Analysis of the Impact of the CAP Health Check on Agriculture in Northern Ireland

FAPRI-UK Project

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Executive Summary

This paper presents the results of analyses of the proposed Common Agricultural Policy (CAP) Health Check reforms on agriculture in Northern Ireland (NI) based on the FAPRI-UK modelling system. The Health Check is a review of the 2003 CAP reforms and entails adjustments for the 2009 to 2012 period. Draft legislative proposals for the Health Check were released by the European Commission in May. This paper considers the main elements of these proposals using a partial equilibrium framework.

The FAPRI-UK model captures the dynamic interrelationships among the variables affecting supply and demand in the main agricultural sectors of England, Wales, Scotland and Northern Ireland. The models are run in conjunction with the FAPRI European Union model, run by the University of Missouri, which is in turn linked to the FAPRI Global modelling system. The modelling system produces Baseline projections, over a ten year period, of key variables in the beef, sheep, dairy and arable sectors for each country in the UK. It is assumed that current policies remain in place and specific macroeconomic assumptions hold. The Baseline does not constitute a forecast, but provides a benchmark against which projections of policy scenarios can be compared and interpreted.

Two main issues are examined. Firstly, a Health Check scenario comprising:

- full decoupling of cereal direct payments, the Beef Special Premium and the Slaughter Premium;
- implementation of progressive modulation across the EU;
- phased increases of milk quotas between 2009 to 2013, followed by abolition in 2015; and
- export subsidies are eliminated for all commodities in 2013.

Secondly, a separate scenario that investigates the impact of the abolition of set-aside is considered.

Given the rapid increases in world commodity prices over the past year and the associated volatility of these prices, the two scenarios are subjected to sensitivity analyses whereby the modelling systems are shocked with (i) lower world prices (average 2000 to 2005) and (ii) higher world dairy prices (plus 50 per cent).

The key findings are summarised below:

- Overall, the projected impact of the Health Check reforms on agriculture in NI is limited.

- The further decoupling of direct payments in EU Member States has only a marginal impact on EU production and prices in the arable and livestock sectors. The knock-on impact on agriculture in NI is therefore negligible. Under current CAP policy most of the arable area payment has been included in the Single Farm Payment and thus extending decoupling further has little impact, while the retention of the coupled Suckler Cow Premium and Ewe Annual Premium within the proposals help to maintain animal numbers.

- Progressive compulsory modulation has little impact in Northern Ireland since it is assumed that this replaces existing voluntary modulation.

- The proposed phased expansion in milk quotas prior to abolition in 2015 exerts a negative impact on milk production in NI primarily due to a marked expansion in

milk production in the Republic of Ireland (RoI) that reduces the volume of milk exported from NI to RoI.

- The sensitivity analyses showed that with the exception of the dairy sector, the impact of the CAP Health Check proposals was negligible, even if world prices were significantly lower or dairy world prices were higher. However, market receipts in the dairy sector are more severely affected by the policy changes under both sensitivity analyses.

- The removal of set-aside has a depressing impact on projected arable commodity prices and consequently market receipts in NI.

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1. Introduction

As part of the 2003 Common Agricultural Policy (CAP) reform European Union (EU) member states agreed to a review of the reforms to assess their effectiveness and introduce modifications where necessary for the period 2009 to 2012. Initial proposals for the so called Health Check were released by the European Commission in November 2007 and legislative proposals were circulated in May 2008. The Commission argues that the proposals are not designed to fundamentally change the nature of the CAP but should be viewed as fine tuning to improve its effectiveness in the context of a larger European Union and shifting international developments (European Commission, 2007).

The avowed objectives of the Health Check proposals are to simplify the Single Payment Scheme (SPS), modernise market management tools and address new challenges presented by climate change, water management and biodiversity decline. The Commission proposes simplifying the SPS through modifying the rules of cross compliance including better targeting of standards and additional criteria for keeping land in good agricultural and environmental condition; broadening the scope of the national envelope to allow the possibility of using it for restructuring and development programmes and risk management measures; allowing Member States who have adopted the historic model for the Single Farm Payment (SFP) to move towards a flat rate payment, if they wish; and decouple direct payments to a larger extent but retain coupled support where regional/environmental costs are excessive. The proposals call for full decoupling of arable payments, the Beef Special Premium and the Slaughter Premium. However, member states are allowed to retain the Suckler Cow Premium and the Ewe Annual Premium as they currently exist "to sustain economic activity in regions where other economic alternatives do not exist".

