	52	52	52	52	52	52	52	52	3.0%
Feed	41	38	38	39	40	40	40	40	40	40	40	40	40	4.6%
Other	14	12	12	12	12	12	12	12	12	12	12	12	12	-2.4%
Exports	5	6	6	9	8	9	8	9	9	9	10	10	10	66.4%
Ending stocks	6	12	10	10	10	10	10	10	11	11	11	12	12	-3.8%
Net exports	4	5	4	7	7	7	7	7	8	8	8	9	9	81.8%
	percent													
Set-aside rate	10	10	5	10	10	10	10	10	10	10	10	10	10	0.0%
	euro per tonne, Jan.-Dec.													
Intervention price	101	101	101	101	101	101	101	101	101	101	101	101	101	0.0%
Market price	117	103	105	103	103	104	105	105	105	104	104	103	103	0.1%
Maize for grain														
Area harvested	6,213	6,571	6,213	6,097	6,104	6,108	6,155	6,153	6,155	6,151	6,146	6,139	6,139	-6.6%
	thousand hectares													
Yield	6.6	8.2	8.0	8.1	8.2	8.2	8.3	8.4	8.4	8.5	8.6	8.7	8.7	6.2%
	million tonnes													
Production	41	54	50	49	50	50	51	52	52	52	53	53	54	-0.7%
Beginning stocks	9	7	10	9	8	8	8	8	8	8	8	9	9	26.2%
Imports	6	3	7	7	7	6	6	7	7	7	7	7	7	135.4%
Total supply	56	64	67	65	65	65	65	66	67	68	68	69	70	8.9%
Domestic use	48	51	52	51	51	51	52	52	53	53	53	54	54	5.8%
Feed	38	42	42	42	42	42	42	43	43	43	44	44	44	5.3%
Other	9	9	9	9	9	9	9	9	10	10	10	10	10	8.0%
Exports	2	3	6	6	6	5	6	6	6	6	6	6	7	160.3%
Ending stocks	7	10	9	8	8	8	8	8	8	8	9	9	9	-13.5%
Net exports	-4	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	21.9%
	percent													
Set-aside rate	10	5	10	10	10	10	10	10	10	10	10	10	10	100.0%
	euro per tonne, Jan.-Dec.													
Intervention price	101	101	101	101	101	101	101	101	101	101	101	101	101	0.0%
Market price	142	115	107	113	115	115	114	114	112	111	109	107	106	-7.8%

A-IV-2 WTO Moderate Scenario Irish Cereal Supply and Use Projections

Irish wheat supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015
Wheat														
Wheat area harvested	thousand hectares													
	95.7	94.2	83.4	81.0	80.4	79.6	78.8	78.6	78.5	78.4	78.4	78.3	78.1	-17.1%
Wheat yield	tonnes per hectare													
	7.3	8.8	8.9	9.1	9.2	9.3	9.5	9.6	9.6	9.6	9.6	9.6	9.6	9.8%
Production	thousand tonnes													
	703.2	824.0	741.2	739.8	738.3	742.6	746.0	755.6	755.6	755.3	754.6	752.8	750.0	-9.0%
Beginning stocks	11.6	39.5	60.7	53.7	49.7	47.1	45.6	44.7	44.5	44.0	43.1	42.2	41.0	4.0%
Imports	811.6	667.7	669.9	691.9	698.7	689.6	685.2	682.7	680.1	687.1	695.9	706.1	717.6	7.5%
Total supply	1,526.5	1,531.2	1,471.8	1,485.4	1,486.7	1,479.2	1,476.7	1,483.0	1,480.2	1,486.4	1,493.7	1,501.0	1,508.7	-1.5%
Domestic use	1,320.3	1,303.9	1,251.4	1,269.1	1,273.0	1,266.9	1,265.4	1,271.8	1,269.6	1,276.6	1,284.8	1,293.3	1,302.3	-0.1%
Feed	909.3	861.4	772.0	769.6	754.0	728.1	707.1	694.2	676.4	668.2	661.0	654.0	647.2	-24.9%
Other	411.1	442.5	479.3	499.4	518.9	538.8	558.3	577.6	593.1	608.4	623.9	639.4	655.0	48.0%
Exports	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	0.0%
Ending stocks	39.5	60.7	53.7	49.7	47.1	45.6	44.7	44.5	44.0	43.1	42.2	41.0	39.7	-34.5%
Loss, statistical disc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Prices	Jan.-Dec. average euro/tonne													
Feed wheat	120.0	107.8	109.9	108.8	108.8	109.3	109.9	109.9	109.7	109.3	109.0	108.7	108.3	0.5%

Irish barley supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015
Barley														
Barley area harvested	thousand hectares													
	183	168	151	147	146	146	147	147	149	150	152	154	156	-7.6%
Barley yield	tonnes per hectare													
	6.5	6.6	6.8	6.8	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.8	3.2%
Production	thousand tonnes													
	1,198	1,116	1,025	1,004	1,001	1,004	1,010	1,017	1,024	1,033	1,043	1,053	1,065	-4.6%
Beginning stocks	67	110	118	113	109	107	107	107	107	107	108	108	109	-0.3%
Imports	110	239	221	239	240	230	222	218	209	206	203	199	196	-18.0%
Total supply	1,375	1,465	1,363	1,357	1,350	1,341	1,338	1,342	1,340	1,346	1,353	1,361	1,370	-6.5%
Domestic use	1,155	1,303	1,188	1,203	1,199	1,181	1,169	1,169	1,158	1,160	1,163	1,168	1,172	-10.0%
Feed	865	916	793	789	768	732	703	685	660	649	639	629	620	-32.4%
Other	290	386	395	414	431	449	467	484	498	511	525	539	553	43.1%
Exports	102	45	63	45	44	54	62	66	75	78	81	84	88	96.5%
Ending stocks	118	118	113	109	107	107	107	107	107	108	108	109	110	-6.4%
Market prices	euro per tonne, Jan.-Dec.													
Feed barley	111.3	92.7	106.1	104.9	104.9	105.5	106.0	106.1	105.9	105.5	105.2	104.9	104.5	12.8%
Malt barley	123.7	103.0	123.9	122.7	122.7	123.3	123.8	123.9	123.7	123.3	123.0	122.7	122.3	18.7%

A-IV-3: WTO Moderate Scenario EU 25 Livestock and Meat Supply & Use Projections

EU 25 livestock supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Cattle														
	million head													
Beginning inventories	88.76	87.49	85.72	85.71	84.82	83.71	82.57	81.48	80.46	79.49	78.55	77.65	76.77	-12.3%
Dairy cows	24.46	23.96	23.37	23.18	22.97	22.71	22.42	22.12	21.82	21.52	21.22	20.93	20.64	-13.9%
Suckler cows	12.03	12.01	12.07	12.11	11.61	11.25	11.08	10.99	10.95	10.93	10.90	10.88	10.85	-9.7%
Cattle slaughter	29.17	29.50	28.68	29.72	29.43	28.94	28.67	28.29	27.95	27.66	27.35	27.07	26.81	-9.1%
Slaughter weight	277.82	277.56	277.73	275.27	274.84	275.33	275.33	275.53	275.50	275.26	275.13	274.90	274.58	-1.1%
	kilograms per head													
Pigs														
	million head													
Beginning inventories	154.47	152.90	151.76	154.60	158.70	157.14	156.24	157.07	157.56	157.31	157.06	157.19	157.50	3.0%
Sows	15.74	15.21	14.87	15.68	15.55	15.27	15.30	15.37	15.32	15.24	15.20	15.20	15.18	-0.2%
Pig slaughter	241.52	240.62	240.96	247.66	250.78	248.31	248.01	249.33	249.71	249.29	249.13	249.54	249.93	3.9%
Slaughter weight	88.72	88.76	88.99	88.38	88.29	88.66	88.89	88.96	89.09	89.29	89.51	89.69	89.82	1.2%
	kilograms per head													
Sheep														
	million head													
Beginning inventories	89.92	89.57	89.38	87.16	84.84	84.31	84.53	84.10	83.23	82.33	81.46	81.04	80.88	-9.7%
Ewes	66.62	66.62	66.08	63.86	62.39	62.01	62.06	61.41	60.57	59.78	59.03	58.73	58.57	-12.1%
Sheep slaughter	64.37	65.13	66.28	63.81	61.22	60.29	60.96	60.68	59.85	59.01	57.87	57.34	57.12	-12.3%
Slaughter weight	16.48	16.44	16.50	16.60	16.75	16.84	16.90	16.93	16.96	16.98	17.01	17.05	17.09	3.9%