The proposed revisions to the market management tools are designed to reduce the role of supply control mechanisms to allow farmers to respond to market signals. The Agricultural Commissioner, Mariann Fischer Boel, argues that it is important to provide farmers the freedom to produce what the market wants not only to let them maximise their production potential but also respond to booming agricultural global demand and high commodity prices (Fischer Boel, 2008). Specifically, the proposals call for the permanent abolition of compulsory set-aide and the gradual phase out of milk quotas through raising quotas by 1 per cent annually from 2009 to 2013 prior to their elimination in 2015. In recognition of the environmental benefits of set-aside it is proposed that cross compliance rules concerning, for example, buffer strips along watercourses are strengthened. In addition, in the arable sector it is proposed that intervention is limited to only one cereal, bread wheat, and intervention quantities for feed grains are restricted to zero so that they only come into operation under special circumstances.

The Commission argues that the most effective means of addressing new challenges presented by climate change, water management and biodiversity decline is through Rural Development policy. In order to generate extra monies for rural development it is proposed that the rate of compulsory modulation is increased and that higher rates of modulation are applied to direct payments above €100,000. The proposals retain the €5000 franchise. This system of applying higher rates to producers receiving higher direct payments is known as progressive modulation. While the modulation receipts generated by these additional rates of compulsory modulation would remain

within the member state, it is proposed that the existing system of re-distributing monies between member states for the current 5 per cent compulsory modulation remain in place[1].

This report examines the impact of the proposed policy changes in the CAP Health Check on the key agricultural sectors in Northern Ireland (NI) using the FAPRI-UK project modelling system. The FAPRI-UK modelling system is the product of a collaborative research venture between the Queen's University Belfast, the Northern Ireland Agri-Food and Biosciences Institute (AFBI) and the Food and Agricultural Policy Research Institute (FAPRI), University of Missouri. The models consist of a set of econometric equations of the beef, sheep, dairy, pig, poultry, cereal and oilseed sectors of England, Wales, Scotland and Northern Ireland (NI). The UK models are run in conjunction with the FAPRI European Union model (GOLD) run by the University of Missouri which is in turn linked to the FAPRI Global modelling system.

In this study the FAPRI-UK modelling system is simulated to identify the impact of Health Check Reforms on agriculture in NI and the results are compared against a 2008 Baseline (2008 – 2017). As noted above, the abolition of set-aside is included in the Health Check proposals. However, global market conditions over the past year have already resulted in set-aside being set to zero for the crop year 2007/08. A zero set-aside has been imposed in the Baseline for the whole ten-year projection period as it is projected that prices remain well in excess of the levels that would trigger intervention purchases. Consequently, the impact of set-aside abolition is not explicitly analysed within the Health Check scenario. Instead the Baseline is run with and without set-aside in a separate analysis.

The EU has already declared that, irrespective of a new WTO agreement, EU export subsidies will be eliminated (Agra Europe Weekly, 2007). Export subsides are retained in the Baseline as their elimination has not yet been authorised. As a result, export subsidies are also eliminated in the Health Check scenarios.

World agricultural commodity prices have been very volatile in recent years, particularly in the dairy sector. Since the GOLD model is linked to the Global modelling system it accounts for endogenous changes in global demand and supply. However, shocks to the system can have a dramatic impact on world prices and consequently the robustness of the "Health Check" and "Set-Aside" results are subjected to sensitivity analyses with different world prices imposed.

The paper is organised as follows. The methodology underlying the analyses is described in Section 2. This is followed by an outline of the assumptions underlying the Baseline and a description of the Baseline projections in Section 3. The details of the Health Check and Set-Aside scenarios are described in Section 4. The impacts of the scenarios on the key agriculture sectors in NI are analysed in Section 5. Some conclusions are drawn in Section 6.

[1] Under the current system the money generated by compulsory modulation is re-distributed between Member States after accounting for a minimum of 80 per cent of funds that must return to the Member State from which they were raised.

2. Methodology

The FAPRI-UK modelling system captures the dynamic interrelationships among the variables affecting supply and demand in the main agricultural sectors of England, Wales, Scotland and NI. The model consists of a system of equations covering the dairy, beef, sheep, pigs, poultry, wheat, barley, oats and rapeseed sectors. The UK model is fully incorporated within FAPRI's EU model (GOLD) and consequently solves simultaneously with models for the rest of the EU and a rest of the world model[2]. It thereby yields UK projections which are consistent with equilibrium in the EU and the rest of the world.

The modelling system is simulated under the assumptions that current policies remain in place, specific macroeconomic projections hold and average weather conditions apply. Baseline projections of key variables for each country in the UK are generated for a ten year period. Baseline projections provide a benchmark against which projections derived from policy scenarios can be compared and interpreted. The model incorporates variables representing the major policy instruments associated with the CAP market organisations, which can be changed to run specific scenarios for the purposes of policy analysis.

3. The Baseline

3.1 Baseline Assumptions

The Baseline assumes that policies that were in operation in June 2008 remain in place for the duration of the projection period. Future changes to policy variables that were agreed at that time are included. Specifically, the Baseline incorporates the replacement of coupled direct payments with the decoupled Single Farm Payment (SFP) within the EU-15. The degree of decoupling varies amongst the different member states. In practice most of the arable area aid payment has been incorporated in the SFP, but a significant number of countries opted to keep beef payments coupled. It is assumed that the SFP has a modest production stimulating effect because the security of the decoupled payments may reduce their financial risk levels or facilitate bank loans. Furthermore, farmers are required to keep land in good agricultural condition in line with environmental requirements, which implicitly assumes that at least some production will continue. In the NMS-10 the countries are assumed to change to the SFP in 2009.

Compulsory EU Modulation is applied to all direct payments, including the SFP but excluding the first €5000 paid to each farmer. The so called €5000 franchise is taken into account in computing a flat rate modulation cut equivalent based on computations by DG AGRI (reported in European Commission (2008)). It is assumed that 80 per cent of the compulsory modulation monies raised in each country in the UK are retained in that country. In addition to the compulsory EU modulation, additional voluntary modulation is applied in each country in the UK at different rates.

The Baseline incorporates the 2 per cent milk quota rise for the start of the 2008/09 quota year. It is assumed that the dairy quota system remains in place for the whole of the projection period. However, milk production is modelled in such a way that if movements in prices and or costs result in the elimination of quota rent then production can fall below quota.

[2] The GOLD model is disaggregated into the UK (split into England, Wales, Scotland, and NI), France, Germany, Ireland, Italy, and a "rest of EU-15" category, Poland, Hungary, a "rest of NMS-10" (New Member State) category, Romania and Bulgaria.

The set-aside derogation agreed for 2008 is incorporated in the Baseline, with resulting increases in crop areas. As noted in the introduction, it is assumed that this derogation remains in place for the remainder of the projection period since it is unlikely that the Commission would curtail EU crop production under strong global demand conditions.

A biofuels model for the EU-27 has been added to the modelling framework to provide a means to incorporate EU policy to increase the proportion of biofuels into transport. Within the modelling system biofuel production impacts other sectors, directly through the demand for cereals and oilseeds for biofuel production and indirectly through the impact on the feed market. In the UK assumptions are made about the consumption of cereals and rapeseed for biofuel purposes. Specifically, it is assumed that by the end of the projection period 2 million tonnes of wheat is allocated for ethanol production and 400 thousand tonnes of rapeseed oil is allocated for biodiesal production (which is equivalent to 840 thousand tonnes of rapeseed).

It is assumed that the EU export subsidy limits and import tariffs, agreed under the Uruguay Round Agreements Act (URAA), remain in place. The decision regarding the level of export refunds resides with the European Commission and therefore it is necessary to make some assumptions. In particular, it is assumed that if market prices exceed their intervention levels, the European Commission will not continue to provide export refunds. Consequently, export refunds would be reduced so that the commodity prices fall close to their intervention levels.

The accession of Romania and Bulgaria to the EU has been incorporated within the Baseline. The addition of these countries is particularly important for maize.

The macroeconomic projections used in the 2008 Baseline are those that were provided by Global Insight in January for the Global Baseline. EU-27 growth and inflation as measured by the GDP deflator are projected to fall from recent levels to around 2 percent for the duration of the projection period. Growth for the EU-15 is around 2 percent with higher growth rates for the new member states (NMS-12) of between 3 and 5 percent. Global Insight projects that the euro remains strong against the dollar at around 0.7 Euro/dollar (1.4 dollar/euro). Within the model the euro/US dollar exchange rate is particularly important since world prices are denominated in dollars and the exchange rate therefore affects the competitiveness of EU commodities in world markets. A strong euro compared against the dollar renders EU commodities less competitive on world markets. It is also projected that the UK pound weakens against the euro in 2008 (0.69 UK pound/euro in 2007, 0.78 in 2008) but strengthens slightly in the longer term (0.73 UK pound/euro).