EU 25 meat supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Beef and veal														
	thousand tonnes													
Production	8,104	8,187	7,964	8,181	8,089	7,969	7,894	7,794	7,701	7,614	7,525	7,441	7,361	-10.1%
Non-EU imports	485	550	626	615	628	646	658	669	676	676	671	662	654	19.0%
Domestic use	8,296	8,259	8,200	8,270	8,197	8,134	8,077	7,993	7,941	7,917	7,885	7,855	7,830	-5.2%
Non-EU exports	492	513	396	523	516	479	474	468	433	370	306	243	180	-65.0%
Stock change	-199	-36	-6	3	3	1	2	2	2	3	4	5	5	-114.8%
Intervention/SPS stocks	20	0	0	0	0	0	0	0	0	0	0	0	0	
Pig meat														
Production	21,427	21,359	21,443	21,887	22,140	22,016	22,045	22,181	22,247	22,258	22,300	22,381	22,449	5.1%
Non-EU imports	30	26	30	30	30	30	30	30	30	30	30	30	30	15.8%
Domestic use	20,109	20,120	20,117	20,559	20,809	20,692	20,690	20,825	20,904	20,928	20,944	20,993	21,063	4.7%
Non-EU exports	1,341	1,334	1,371	1,328	1,345	1,358	1,385	1,379	1,366	1,355	1,382	1,413	1,409	5.6%
Stock change	6	-69	-14	30	16	-4	0	7	7	5	4	6	7	-110.3%
Poultry														
Production	10,368	10,522	10,669	10,627	10,655	10,748	10,836	10,906	10,975	11,047	11,130	11,207	11,273	7.1%
Non-EU imports	595	445	450	454	456	458	460	462	464	465	467	469	470	5.7%
Domestic use	9,982	9,935	10,105	10,071	10,129	10,255	10,359	10,447	10,536	10,629	10,732	10,827	10,913	9.8%
Non-EU exports	973	1,031	1,007	989	970	947	928	910	891	872	854	837	819	-20.5%
Stock change	9	1	7	20	11	4	9	11	11	12	11	12	12	1359.0%
Sheep meat														
Production	1,061	1,071	1,094	1,059	1,026	1,016	1,030	1,027	1,015	1,002	984	978	976	-8.9%
Non-EU imports	272	275	275	279	288	302	310	327	350	373	391	398	401	46.2%
Domestic use	1,324	1,337	1,356	1,330	1,306	1,310	1,332	1,346	1,356	1,366	1,367	1,368	1,369	2.4%
Non-EU exports	8	8	8	8	8	8	8	8	8	8	8	8	8	0.0%
Stock change	0	0	0	0	-1	0	1	1	0	0	0	0	0	
Consumption														
	kilograms per capita, cwe													
Beef and veal	16.6	16.4	16.3	16.4	16.2	16.1	15.9	15.7	15.6	15.6	15.5	15.4	15.3	-6.7%
Pig meat	40.1	40.1	40.0	40.7	41.2	40.9	40.8	41.0	41.1	41.1	41.1	41.2	41.3	3.0%
Poultry meat	19.9	19.8	20.1	20.0	20.0	20.3	20.4	20.6	20.7	20.9	21.1	21.2	21.4	8.1%
Sheep meat	2.6	2.7	2.7	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.7	0.7%
Total	79.3	79.0	79.0	79.7	80.0	79.8	79.8	80.0	80.1	80.2	80.3	80.5	80.7	2.2%
Prices														
	euro per 100 kilograms													
Cattle reference	270	270	287	261	263	273	276	280	280	277	276	273	269	-0.3%
Pig meat reference	127	138	141	126	123	129	131	130	129	129	129	129	128	-7.5%
Chicken	145	146	140	136	136	138	137	136	135	134	133	131	129	-11.6%
Sheep meat reference	419	409	403	409	436	448	435	426	421	415	420	422	423	3.4%
Beef intervention	206	195	185	175	175	170	170	170	170	166	166	166	166	-15.0%

A-IV-4: WTO Moderate Scenario Irish Livestock Supply & Use Projections

Irish livestock supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Cattle														
	million head													
Beginning inventories	6.33	6.22	6.24	6.18	5.83	5.63	5.52	5.45	5.39	5.33	5.26	5.20	5.14	-17.5%
Dairy cows	1.13	1.14	1.12	1.08	1.08	1.06	1.05	1.03	1.02	1.01	1.00	0.99	0.98	-13.9%
Suckler cows	1.15	1.15	1.15	1.16	1.04	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	-20.7%
Other cattle	4.05	3.94	3.97	3.94	3.71	3.58	3.50	3.46	3.42	3.37	3.33	3.29	3.25	-17.6%
Calf crop	2.13	2.13	2.13	2.10	1.98	1.92	1.88	1.87	1.85	1.83	1.81	1.79	1.76	-17.3%
Cattle imports	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-100.0%
Total supply	8.46	8.36	8.37	8.28	7.80	7.55	7.40	7.32	7.24	7.15	7.07	6.99	6.90	-17.5%
Cattle slaughter	1.86	1.92	1.95	2.19	1.92	1.79	1.72	1.70	1.68	1.67	1.65	1.63	1.61	-16.1%
Cow slaughter	0.33	0.33	0.34	0.61	0.45	0.37	0.32	0.32	0.32	0.31	0.31	0.31	0.30	-8.6%
Calf slaughter	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0%
Other slaughter	1.52	1.58	1.60	1.57	1.47	1.41	1.39	1.37	1.36	1.35	1.33	1.32	1.30	-17.7%
Cattle exports	0.22	0.14	0.18	0.20	0.19	0.19	0.18	0.18	0.17	0.17	0.17	0.17	0.17	19.9%
Destruction, death loss	0.16	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	-17.5%
Ending inventories	6.22	6.24	6.18	5.83	5.63	5.52	5.45	5.39	5.33	5.26	5.20	5.14	5.07	-18.7%
Slaughter weight														
	kilograms per head													
	1000 head													
Live cattle exports	218	139	175	202	194	185	180	176	173	171	169	167	166	19.9%
Calves	78	45	65	69	52	42	37	34	31	29	26	24	21	-52.5%
Non-calves to the EU	146	82	98	121	130	131	131	130	130	130	131	132	133	62.2%
Non-calves to the ROW	-6	12	12	12	12	12	12	12	12	12	12	12	12	0.0%
Pigs														
	million head													
Beginning inventories	1.78	1.73	1.76	1.76	1.72	1.66	1.63	1.63	1.62	1.60	1.59	1.58	1.57	-9.2%
Sows	0.183	0.176	0.179	0.179	0.178	0.176	0.176	0.177	0.176	0.176	0.176	0.175	0.175	-0.2%
Other pigs	1.60	1.56	1.58	1.58	1.54	1.48	1.46	1.45	1.44	1.43	1.41	1.41	1.40	-10.2%
Pig crop	3.16	3.23	3.32	3.34	3.26	3.21	3.22	3.23	3.22	3.21	3.20	3.19	3.19	-1.3%
Pig imports	0.06	0.02	0.05	0.10	0.10	0.09	0.08	0.09	0.09	0.09	0.09	0.09	0.09	341.3%
Total supply	5.00	4.98	5.12	5.20	5.08	4.95	4.93	4.94	4.92	4.89	4.87	4.86	4.85	-2.7%
Pig slaughter	2.87	2.73	2.87	2.99	2.96	2.86	2.85	2.86	2.86	2.85	2.84	2.84	2.84	3.8%
Pig exports	0.45	0.46	0.49	0.48	0.47	0.46	0.46	0.46	0.46	0.46	0.45	0.45	0.45	-2.3%
Destruction, death loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Ending inventories	1.73	1.76	1.76	1.72	1.66	1.63	1.63	1.62	1.60	1.59	1.58	1.57	1.56	-11.4%
Slaughter weight														
	kilograms per head													
	75.6	75.3	75.7	75.8	76.0	76.2	76.4	76.6	76.8	76.9	77.1	77.2	77.3	2.6%
Sheep														
	million head													
Beginning inventories	4.83	4.85	4.65	4.31	4.34	4.34	4.31	4.22	4.12	4.04	3.97	3.93	3.89	-19.7%
Ewes	3.73	3.68	3.53	3.19	3.27	3.27	3.25	3.17	3.09	3.02	2.97	2.94	2.92	-20.6%
Other sheep	1.10	1.17	1.12	1.12	1.08	1.07	1.06	1.05	1.04	1.02	1.01	0.99	0.97	-17.0%
Lamb crop	3.81	3.55	3.41	3.08	3.15	3.16	3.14	3.06	2.98	2.92	2.86	2.84	2.82	-20.7%
Sheep imports	0.02	0.02	0.02	0.00	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.03	0.03	9.7%
Total supply	8.66	8.43	8.07	7.40	7.53	7.53	7.47	7.30	7.13	6.98	6.86	6.79	6.74	-20.0%
Sheep slaughter	3.16	3.45	3.44	2.78	2.91	2.94	2.97	2.90	2.82	2.75	2.67	2.64	2.62	-24.1%
Sheep exports	0.06	0.10	0.11	0.07	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	-30.1%
Destruction, death loss	0.59	0.23	0.22	0.20	0.21	0.21	0.20	0.20	0.20	0.19	0.19	0.19	0.18	-19.7%
Ending inventories	4.85	4.65	4.31	4.34	4.34	4.31	4.22	4.12	4.04	3.97	3.93	3.89	3.87	-16.8%
Slaughter weight														
	kilograms per head													
	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	0.0%

A-IV-5: WTO Moderate Scenario Irish Meat Supply and Use Projections

Irish meat supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
thousand tonnes														
Beef and veal														
Production	561	598	602	673	579	538	517	511	506	501	494	488	481	-19.5%
Imports	18	26	36	39	42	47	58	61	65	74	85	97	109	315.4%
Domestic use	84	88	90	96	100	102	103	102	102	101	102	102	103	17.2%
Exports	500	536	548	616	521	483	471	469	470	474	478	483	488	-9.1%
Intervention stocks	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pig meat														
Production	217	206	217	227	225	218	218	219	220	219	219	219	220	6.6%
Imports	50	59	61	67	69	67	68	70	71	72	72	73	75	26.7%
Domestic use	146	146	146	150	155	158	159	161	163	164	165	166	168	14.9%
Exports	121	119	132	143	139	128	126	128	128	127	126	126	127	6.4%
Ending stocks	15	15	15	15	15	15	15	15	15	15	15	15	15	0.0%
Broiler meat														
Production	95	73	72	72	73	74	74	75	76	76	77	78	78	6.8%
Imports	37	38	40	40	39	38	37	37	37	37	38	38	39	4.8%
Domestic use	108	92	104	104	103	103	103	103	103	104	105	106	107	16.3%
Exports	24	19	8	8	8	8	9	9	9	10	10	10	11	-43.8%
Ending stocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Other poultry meat														
Production	38	37	36	37	37	37	38	38	38	39	39	39	40	6.8%
Imports	19	19	20	20	19	19	19	18	18	18	19	19	20	4.8%
Domestic use	24	42	33	32	32	32	32	32	32	33	34	34	35	-16.6%
Exports	33	14	23	24	24	24	24	24	24	24	24	24	24	75.9%
Ending stocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Sheep meat														
Production	63	69	69	55	58	59	59	58	56	55	53	53	52	-24.1%
Imports	2	2	2	2	2	2	2	2	2	2	2	2	2	0.0%
Domestic use	21	29	31	28	26	27	28	28	29	30	30	30	30	5.6%
Exports	44	42	40	29	34	34	33	31	29	27	25	24	24	-43.3%
Stock change	0	0	0	0	0	0	0	0	0	0	0	0	0	
kilograms per capita, cwe														
Consumption														
Beef and veal	21	22	22	24	24	25	24	24	23	23	23	23	23	3.0%
Pig meat	37	37	36	37	38	38	38	38	38	37	37	37	37	1.0%
Broiler meat	27	23	26	26	25	25	24	24	24	24	24	24	24	2.3%
Other poultry meat	6	11	8	8	8	8	8	8	7	8	8	8	8	-26.7%
Sheep meat	5	7	8	7	6	6	7	7	7	7	7	7	7	-7.1%
Total	97	100	100	101	101	101	101	100	99	98	98	98	98	-1.8%
euro per 100 kilograms														
Market prices														
Cattle reference	109.7	115.8	110.0	95.2	96.4	100.7	102.1	103.8	103.9	102.5	101.9	100.6	98.8	-14.7%
Pig meat	126.0	137.0	134.4	121.5	119.1	125.3	126.9	125.5	124.9	125.0	125.6	125.1	124.0	-9.5%
Sheep meat representative	360.4	347.8	316.9	347.8	372.7	383.8	371.3	363.4	358.6	353.1	357.4	359.5	360.5	3.7%
euro per pair														
Chicken	3.08	2.83	2.72	2.65	2.65	2.68	2.67	2.66	2.64	2.61	2.59	2.56	2.54	-10.4%

A-IV-6: WTO Moderate Scenario EU 25 Dairy Commodity Supply & Use Projections

EU 25 dairy supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
	thousand head, end of year													
Dairy cows	24,456	23,963	23,247	23,043	22,806	22,522	22,219	21,916	21,614	21,310	21,018	20,730	20,446	-14.7%
Production/cow	5,898	5,994	6,201	6,260	6,326	6,392	6,462	6,533	6,603	6,669	6,738	6,809	6,878	14.8%
	million tonnes													
Fluid milk														
Cow's milk Production	144.24	143.64	144.15	144.25	144.27	143.96	143.58	143.18	142.71	142.11	141.62	141.15	140.63	-2.1%
Milk quota			138.05	139.02	139.50	139.50	139.50	139.50	139.50	139.50	139.50	139.50	139.50	14.7%
Other milk production	3.34	3.33	3.34	3.35	3.36	3.37	3.38	3.39	3.40	3.41	3.42	3.43	3.44	3.3%
Fluid consumption	40.32	40.37	41.39	41.47	41.39	41.27	41.10	40.92	40.78	40.68	40.55	40.40	40.26	-0.3%
Manufacturing use	100.94	100.28	99.80	99.85	99.98	99.85	99.71	99.57	99.31	98.87	98.58	98.32	98.01	-2.3%
Feed use, net exports	6.33	6.32	6.30	6.28	6.26	6.21	6.15	6.08	6.02	5.97	5.91	5.86	5.80	-8.2%
	thousand tonnes													
Cheese														
Production	8,162	8,264	8,362	8,477	8,533	8,587	8,622	8,662	8,699	8,749	8,806	8,843	8,879	7.4%
Imports	138	141	145	147	149	151	152	154	165	178	158	160	162	14.7%
Domestic use	7,726	7,807	7,908	8,033	8,111	8,181	8,236	8,291	8,355	8,429	8,492	8,550	8,615	10.4%
Exports	579	569	583	577	562	549	532	519	504	491	467	447	420	-26.2%
Ending stocks	463	492	509	524	534	541	548	553	559	566	572	578	583	18.5%
	thousand tonnes													
Butter														
Production	2,176	2,123	2,103	2,081	2,085	2,081	2,081	2,080	2,074	2,052	2,041	2,020	1,999	-5.8%
Imports	93	112	121	121	121	121	121	121	121	121	121	121	121	7.8%
Domestic use	1,902	1,946	1,932	1,979	1,994	1,988	1,974	1,959	1,959	1,994	2,003	2,032	2,038	4.8%
Exports	331	343	299	271	249	237	236	243	225	185	145	105	65	-81.1%
Ending stocks	265	212	205	156	120	97	89	88	100	95	109	113	130	-38.7%
	thousand tonnes													
Skim powder														
Production	1,442	1,240	1,268	1,210	1,212	1,198	1,198	1,196	1,186	1,150	1,130	1,095	1,056	-14.8%
Imports	58	61	61	61	61	61	61	61	61	61	61	61	61	0.0%
Domestic use	1,189	1,200	1,208	1,202	1,167	1,163	1,151	1,140	1,126	1,106	1,092	1,070	1,064	-11.4%
Exports	290	241	174	121	107	103	108	112	114	112	106	97	58	-75.9%
Ending stocks	402	262	210	157	156	150	149	154	161	154	147	137	132	-49.7%
	thousand tonnes													
Whole powder														
Production	875	815	766	752	733	704	674	644	618	602	564	581	593	-27.2%
Imports	20	20	17	17	17	18	18	18	18	19	19	19	19	-3.9%
Domestic use	364	325	334	340	345	351	355	360	365	369	375	376	378	16.2%
Exports	530	509	447	426	403	369	336	302	271	251	208	223	234	-54.0%
Ending stocks	25	25	28	30	32	34	35	36	38	39	40	40	40	57.7%
	kilograms per capita													
Consumption														
Fluid milk	80.47	80.38	88.75	88.93	88.72	88.44	88.06	87.68	87.39	87.19	86.91	86.60	86.32	7.4%
Cheese	15.42	15.54	18.21	18.46	18.60	18.72	18.82	18.92	19.04	19.18	19.30	19.41	19.54	25.7%
Butter	3.80	3.87	4.33	4.44	4.47	4.45	4.41	4.36	4.36	4.44	4.46	4.53	4.54	17.3%
	euro per 100 kilograms													
Prices														
Milk, 3.7% fat	29	29	28	27	26	26	26	26	25	25	25	24	24	-16.1%
Cheese market	482	490	477	462	456	452	450	449	445	439	436	433	430	-12.4%
Butter market	363	363	324	299	287	283	281	280	274	260	252	240	234	-35.5%
SMP market	204	206	182	177	181	179	179	180	180	182	182	185	184	-11.0%
WMP market	254	254	235	225	218	212	206	202	196	192	185	187	188	-25.7%
Butter intervention	328	305	282	259	246	240	240	240	240	222	222	209	209	-31.5%
SMP intervention	206	195	185	175	175	170	170	170	170	166	166	166	166	-15.0%