The price of oil is a key component of the transport fuels model which determines the amount of diesel and gasoline used and therefore the amount of biofuels needed to meet mandatory incorporation rates. In these projections the long run oil price projected by Global Insight in January is used again to remain consistent with the January Baseline, but 2008 and 2009 are updated with more recent projections from Global Insight. The highly volatile nature of the oil price is a challenge for the baseline process.

3.2 Baseline Projections

The Baseline projections outlined below are based on a simulation of the models in June 2008. Extensive consultation with industry was undertaken in each of the countries in the UK, Ireland and the US to assess the robustness of projections. This is invaluable in accounting for recent market developments and identifying issues not fully captured by the models, especially regarding "non-market" factors such as capacity constraints, industry restructuring and changes in taste. Provisional Baseline projections were revised in light of feedback from industry.

The world prices that are used in this simulation are based on the FAPRI 2008 US and World Agricultural Outlook (www.fapri.org). However, agricultural commodity markets are particularly volatile at the moment and market developments have made some of the short run prices obsolete. Consequently, world prices in 2008 and 2009 have been adjusted on the basis of both actual spot prices and futures markets as they stood in March. In the long run, it is assumed that world prices converge to those generated by the January Global Outlook. It is however acknowledged that there is considerable uncertainty concerning world price projections. In order to assess whether or not the impact of the Health Check proposals compared with the 2008 Baseline is strongly influenced by current market conditions, the Health Check analyses were also undertaken against the backdrop of (i) imposed lower world prices (average 2000 to 2005) and (ii) imposed higher world dairy prices.

World Prices

In general, world prices are projected to grow significantly over the projection period due to the combined impact of increased demand from biofuels and sustained growth in Asia. The largest price increases are for vegetable oils, all of which are projected to more than double due to increases in biodiesel production (both in the EU and around the world) and further increases in imports of vegetable oil, primarily by China. Higher costs for feed, including cereal and oilseed meal costs, push up meat and dairy prices. Demand for dairy products has been strong and prices of dairy commodities remain above historical levels for the projection period. More discussion of world price developments is included below where appropriate.

EU, UK and NI Projections

Biofuels

The EUs Renewable Energy Directive calls for 10 per cent of transport energy use to come from renewable energy sources by 2010. However, it is assumed that it is unlikely that the EU will meet its targets from first generation fuels, which are the only biofuels incorporated in the model. Specifically, in these projections it is assumed that the consumed level of biofuels is about 5.7 per cent of total transport fuel usage. This total comprises of mostly domestically produced biofuels, with some imports. However, increasing amounts of feedstock have to be imported despite rising area of rapeseed within the EU.

Cereals and Oilseeds

In 2007 the EU cereals sector was impacted dramatically by poor weather. The shortage of grain, plus rapidly increasing world grain prices resulted in the EU Commission reducing set-aside to zero. The combination of higher prices, better

weather and the end of set-aside has lead to an expansion in the EU cereal area in 2008. It is projected that EU cereal prices fall from current high levels, while EU rapeseed prices maintain their high levels.

In NI projected total crop area (wheat, barley, oats and rapeseed) increases by 37 per cent in 2008 relative to 2007 due to the combination of the setting of set-aside to zero and the conversion of grass to crop production as a result of the high crop prices. The increase is largest for barley, followed by wheat and oats. It is projected that total crop area declines slightly during the remainder of the projection period but still remains high compared to pre-2008 levels.

Livestock

While cereal prices have benefited arable farmers, they have presented a challenge to livestock producers. Despite this, the 2007 December census showed significant increases in both beef cows and total cattle numbers in some EU countries. Beef prices have increased so far in 2008 partly as a result of the embargo on Brazilian beef, but an increase in beef cow numbers, coupled with the assumption that this embargo will be gradually lifted results in a fall in beef prices. In the longer run decreases in EU beef production as a result of a fall in dairy cow numbers means that EU beef prices rise again in the latter part of the projection period.

In the UK the rise in beef prices in 2008 helps to offset the high input costs and stabilise beef cow numbers. UK beef cow numbers fall slightly in the medium term but rise slightly in the latter part of the projection period in response to the price rise. Similarly in NI beef cow numbers are projected to fall slightly in the next few years but show a slight recovery in the following years. By the end of the projection period, NI beef cow numbers are equal to those in 2007. However, it is projected that NI beef production declines over the duration of the projection period since there is a fall in projected dairy cow numbers.

The 2007 December census revealed large reduction in sow numbers across the EU, especially in the new member states. The reductions reflect the problems caused by the high feed prices. EU Sow numbers are projected to fall sharply to 155 million in December 2009. This triggers increases in prices, but despite lower cereal prices, sow numbers never recover to their 2007 levels for the duration of the projection period. In NI it is projected that sow numbers will decline by 5 per cent in 2008 due to the high input costs. However, sow numbers remain fairly stable for the remainder of the projection period as input costs ease slightly.

Dairy

Dairy markets exhibited extraordinary behaviour in 2007, with soaring prices, followed by in some cases sharp drops. Following these market developments differentials between North European and Oceania prices have emerged that have not existed historically. It is difficult to isolate the reasons for the markets' movements but strong demand for dairy products in Asia, weather problems in Australia and the EU setting export refunds to zero are undoubtedly important factors.

Within the EU, butter and SMP prices have returned rapidly to their 2006 levels. World dairy prices are projected to fall from their 2007 levels over the projection period and determine internal EU prices. In the absence of export refunds for the powders, their export levels fall. However, cheese remains competitive. Butter

prices follow support prices down and it is assumed that the Commission re-introduces subsidies in order to prevent intervention purchases exceeding the limits.

The projected average EU producer milk price falls from 2007 levels as commodity prices fall and remain at about 28 euros per 100 kgs for the projection period. The projected price exceeds the level that would have prevailed if product prices had followed the reduction in support price. This is because dairy prices in the EU for all the products besides butter are supported by the world price.

It is projected that producer milk prices throughout the UK decline in 2009/10 but stabilise thereafter. Projected paths differ slightly among UK countries due to differences in the dairy product mix in each region. The most marked difference is in NI where the share of raw milk utilised in liquid milk is relatively small and the NI producer milk price is projected to fluctuate to a greater extent in line with dairy commodity prices. Projected NI milk production increases by end of projection period (NI milk production is 2 per cent higher in 2017 compared to 2007). However, UK milk production does not fill the quota throughout the projection period.

4. Scenario Definitions

Each of the scenarios are outlined below:

Health Check Scenarios

Scenario 1: Health Check Proposals

Under this scenario full decoupling is implemented in the cereal sector from 2010, while the Beef Special Premium and Slaughter Premium are reduced by 50% in 2010 and 2011 and fully decoupled from 2012 onwards. It is assumed that Member States which used the options to retain the Suckler Cow Premium and/or Ewe Annual Premium (up to 50% of value) retain these coupled. Similarly, it is assumed that Member States that implemented a historic SFP model retain this system since the proposals do not compel countries to change to a flat rate system.

The impact of progressive modulation is accounted for by computing flat rate modulation cut equivalents using figures from a Commission working document on the impact of progressive modulation on direct payments (European Commission, 2008). The additional compulsory progressive modulation results in higher rates of total modulation in most EU Member States. The impact of progressive modulation differs in the UK due to the existence of voluntary modulation. In each of the countries in the UK it is assumed that the overall monies raised via compulsory and voluntary modulation remains the same, with increases in compulsory modulation substituting existing voluntary modulation. The total flat rate modulation cut equivalent for NI therefore remains the same in the Baseline and the Health Check scenario.

The five annual increases in milk quota of 1 per cent are implemented from 2009 to 2013, followed by abolition in 2015. Note that the 2 per cent increase in milk quotas in 2008 is incorporated in the Baseline.

Export subsidies are eliminated for all commodities in 2013. It is assumed that intervention prices are lowered, where necessary, to allow the markets to clear, thus avoiding the build up of stocks.

Note that no attempt has been made to model the impact of broadening the scope of the national envelope since it is not clear how this might be implemented in different Member States. Similarly, the proposed strengthening of cross compliance rules has not been included within the modelling framework as the proposals are vague and it is not clear to what extent they will impact production.

Scenario 1 is compared against the 2008 Baseline.

Scenarios 2 and 3 - Lower World Prices Sensitivity

Scenario 2: Baseline with Lower World Prices
Under this scenario the Baseline world prices are lowered. Rather than systematically reduce world prices by the same percentage, to provide a degree of realism, world prices are lowered so that they fall to the average 2000 to 2005 level for each commodity.