A-IV-7: WTO Moderate Scenario Irish Dairy Commodity Supply & Use Projections

Irish dairy supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
	thousand head, end of year													
Dairy cows	1,156	1,157	1,118	1,108	1,095	1,080	1,067	1,053	1,041	1,030	1,019	1,009	998	-13.7%
	kilograms													
Production/cow	4,822	4,805	4,862	4,885	4,932	4,977	5,026	5,076	5,130	5,183	5,237	5,292	5,346	11.3%
	million tonnes													
Fluid milk														
Cow's milk Production	5.57	5.56	5.44	5.41	5.40	5.38	5.36	5.34	5.34	5.34	5.34	5.34	5.34	-4.0%
Milk quota	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	0.0%
Other milk production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Fluid consumption	0.51	0.55	0.59	0.60	0.60	0.61	0.62	0.63	0.64	0.64	0.65	0.66	0.67	22.5%
Manufacturing use	4.87	4.82	4.66	4.64	4.62	4.59	4.57	4.55	4.54	4.53	4.52	4.51	4.50	-6.6%
Feed use, net exports	0.19	0.19	0.19	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.16	-13.4%
	thousand tonnes													
Cheese														
Production	112	117	123	124	125	125	126	126	127	128	129	130	131	12.0%
Imports	14	16	16	17	19	20	22	23	25	26	27	29	30	88.0%
Domestic use	32	33	35	37	38	40	42	44	46	48	50	52	54	61.7%
Exports	96	100	103	104	104	105	105	105	105	106	106	107	107	7.9%
Ending stocks	27	27	27	27	28	28	28	29	29	29	29	29	30	10.1%
	thousand tonnes													
Butter														
Production	155	144	132	129	129	128	127	126	126	125	125	124	123	-14.6%
Imports	1	1	4	5	5	5	5	5	5	5	5	5	5	340.3%
Domestic use	17	16	17	17	17	18	18	18	19	19	19	19	20	20.6%
Exports	146	140	121	117	116	115	114	112	110	111	108	108	105	-25.4%
Ending stocks	93	81	79	79	79	78	79	80	82	82	85	86	89	10.4%
	thousand tonnes													
Skim powder														
Production	88	84	64	55	52	49	49	48	47	47	46	46	44	-48.1%
Imports	3	4	4	4	4	4	5	5	5	5	5	6	6	59.1%
Domestic use	11	11	12	12	12	12	12	12	12	12	12	12	12	7.3%
Exports	97	85	58	48	46	42	41	41	40	40	39	39	38	-56.0%
Ending stocks	78	69	67	66	66	66	66	66	66	66	66	66	66	-5.4%
	thousand tonnes													
Whole powder														
Production	29	29	29	29	29	29	28	28	28	27	27	27	28	-4.9%
Imports	30	30	30	30	30	30	29	29	29	28	28	28	29	-4.8%
Domestic use	1	1	1	1	1	1	1	1	1	1	1	1	1	0.0%
Exports	1	1	1	1	1	1	1	1	1	1	1	1	1	0.0%
Ending stocks	48	47	51	54	54	55	55	55	55	55	55	55	55	18.3%
	kilograms per capita													
Consumption														
Fluid milk	130.47	137.51	146.03	146.31	146.32	146.35	146.38	146.43	146.75	147.09	147.43	147.76	148.12	7.7%
Cheese	8.14	8.37	8.70	9.02	9.32	9.62	9.93	10.24	10.56	10.89	11.22	11.55	11.89	42.2%
Butter	4.19	4.12	4.17	4.21	4.23	4.25	4.26	4.28	4.29	4.32	4.33	4.36	4.37	
	euro/100 kg													
Milk price, 3.7% fat	25.4	25.0	24.4	22.3	22.1	21.9	21.8	21.8	21.7	21.4	21.2	21.1	20.9	-16.5%
	thousand tonnes													
Casein														
Production	48	47	51	54	54	55	55	55	55	55	55	55	55	18.3%
Imports	2	2	2	2	2	2	2	2	2	2	2	2	2	0.0%
Exports	43	42	46	48	49	49	49	49	49	49	49	49	49	17.9%
Domestic Uses & Stock change	5	5	5	6	6	6	6	6	6	6	6	6	6	22.1%

A-IV-8: WTO Moderate Scenario Irish Input Use and Expenditure Projections

Irish Input Utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Feed														
Price								euro per tonne						
Dairy	210.25	218.00	210.72	209.05	209.04	209.91	210.65	210.75	210.44	209.87	209.42	209.02	208.45	-4.4%
Beef	213.27	221.12	210.32	208.57	208.56	209.47	210.25	210.35	210.03	209.43	208.95	208.54	207.94	-6.0%
Per head								kg/head						
Dairy	784	844	826	780	761	753	752	752	712	712	712	712	711	-15.8%
Beef	215	181	190	192	191	176	162	151	144	139	135	131	127	-29.6%
Total								000 tonnes						
Dairy	887	977	923	865	833	814	802	792	742	734	726	718	710	-27.3%
Beef	1,227	1,043	1,098	1,100	1,034	920	827	765	721	688	659	632	606	-41.9%
All animals & poultry	3,286	3,120	3,136	3,084	2,984	2,843	2,736	2,666	2,576	2,536	2,500	2,465	2,431	-22.1%
Fertilizer														
Nitrogen Application								kg/ha						
Per Ha of Grassland Area	98	92	90	86	84	82	82	82	82	82	82	82	82	-10.9%
Per Ha of Crop Area	143	135	138	141	141	140	139	139	138	138	138	138	138	2.2%
Total NPK Application								000 tonnes						
	543	516	490	459	442	432	427	424	421	418	415	412	409	-20.7%
Intermediate Consumption of Inputs of which:								million Euro						
feedingsuffs	923	904	830	796	764	730	705	688	665	653	643	633	624	-31.0%
fertilisers	371	358	347	330	321	314	311	309	308	307	307	307	307	-14.3%
energy and lubricants	227	245	273	278	277	270	268	268	269	272	274	276	279	13.8%
forage work	631	677	645	649	653	658	663	667	672	675	679	683	687	1.6%
contract work	248	263	266	271	276	283	289	296	302	307	313	319	325	23.5%

Annex V WTO Low Scenario Commodity Supply and Use Projections

A-V-1 WTO Low Scenario EU 25 Cereal Supply and Use Projections

EU-25 wheat supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015
Soft wheat														
Area harvested	22,157	23,337	23,125	22,584	22,296	22,222	22,345	22,389	22,395	22,410	22,483	22,537	22,564	-3.3%
Yield	4.8	5.8	5.4	5.5	5.5	5.5	5.6	5.6	5.6	5.7	5.7	5.7	5.8	0.0%
Production	105	134	126	123	123	123	125	125	126	127	128	129	130	-3.3%
Beginning stocks	18	12	27	26	23	20	18	18	18	18	18	18	19	53.3%
Imports	7	7	7	7	7	7	7	7	7	7	6	6	6	-13.4%
Total supply	130	154	160	155	152	150	150	150	150	151	152	154	155	0.7%
Domestic use	104	110	116	117	117	117	118	118	118	119	119	120	121	9.4%
Feed	46	52	56	56	56	56	56	56	56	57	57	57	58	11.9%
Other	59	59	61	61	61	61	61	62	62	62	62	63	63	7.3%
Exports	13	17	18	16	15	14	14	14	14	14	15	15	15	-9.3%
Ending stocks	12	27	26	23	20	18	18	18	18	18	18	19	19	-29.1%
Loss, statistical disc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Net exports	7	9	11	9	8	8	8	8	8	8	8	8	9	-6.1%
Set-aside rate	10	5	10	10	10	10	10	10	10	10	10	10	10	100.0%
Intervention price	101	101	101	101	101	101	101	101	101	101	101	101	101	0.0%
Market price	129	105	101	103	105	107	107	108	108	108	107	107	106	0.2%