Scenario 3: Health Check Proposals with Lower World Prices
The Health Check proposals are implemented in the same manner as Scenario 1 but with lower world prices.

To assess the impact of the Health Check under lower world prices, Scenario 3 is compared with Scenario 2.

Scenarios 4 and 5 – Higher World Dairy Prices Sensitivity

Scenario 4: Baseline with Higher World Dairy Prices
In this scenario the Baseline world dairy prices are increased by 50 per cent.

Scenario 5: Health Check Proposals with Higher World Dairy Prices
The Health Check proposals are implemented in the same manner as Scenario 1 but with higher world dairy prices.

To assess the impact of the Health Check under higher world dairy prices, Scenario 5 is compared with Scenario 4.

Set-Aside Scenario

Scenario 6: Set-Aside in Place
Under this scenario set-aside is in place at 10% in 2009/10 and is retained for the remainder of the projection period. The impact of set-aside is determined by comparing the Baseline, where there is no set-aside, and this scenario – i.e. a with and without set-aside comparison.

Scenario 6 is compared against the 2008 Baseline.

5. Results

5.1 Health Check Scenarios

The results of the Health Check Scenarios are discussed below. Results of the core analysis (Scenario 1 compared to the Baseline) are initially outlined and additional information is provided on the sensitivity analyses where discernable differences are apparent. Summary tables for the EU-27 (Table A1.1)) and NI (Table A1.2 to A1.5) are provided in Appendix 1.

5.1.1. Crop sector

Core Analysis (Scenario 1 compared to the Baseline)

The full decoupling of crop payments, the streamlining of intervention and the elimination of export subsidies have a negligible impact on production and prices throughout the EU, including NI. Within the Baseline the Arable Aid Payment is already included in the SFP in most EU Member States. Even in those Member States in which this is not the case the Arable Aid Payment is treated as largely decoupled in the model (see Binfield *et al.* (2005)) and thus moving these payments into the SFP has little impact. Limiting intervention to zero has no impact since projected crop prices within the 2008 Baseline exceed intervention prices by a considerable margin. Furthermore, export subsidies for crop commodities are not required in the Baseline and hence the elimination of this form of support has no impact.

Imposed Lower World Prices Sensitivity (Scenario 3 compared to Scenario 2)

Imposing lower world prices under Scenario 2 results in a decline in crop prices throughout the EU. By the end of the projection period, barley, soft wheat and rapeseed prices in NI are 20 to 50 per cent lower under Scenario 2 compared to the 2008 Baseline. As in the core analysis, implementing the proposed Health Check reforms with lower world prices under Scenario 3 has little impact on prices and production. Although crop prices are lower under this sensitivity scenario, the setting of intervention to zero for most crop commodities is still irrelevant because crop prices are still sufficiently high to avoid triggering this form of support.

Imposed Higher World Dairy Prices Sensitivity (Scenario 5 compared to Scenario 4)

Projected EU crop prices under the “Higher world dairy prices” scenario (Scenario 4) are approximately the same as the Baseline. The implementation of the proposed Health Check reforms with higher dairy prices (Scenario 5) exerts a slight upward impact on EU crop prices. In contrast, in the core analysis crop prices were slightly lower. The slight increase in crop prices in this sensitivity analysis reflects the greater demand for crops for feed purposes due to an increase in the number of dairy cows in the EU. Crop prices are also slightly higher in NI under Scenario 5 compared to Scenario 4. However, there is no discernable impact on production.

5.1.2. Dairy sector

Core Analysis (Scenario 1 compared to the 2008 Baseline)

EU-27 milk production is unchanged under the Health Check scenario compared to the 2008 Baseline. The abolition of milk quotas under the Health Check reforms does not lead to an overall expansion in EU-27 milk production since the 2008 Baseline already includes the 2 per cent increase in milk quota agreed for the 08/09 marketing year. In the 2008 Baseline production does not rise by the whole 2 per cent since dairy prices are projected to fall from their 2007 levels and dairy producers face high input costs in the form of high cereal and energy prices. Nonetheless, at the individual country level there is a certain amount of redistribution of milk production across the EU under the Health Check scenario. In particular, there is a significant expansion in milk production in the Republic of Ireland (RoI) and Poland (12 per cent and 7 per cent respectively), while there are moderate falls elsewhere in Europe.