EU-25 barley and maize supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015
Barley														
Area harvested	13,363	12,954	12,722	13,276	13,358	13,135	12,945	12,916	12,905	12,900	12,880	12,867	12,859	-0.7%
Yield	4.2	4.8	4.0	4.4	4.4	4.5	4.5	4.6	4.6	4.7	4.7	4.7	4.8	0.6%
Production	56	62	51	58	59	59	59	59	60	60	61	61	61	-0.1%
Beginning stocks	10	6	12	10	10	10	10	10	10	11	11	11	11	80.5%
Imports	1	1	2	1	1	1	1	1	1	1	1	1	1	-5.6%
Total supply	67	69	65	70	71	71	70	71	71	72	73	73	74	7.2%
Domestic use	56	50	49	51	52	52	52	52	52	52	52	52	52	3.2%
Feed	41	38	38	39	40	40	40	40	40	40	40	40	40	5.0%
Other	14	12	12	12	12	12	12	12	12	12	12	12	12	-2.5%
Exports	5	6	6	9	8	9	8	9	9	9	9	10	10	63.8%
Ending stocks	6	12	10	10	10	10	10	10	11	11	11	11	12	-5.0%
Net exports	4	5	4	7	7	7	7	7	8	8	8	9	9	78.6%
Set-aside rate	10	10	5	10	10	10	10	10	10	10	10	10	10	0.0%
Intervention price	101	101	101	101	101	101	101	101	101	101	101	101	101	0.0%
Market price	117	103	105	103	103	104	105	105	105	105	104	104	103	0.6%
Maize for grain														
Area harvested	6,213	6,571	6,213	6,097	6,104	6,108	6,156	6,154	6,156	6,155	6,153	6,149	6,150	-6.4%
Yield	6.6	8.2	8.0	8.1	8.2	8.2	8.3	8.4	8.4	8.5	8.6	8.7	8.7	6.3%
Production	41	54	50	49	50	50	51	52	52	52	53	53	54	-0.5%
Beginning stocks	9	7	10	9	8	8	8	8	8	8	8	9	9	26.0%
Imports	6	3	7	7	7	6	6	7	7	7	7	7	7	135.8%
Total supply	56	64	67	65	65	65	65	66	67	68	68	69	70	9.0%
Domestic use	48	51	52	51	51	51	52	52	53	53	53	54	54	6.0%
Feed	38	42	42	42	42	42	43	43	43	44	44	44	44	5.6%
Other	9	9	9	9	9	9	9	9	10	10	10	10	10	7.9%
Exports	2	3	6	6	6	5	6	6	6	6	6	6	7	160.2%
Ending stocks	7	10	9	8	8	8	8	8	8	8	9	9	9	-13.6%
Net exports	-4	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	25.0%
Set-aside rate	10	5	10	10	10	10	10	10	10	10	10	10	10	100.0%
Intervention price	101	101	101	101	101	101	101	101	101	101	101	101	101	0.0%
Market price	142	115	107	113	115	115	114	114	113	111	110	108	107	-7.1%

A-V-2 WTO Low Scenario Irish Cereal Supply and Use Projections

Irish wheat supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015
Wheat														
Wheat area harvested	95.7	102.7	84.0	81.6	81.0	80.1	79.3	79.1	78.9	78.8	78.5	78.1	77.6	-24.5%
Wheat yield	7.3	8.8	8.9	9.1	9.2	9.3	9.5	9.6	9.6	9.6	9.6	9.6	9.6	9.9%
Production	703.2	898.7	746.9	745.3	743.7	747.8	750.9	760.2	759.8	758.6	755.7	751.1	745.8	-17.0%
Beginning stocks	11.6	39.5	66.7	57.2	51.9	48.6	46.8	45.7	45.4	44.7	43.8	42.6	41.1	4.2%
Imports	811.6	599.1	661.8	685.3	693.0	684.4	680.4	678.4	676.5	685.0	696.5	710.1	725.0	21.0%
Total supply	1,526.5	1,537.2	1,475.4	1,487.8	1,488.5	1,480.8	1,478.1	1,484.4	1,481.7	1,488.3	1,496.0	1,503.9	1,512.0	-1.6%
Domestic use	1,320.3	1,303.8	1,251.5	1,269.3	1,273.3	1,267.3	1,265.8	1,272.3	1,270.3	1,277.8	1,286.7	1,296.1	1,305.9	0.2%
Feed	909.3	861.4	772.1	769.8	754.3	728.4	707.5	694.7	677.3	669.6	663.0	656.9	651.0	-24.4%
Other	411.1	442.5	479.4	499.4	518.9	538.8	558.2	577.6	593.0	608.3	623.7	639.2	654.9	48.0%
Exports	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	166.7	0.0%
Ending stocks	39.5	66.7	57.2	51.9	48.6	46.8	45.7	45.4	44.7	43.8	42.6	41.1	39.4	-40.9%
Loss, statistical disc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Prices	Jan.-Dec. average													
Feed wheat	120.0	107.8	109.9	108.8	108.8	109.4	109.9	110.0	109.9	109.5	109.3	109.1	108.7	0.8%

Irish barley supply and utilisation

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	2004 v 2015
Barley														
Barley area harvested	183	184	152	148	147	147	147	148	149	150	152	153	154	-15.9%
Barley yield	6.5	6.5	6.8	6.8	6.8	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.8	5.2%
Production	1,198	1,197	1,031	1,010	1,006	1,008	1,014	1,021	1,027	1,034	1,042	1,049	1,058	-11.6%
Beginning stocks	67	110	124	116	111	108	107	107	107	108	108	108	109	-0.6%
Imports	110	202	216	236	237	228	220	216	208	206	204	203	202	-0.1%
Total supply	1,375	1,508	1,371	1,362	1,354	1,344	1,341	1,344	1,343	1,348	1,354	1,361	1,369	-9.3%
Domestic use	1,155	1,303	1,188	1,203	1,199	1,181	1,170	1,170	1,159	1,162	1,166	1,171	1,177	-9.6%
Feed	865	916	793	790	768	732	703	685	661	651	642	633	625	-31.8%
Other	290	386	395	414	431	449	467	484	498	511	525	538	553	43.0%
Exports	102	82	68	48	47	56	64	68	76	78	79	81	82	0.2%
Ending stocks	118	124	116	111	108	107	107	107	108	108	108	109	110	-11.9%
Market prices	euro per tonne, Jan.-Dec.													
Feed barley	111.3	92.7	106.1	104.9	104.9	105.6	106.1	106.2	106.0	105.7	105.5	105.3	104.9	13.1%
Malt barley	123.7	103.0	123.9	122.7	122.7	123.3	123.9	123.9	123.8	123.5	123.3	123.1	122.7	19.1%

A-V-3: WTO Low Scenario EU 25 Livestock and Meat Supply & Use Projections

EU 25 livestock supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Cattle														
million head														
Beginning inventories	88.76	87.49	85.72	85.71	84.82	83.71	82.57	81.48	80.47	79.54	78.72	77.98	77.29	-11.7%
Dairy cows	24.46	23.96	23.37	23.18	22.97	22.71	22.42	22.12	21.82	21.53	21.24	20.96	20.68	-13.7%
Suckler cows	12.03	12.01	12.07	12.11	11.61	11.25	11.08	10.99	10.95	10.96	11.01	11.08	11.12	-7.4%
Cattle slaughter	29.17	29.50	28.68	29.72	29.43	28.94	28.67	28.28	27.92	27.60	27.31	27.09	26.90	-8.8%
kilograms per head														
Slaughter weight	277.82	277.56	277.73	275.27	274.84	275.34	275.34	275.54	275.76	276.01	276.25	276.10	275.88	-0.6%
Pigs														
million head														
Beginning inventories	154.47	152.90	151.76	154.60	158.70	157.14	156.24	157.08	157.58	157.39	157.33	157.64	157.97	3.3%
Sows	15.74	15.21	14.87	15.68	15.55	15.27	15.30	15.37	15.32	15.26	15.24	15.25	15.23	0.1%
Pig slaughter	241.52	240.62	240.96	247.66	250.78	248.32	248.02	249.35	249.76	249.53	249.69	250.32	250.70	4.2%
kilograms per head														
Slaughter weight	88.72	88.76	88.99	88.38	88.29	88.66	88.89	88.96	89.11	89.32	89.54	89.70	89.84	1.2%
Sheep														
million head														
Beginning inventories	89.92	89.57	89.38	87.16	84.84	84.31	84.53	84.09	83.23	82.33	81.48	81.06	80.90	-9.7%
Ewes	66.62	66.62	66.08	63.86	62.39	62.01	62.05	61.40	60.56	59.77	59.03	58.73	58.57	-12.1%
Sheep slaughter	64.37	65.13	66.28	63.81	61.22	60.30	60.96	60.67	59.84	59.00	57.86	57.35	57.12	-12.3%
Slaughter weight	16.48	16.44	16.50	16.60	16.75	16.84	16.90	16.93	16.96	16.98	17.01	17.05	17.09	3.9%

EU 25 meat supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Beef and veal														
thousand tonnes														
Production	8,104	8,187	7,964	8,181	8,089	7,969	7,894	7,791	7,700	7,618	7,544	7,480	7,421	-9.4%
Non-EU imports	485	550	626	615	628	646	658	670	682	692	693	684	677	23.1%
Domestic use	8,296	8,259	8,200	8,270	8,197	8,135	8,077	7,993	7,919	7,850	7,789	7,757	7,732	-6.4%
Non-EU exports	492	513	396	523	516	479	473	467	461	458	446	404	362	-29.5%
Stock change	-199	-36	-6	3	3	1	2	2	2	2	2	3	4	-111.6%
Intervention/SPS stocks	20	0	0	0	0	0	0	0	0	0	0	0	0	
Pig meat														
Production	21,427	21,359	21,443	21,887	22,140	22,016	22,046	22,183	22,256	22,288	22,357	22,454	22,523	5.5%
Non-EU imports	30	26	30	30	30	30	30	30	30	30	30	30	30	15.8%
Domestic use	20,109	20,120	20,117	20,559	20,810	20,693	20,691	20,827	20,915	20,961	21,005	21,067	21,131	5.0%
Non-EU exports	1,341	1,334	1,371	1,328	1,345	1,358	1,385	1,379	1,365	1,352	1,379	1,410	1,415	6.1%
Stock change	6	-69	-14	30	16	-4	0	7	6	4	4	6	7	-110.0%
Poultry														
Production	10,368	10,522	10,669	10,627	10,657	10,755	10,849	10,925	11,006	11,098	11,195	11,277	11,351	7.9%
Non-EU imports	595	445	450	454	456	458	460	462	464	466	467	469	471	5.8%
Domestic use	9,982	9,935	10,105	10,071	10,128	10,251	10,354	10,440	10,535	10,640	10,750	10,842	10,928	10.0%
Non-EU exports	973	1,031	1,007	989	974	958	946	936	925	913	902	892	881	-14.5%
Stock change	9	1	7	20	11	4	9	11	10	10	11	12	12	1345.2%
Sheep meat														
Production	1,061	1,071	1,094	1,059	1,026	1,016	1,030	1,027	1,015	1,002	984	978	976	-8.9%
Non-EU imports	272	275	275	279	288	302	310	328	352	378	396	404	407	48.3%
Domestic use	1,324	1,337	1,356	1,330	1,306	1,310	1,332	1,346	1,358	1,371	1,372	1,373	1,375	2.8%
Non-EU exports	8	8	8	8	8	8	8	8	8	8	8	8	8	0.0%
Stock change	0	0	0	0	-1	0	1	1	0	0	0	0	0	
Consumption														
kilograms per capita, cwe														
Beef and veal	16.6	16.4	16.3	16.4	16.2	16.1	15.9	15.7	15.6	15.4	15.3	15.2	15.1	-7.9%
Pig meat	40.1	40.1	40.0	40.7	41.2	40.9	40.8	41.0	41.1	41.2	41.2	41.3	41.4	3.4%
Poultry meat	19.9	19.8	20.1	20.0	20.0	20.2	20.4	20.6	20.7	20.9	21.1	21.3	21.4	8.2%
Sheep meat	2.6	2.7	2.7	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.7	1.2%
Total	79.3	79.0	79.0	79.7	80.0	79.8	79.8	80.0	80.1	80.2	80.3	80.5	80.7	2.2%
Prices														
euro per 100 kilograms														
Cattle reference	270	270	287	261	263	273	276	280	284	288	291	288	284	5.2%
Pig meat reference	127	138	141	126	123	129	131	130	129	130	130	130	128	-6.8%
Chicken	145	146	140	136	136	138	138	137	136	135	134	132	131	-10.6%
Sheep meat reference	419	409	403	409	436	448	435	426	421	416	421	423	424	3.8%
Beef intervention	206	195	185	175	175	170	170	170	170	170	170	170	170	-12.8%

A-V-4: WTO Low Scenario Irish Livestock Supply and Use Projections

Irish livestock supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Cattle														
	million head													
Beginning inventories	6.33	6.22	6.24	6.18	5.83	5.63	5.52	5.45	5.39	5.33	5.27	5.22	5.16	-17.1%
Dairy cows	1.13	1.14	1.12	1.08	1.08	1.06	1.05	1.03	1.02	1.01	1.00	0.99	0.98	-14.0%
Suckler cows	1.15	1.15	1.15	1.16	1.04	0.99	0.97	0.96	0.95	0.95	0.94	0.93	0.92	-20.0%
Other cattle	4.05	3.94	3.97	3.94	3.71	3.58	3.50	3.46	3.42	3.38	3.34	3.30	3.26	-17.2%
Calf crop	2.13	2.13	2.13	2.10	1.98	1.92	1.88	1.87	1.85	1.83	1.81	1.79	1.77	-17.0%
Cattle imports	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-100.0%
Total supply	8.46	8.36	8.37	8.28	7.80	7.55	7.40	7.32	7.24	7.16	7.08	7.01	6.93	-17.1%
Cattle slaughter	1.86	1.92	1.95	2.19	1.92	1.79	1.72	1.70	1.68	1.67	1.65	1.64	1.62	-15.7%
Cow slaughter	0.33	0.33	0.34	0.61	0.45	0.37	0.32	0.32	0.31	0.31	0.31	0.30	0.30	-9.8%
Calf slaughter	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0%
Other slaughter	1.52	1.58	1.60	1.57	1.47	1.41	1.39	1.37	1.36	1.35	1.34	1.33	1.32	-16.9%
Cattle exports	0.22	0.14	0.18	0.20	0.19	0.19	0.18	0.18	0.17	0.17	0.16	0.16	0.16	14.7%
Destruction, death loss	0.16	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	-17.1%
Ending inventories	6.22	6.24	6.18	5.83	5.63	5.52	5.45	5.39	5.33	5.27	5.22	5.16	5.10	-18.3%
	kilograms per head													
Slaughter weight	301.6	311.1	309.2	307.7	301.7	300.8	301.1	301.0	301.0	301.0	300.9	300.7	300.0	-3.6%
	1000 head													
Live cattle exports	218	139	175	202	194	185	180	176	171	167	163	160	159	14.7%
Calves	78	45	65	69	52	42	37	34	31	28	25	23	20	-54.6%
Non-calves to the EU	146	82	98	121	130	131	131	130	129	127	126	126	127	54.7%
Non-calves to the ROW	-6	12	12	12	12	12	12	12	12	12	12	12	12	0.0%
Pigs														
	million head													
Beginning inventories	1.78	1.73	1.76	1.76	1.72	1.66	1.63	1.63	1.62	1.60	1.59	1.59	1.58	-8.8%
Sows	0.183	0.176	0.179	0.179	0.178	0.176	0.176	0.177	0.176	0.176	0.176	0.176	0.175	0.0%
Other pigs	1.60	1.56	1.58	1.58	1.54	1.48	1.46	1.45	1.44	1.43	1.42	1.41	1.40	-9.8%
Pig crop	3.16	3.23	3.32	3.34	3.26	3.21	3.22	3.23	3.22	3.21	3.20	3.20	3.19	-1.1%
Pig imports	0.06	0.02	0.05	0.10	0.10	0.09	0.08	0.09	0.09	0.09	0.09	0.09	0.09	335.8%
Total supply	5.00	4.98	5.12	5.20	5.08	4.95	4.93	4.94	4.92	4.90	4.88	4.88	4.86	-2.4%
Pig slaughter	2.87	2.73	2.87	2.99	2.96	2.86	2.85	2.86	2.86	2.85	2.84	2.84	2.84	3.9%
Pig exports	0.45	0.46	0.49	0.48	0.47	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.45	-1.9%
Destruction, death loss	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
Ending inventories	1.73	1.76	1.76	1.72	1.66	1.63	1.63	1.62	1.60	1.59	1.59	1.58	1.56	-11.0%
	kilograms per head													
Slaughter weight	75.6	75.3	75.7	75.8	76.0	76.2	76.4	76.6	76.8	76.9	77.1	77.2	77.3	2.6%
Sheep														
	million head													
Beginning inventories	4.83	4.85	4.65	4.31	4.34	4.34	4.30	4.21	4.11	4.02	3.94	3.88	3.84	-20.9%
Ewes	3.73	3.68	3.53	3.19	3.27	3.27	3.24	3.16	3.08	3.00	2.93	2.90	2.87	-22.0%
Other sheep	1.10	1.17	1.12	1.12	1.08	1.07	1.06	1.05	1.04	1.02	1.00	0.99	0.97	-17.3%
Lamb crop	3.81	3.55	3.41	3.08	3.15	3.16	3.13	3.05	2.97	2.90	2.83	2.79	2.77	-22.1%
Sheep imports	0.02	0.02	0.02	0.00	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.03	0.03	7.2%
Total supply	8.66	8.43	8.07	7.40	7.53	7.52	7.46	7.29	7.10	6.95	6.79	6.70	6.63	-21.3%
Sheep slaughter	3.16	3.45	3.44	2.78	2.91	2.94	2.97	2.90	2.81	2.75	2.65	2.61	2.58	-25.4%
Sheep exports	0.06	0.10	0.11	0.07	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	-31.6%
Destruction, death loss	0.59	0.23	0.22	0.20	0.21	0.21	0.20	0.20	0.20	0.19	0.19	0.18	0.18	-20.9%
Ending inventories	4.85	4.65	4.31	4.34	4.34	4.30	4.21	4.11	4.02	3.94	3.88	3.84	3.81	-18.1%
	kilograms per head													
Slaughter weight	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	0.0%