EU and UK butter prices decline under the scenario relative to the 2008 Baseline. The price decline is particularly pronounced for butter since it is projected that export subsides are still important for this commodity in the 2008 Baseline. EU and UK SMP prices increase slightly under this scenario. As a by-product of butter, SMP production declines with butter production, thereby exerting an upward impact on SMP prices. Cheese and WMP prices are largely determined by world markets and hence the changes in these prices are minimal.

The change in UK commodity prices results in a very slight decline in milk producer prices throughout the UK. The price decline is slightly more marked in NI (see Figure 1) compared to elsewhere in the UK due to the greater amount of milk used in the lower value processing sector and the commodity mix. As shown in Figure 2, the proposed Health Check reforms lead to a significant decline in Northern Ireland milk production (NI milk production is 5 per cent lower under the Health Check scenario compared to the 2008 Baseline at the end of the projection period). Milk production in NI is affected by a more pronounced decline in price and a marked expansion in milk production in RoI that reduces the volume of milk exported from NI to RoI.

Imposed Lower World Prices Sensitivity (Scenario 3 compared to Scenario 2)

Under Scenario 2 (Baseline with imposed lower world prices) world dairy commodity prices are 40 to 50 per cent lower compared to the 2008 Baseline. However, the presence of import tariffs means that EU commodity prices are only slightly lower under Scenario 2 compared to the Baseline. As a result, the divergence between EU and world prices is much greater under this scenario compared to the 2008 Baseline. Consequently export subsidies build up to a greater extent. The limited decline in dairy commodity prices means that milk producer prices throughout the EU are only marginally lower under this scenario compared to the Baseline. In NI the milk producer price is 3 per cent lower under Scenario 2 compared to the Baseline at the end of the projection period.

Figure 1: Impact of Health Check Scenarios on NI Milk Producer Price

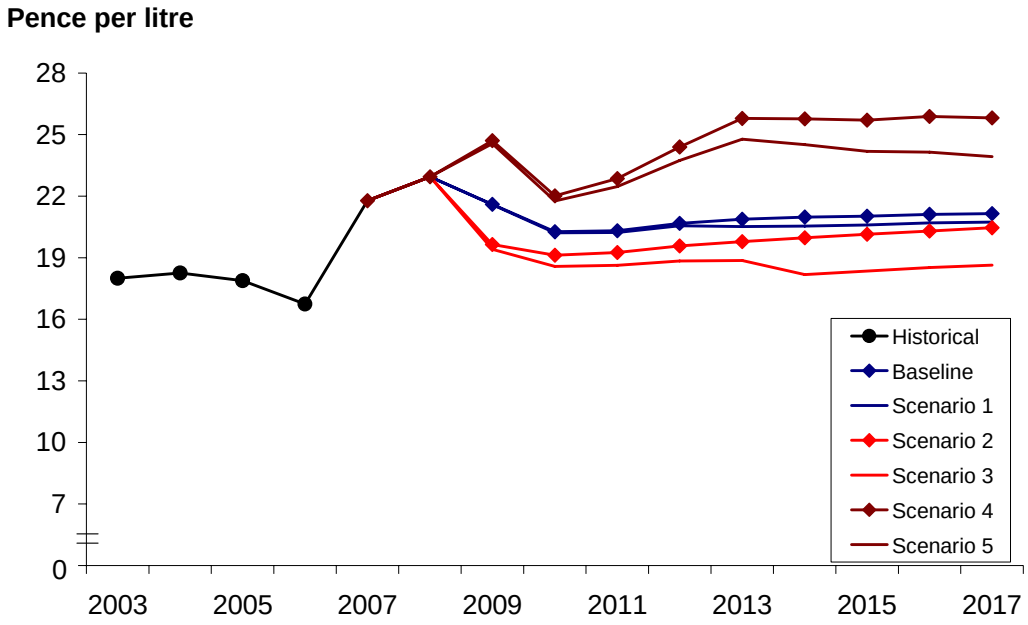
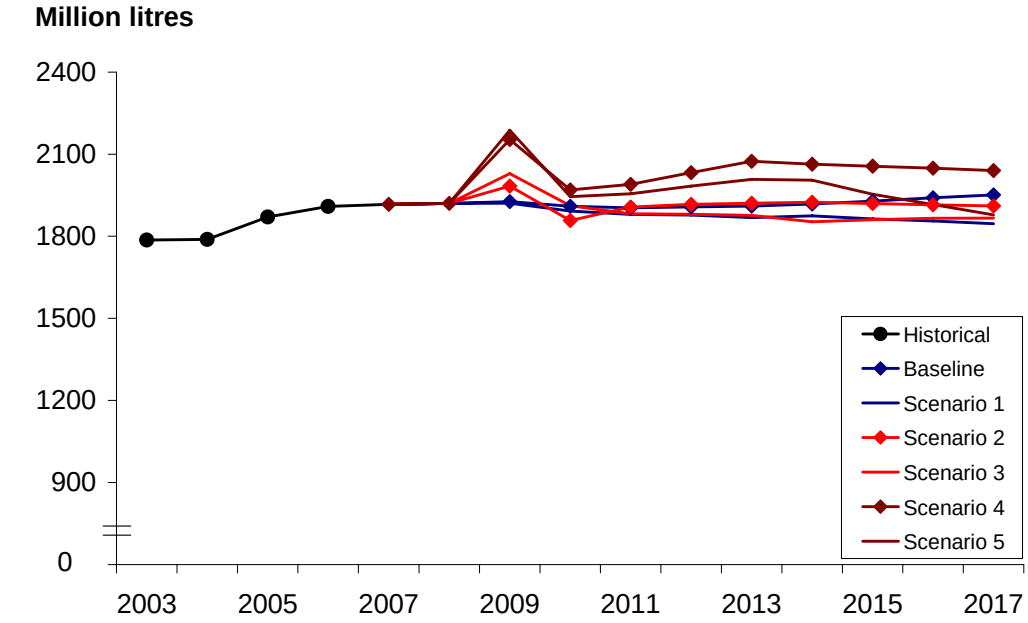