A-V-5: WTO Low Scenario Irish Meat Supply and Use Projections

Irish meat supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
thousand tonnes														
Beef and veal														
Production	561	598	602	673	579	538	516	511	506	502	497	492	486	-18.7%
Imports	18	26	36	39	42	44	58	61	63	65	67	73	80	204.2%
Domestic use	84	88	90	96	100	102	103	102	101	99	98	97	97	11.1%
Exports	500	536	548	616	521	479	471	469	468	467	466	467	469	-12.6%
Intervention stocks	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pig meat														
Production	217	206	217	227	225	218	218	219	219	219	219	220	220	6.7%
Imports	50	59	61	67	69	67	68	70	71	71	72	74	75	26.8%
Domestic use	146	146	146	150	155	158	159	161	163	163	164	165	166	13.8%
Exports	121	119	132	143	139	128	126	128	128	127	127	128	129	8.0%
Ending stocks	15	15	15	15	15	15	15	15	15	15	15	15	15	0.0%
Broiler meat														
Production	95	73	72	72	73	74	74	75	76	76	77	78	78	7.0%
Imports	37	38	40	40	39	38	37	37	37	37	38	39	40	7.3%
Domestic use	108	92	104	104	103	103	103	102	103	104	105	107	108	17.4%
Exports	24	19	8	8	8	8	9	9	9	10	10	10	11	-43.4%
Ending stocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Other poultry meat														
Production	38	37	36	37	37	37	38	38	38	39	39	39	40	7.0%
Imports	19	19	20	20	19	19	19	18	18	19	19	20	20	7.3%
Domestic use	24	42	33	32	32	32	32	32	32	33	34	35	36	-15.4%
Exports	33	14	23	24	24	24	24	24	24	24	24	24	24	75.9%
Ending stocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Sheep meat														
Production	63	69	69	55	58	59	59	58	56	55	53	52	51	-25.4%
Imports	2	2	2	2	2	2	2	2	2	2	2	2	2	0.0%
Domestic use	21	29	31	28	26	27	28	28	29	29	29	29	30	3.2%
Exports	44	42	40	29	34	34	33	31	29	27	25	25	24	-43.8%
Stock change	0	0	0	0	0	0	0	0	0	0	0	0	0	
kilograms per capita, cwe														
Consumption														
Beef and veal	21	22	22	24	24	25	24	24	23	23	22	22	22	-2.3%
Pig meat	37	37	36	37	38	38	38	38	38	37	37	37	37	0.0%
Broiler meat	27	23	26	26	25	25	24	24	24	24	24	24	24	3.2%
Other poultry meat	6	11	8	8	8	8	8	7	7	8	8	8	8	-25.6%
Sheep meat	5	7	8	7	6	6	7	7	7	7	7	7	7	-9.3%
Total	97	100	100	101	101	101	101	100	99	98	97	97	97	-3.2%
euro per 100 kilograms														
Market prices														
Cattle reference	109.7	115.8	110.0	95.2	96.4	100.7	102.2	104.0	105.6	107.3	108.6	107.3	105.5	-9.0%
Pig meat	126.0	137.0	134.4	121.5	119.1	125.3	127.0	125.6	125.3	125.9	126.4	125.6	124.7	-8.9%
Sheep meat representative	360.4	347.8	316.9	347.8	372.8	383.8	371.4	363.5	359.0	354.2	358.7	360.7	361.9	4.0%
euro per pair														
Chicken	3.08	2.83	2.72	2.65	2.65	2.68	2.68	2.66	2.65	2.64	2.62	2.59	2.56	-9.4%

A-V-6: WTO Low Scenario EU 25 Dairy Commodity Supply and Use Projections

EU 25 dairy supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Dairy cows	24,456	23,963	23,247	23,043	22,804	22,519	22,215	21,920	21,627	21,335	21,047	20,766	20,481	-14.5%
Production/cow	5,898	5,994	6,201	6,260	6,327	6,394	6,465	6,537	6,608	6,679	6,750	6,822	6,890	14.9%
Fluid milk														
Cow's milk Production	144.24	143.64	144.15	144.25	144.28	143.98	143.62	143.28	142.91	142.50	142.08	141.67	141.11	-1.8%
Milk quota			138.05	139.02	139.50	139.50	139.50	139.50	139.50	139.50	139.50	139.50	139.50	
Other milk production	3.34	3.33	3.34	3.35	3.36	3.37	3.38	3.39	3.40	3.41	3.42	3.43	3.44	3.3%
Fluid consumption	40.32	40.37	41.39	41.47	41.38	41.24	41.06	40.87	40.70	40.53	40.37	40.20	40.10	-0.7%
Manufacturing use	100.94	100.28	99.80	99.85	99.99	99.90	99.80	99.72	99.59	99.43	99.23	99.06	98.66	-1.6%
Feed use, net exports	6.33	6.32	6.30	6.28	6.26	6.21	6.14	6.08	6.02	5.95	5.90	5.84	5.79	-8.3%
Cheese														
Production	8,162	8,264	8,362	8,477	8,534	8,590	8,627	8,666	8,697	8,725	8,781	8,832	8,903	7.7%
Imports	138	141	145	147	149	151	152	164	185	208	193	178	163	15.8%
Domestic use	7,726	7,807	7,908	8,033	8,108	8,172	8,221	8,273	8,330	8,385	8,440	8,490	8,559	9.6%
Exports	579	569	583	577	567	562	553	551	547	543	529	516	501	-11.9%
Ending stocks	463	492	509	524	533	541	546	552	557	562	568	572	578	17.5%
Butter														
Production	2,176	2,123	2,103	2,081	2,084	2,077	2,076	2,075	2,074	2,072	2,056	2,043	2,022	-4.8%
Imports	93	112	121	121	121	121	121	121	121	121	121	121	121	7.8%
Domestic use	1,902	1,946	1,932	1,979	1,993	1,986	1,971	1,956	1,941	1,928	1,939	1,942	1,981	1.8%
Exports	331	343	299	271	249	236	234	241	251	258	231	205	178	-48.1%
Ending stocks	265	212	205	156	119	96	87	86	89	96	104	121	105	-50.6%
Skim powder														
Production	1,442	1,240	1,268	1,210	1,210	1,192	1,189	1,186	1,184	1,180	1,153	1,131	1,097	-11.6%
Imports	58	61	61	61	61	61	61	61	61	61	61	61	61	0.0%
Domestic use	1,189	1,200	1,208	1,202	1,167	1,162	1,150	1,138	1,127	1,115	1,099	1,083	1,063	-11.5%
Exports	290	241	174	121	106	100	103	107	112	117	112	111	104	-57.0%
Ending stocks	402	262	210	157	155	147	145	147	154	162	165	162	154	-41.4%
Whole powder														
Production	875	815	766	752	737	717	696	675	654	641	628	615	577	-29.2%
Imports	20	20	17	17	17	18	18	18	18	18	19	19	19	-4.0%
Domestic use	364	325	334	340	345	349	353	357	361	365	368	372	378	16.1%
Exports	530	509	447	426	407	384	359	335	310	294	278	262	217	-57.3%
Ending stocks	25	25	28	30	32	33	34	35	36	37	38	38	39	53.6%
Consumption														
Fluid milk	80.47	80.38	88.75	88.93	88.70	88.38	87.97	87.58	87.22	86.85	86.52	86.16	85.97	7.0%
Cheese	15.42	15.54	18.21	18.46	18.59	18.70	18.79	18.88	18.98	19.08	19.18	19.27	19.41	24.9%
Butter	3.80	3.87	4.33	4.44	4.46	4.44	4.40	4.36	4.32	4.28	4.30	4.31	4.40	13.7%
Prices														
Milk, 3.7% fat	29	29	28	27	26	26	26	26	26	26	25	25	25	-13.9%
Cheese market	482	490	477	462	457	454	453	452	450	448	446	445	440	-10.3%
Butter market	363	363	324	299	287	283	282	280	279	276	268	262	247	-31.9%
SMP market	204	206	182	177	181	180	180	181	181	182	183	185	187	-9.4%
WMP market	254	254	235	225	219	215	211	208	204	201	199	197	189	-25.3%
Butter intervention	328	305	282	259	246	240	240	240	240	240	234	234	209	-31.5%
SMP intervention	206	195	185	175	175	170	170	170	170	170	170	170	170	-12.8%

A-V-7: WTO Low Scenario Irish Dairy Commodity Supply and Use Projections

Irish dairy supply and utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
	thousand head, end of year													
Dairy cows	1,156	1,157	1,118	1,108	1,095	1,080	1,066	1,053	1,041	1,029	1,018	1,007	997	-13.8%
Production/cow	4,822	4,805	4,862	4,885	4,933	4,978	5,028	5,077	5,132	5,188	5,242	5,297	5,351	11.4%
	million tonnes													
Fluid milk														
Cow's milk Production	5.57	5.56	5.44	5.41	5.40	5.38	5.36	5.34	5.34	5.34	5.34	5.34	5.34	-4.0%
Milk quota	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	0.0%
Other milk production	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Fluid consumption	0.51	0.55	0.59	0.60	0.60	0.61	0.62	0.63	0.64	0.64	0.65	0.66	0.67	22.4%
Manufacturing use	4.87	4.82	4.66	4.64	4.62	4.59	4.57	4.55	4.54	4.53	4.52	4.51	4.50	-6.6%
Feed use, net exports	0.19	0.19	0.19	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.16	0.16	-13.7%
	thousand tonnes													
Cheese														
Production	112	117	123	124	125	125	126	126	127	127	129	130	131	11.5%
Imports	14	16	16	17	19	20	22	23	25	26	27	29	30	88.2%
Domestic use	32	33	35	37	38	40	42	44	46	48	50	52	54	61.4%
Exports	96	100	103	104	104	105	105	105	106	106	106	107	107	7.5%
Ending stocks	27	27	27	27	28	28	28	29	29	29	29	29	30	9.5%
	thousand tonnes													
Butter														
Production	155	144	132	129	129	127	127	126	126	125	125	124	123	-14.1%
Imports	1	1	4	5	5	5	5	5	5	5	5	5	4	314.7%
Domestic use	17	16	17	17	17	18	18	18	19	19	19	19	20	20.2%
Exports	146	140	121	117	116	115	114	112	111	110	109	107	110	-21.7%
Ending stocks	93	81	79	79	78	78	79	79	81	82	84	87	85	5.5%
	thousand tonnes													
Skim powder														
Production	88	84	64	55	52	50	49	48	47	47	46	45	45	-46.6%
Imports	3	4	4	4	4	4	5	5	5	5	5	6	6	59.2%
Domestic use	11	11	12	12	12	12	12	12	12	12	12	12	12	7.1%
Exports	97	85	58	48	46	42	42	41	40	40	39	39	39	-54.2%
Ending stocks	78	69	67	66	66	66	66	66	66	66	66	66	65	-5.6%
	thousand tonnes													
Whole powder														
Production	29	29	29	29	29	29	28	28	28	28	28	28	27	-6.1%
Imports	30	30	30	30	30	30	29	29	29	29	29	29	28	-5.9%
Domestic use	1	1	1	1	1	1	1	1	1	1	1	1	1	0.0%
Exports	1	1	1	1	1	1	1	1	1	1	1	1	1	0.0%
Ending stocks	48	47	51	54	54	55	55	55	55	55	55	55	55	17.7%
	kilograms per capita													
Consumption														
Fluid milk	130.47	137.51	146.03	146.31	146.31	146.34	146.36	146.40	146.71	147.01	147.34	147.66	148.02	7.6%
Cheese	8.14	8.37	8.70	9.02	9.32	9.62	9.92	10.23	10.55	10.87	11.20	11.53	11.87	41.9%
Butter	4.19	4.12	4.17	4.21	4.23	4.25	4.26	4.27	4.29	4.30	4.32	4.33	4.36	
	euro/100 kg													
Milk price, 3.7% fat														
	25.4	25.0	24.4	22.3	22.1	21.9	22.0	22.0	21.9	21.9	21.8	21.7	21.4	-14.1%
	thousand tonnes													
Casein														
Production	48	47	51	54	54	55	55	55	55	55	55	55	55	17.7%
Imports	2	2	2	2	2	2	2	2	2	2	2	2	2	0.0%
Exports	43	42	46	48	49	49	49	49	49	49	49	49	49	17.2%
Domestic Uses & Stock change	5	5	5	6	6	6	6	6	6	6	6	6	6	21.3%

A-V-8: WTO Low Scenario Irish Input Use and Expenditure Projections

Irish Input Utilisation

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2004 v 2015
Feed														
Price								euro per tonne						
Dairy	210.25	218.00	210.71	209.06	209.05	209.94	210.69	210.82	210.64	210.20	209.86	209.54	208.96	-4.1%
Beef	213.27	221.12	210.31	208.57	208.57	209.49	210.29	210.42	210.23	209.77	209.42	209.08	208.47	-5.7%
Per head								kg/head						
Dairy	784	844	826	780	761	754	753	753	714	715	715	716	716	-15.3%
Beef	215	181	190	192	192	176	162	152	145	140	136	132	129	-28.7%
Total								000 tonnes						
Dairy	887	977	924	865	833	814	803	793	743	736	729	721	713	-27.0%
Beef	1,227	1,043	1,098	1,100	1,035	920	829	766	723	691	664	640	617	-40.9%
All animals & poultry	3,286	3,120	3,137	3,085	2,985	2,844	2,738	2,669	2,580	2,542	2,509	2,479	2,449	-21.5%
Fertilizer														
Nitrogen Application								kg/ha						
Per Ha of Grassland Area	98	92	90	86	84	82	82	82	82	82	82	83	82	-10.3%
Per Ha of Crop Area	143	135	142	145	145	143	142	143	142	142	142	142	142	5.3%
Total Fertiliser Application	543	516	494	462	446	436	431	428	426	424	422	420	416	-19.3%
Intermediate Consumption of Inputs of which:								million Euro						
feedingsuffs	923	904	830	796	765	730	706	689	667	656	647	639	630	-30.3%
fertilisers	371	358	350	334	324	318	315	313	312	312	312	313	313	-12.6%
energy and lubricants	227	245	273	278	277	271	268	268	269	272	274	277	280	14.1%
forage work	631	677	645	649	653	658	663	667	672	675	679	683	687	1.5%
contract work	248	263	266	271	276	283	289	296	302	307	313	319	325	23.4%