Figure 2: Impact of Health Check Scenarios on NI Milk Production



As noted in the previous section, EU crop prices are significantly lower under Scenario 2 compared to the Baseline and consequently, dairy input costs are generally lower. The marked fall in input costs, coupled with the limited price fall effectively exerts an upward impact on the relative milk price. As a result, the latent production potential is greater. In contrast to the 2008 Baseline, milk production in the UK fills the milk quota.

Under Scenario 3 (Health Check Proposals with Lower World Prices) the elimination of export subsidies leads to substantial falls in dairy commodity prices throughout the EU. The price fall is particularly marked for butter (the EU butter price is 35 per cent lower under Scenario 3 compared to Scenario 2 at the end of the projection period), but, unlike the core analysis, Cheese and WMP prices fall significantly as well.

In contrast to the core analysis, there is a slight expansion in EU-27 milk production. Since the latent production potential is not eroded under Scenario 2, there is a small increase in EU milk production following the phased increase and ultimate abolition of milk quotas (EU milk production is 1 per cent higher under Scenario 3 compared to Scenario 2).

In NI, the projected decline in dairy commodity prices leads to a more pronounced fall in the milk producer prices than in the core analysis (see Figure 1). By the end of the projection period, the projected NI milk producer price is 9 per cent lower under Scenario 3 compared to Scenario 2. Despite the reduction in milk producer prices, there is a slight increase in UK milk production due to the existence of latent production potential. However, milk production in NI decreases slightly (2 per cent lower) due to the more marked decline in the NI producer milk price compared to the other UK countries.

Imposed Higher World Dairy Prices Sensitivity (Scenario 5 compared to Scenario 4)

Under Scenario 4 (Baseline with imposed Higher World Dairy Prices) world dairy commodity prices are increased by 50 per cent. The extent to which the rise in world prices is transmitted to EU prices depends on the divergence between EU and world prices in the 2008 Baseline. The powder prices increase by the most, followed by butter and cheese. The higher world prices means export subsides are not required in the latter part of the projection period under Scenario 4.

The higher dairy commodity prices exert an upward impact on milk producer prices throughout the EU, including the UK. One consequence of the higher milk producer prices is that the UK milk quota is filled under this scenario. In NI the milk producer price is 22 per cent higher at the end of the projection period under Scenario 4 compared to the 2008 Baseline.

Since export subsidies are not required under the “Baseline with Higher World Dairy Prices” (Scenario 4) the butter price does not fall to the same extent following the implementation of the policy changes compared to the core analysis. The negative price effects in the dairy sector are due to an expansion in EU-27 milk production. EU milk production is 5 per cent higher under Scenario 5 compared to Scenario 4. EU milk production expands to a greater extent than in the core analysis since quota rents are generally larger due to the higher absolute dairy commodity prices.

In the UK, the decline in dairy commodity prices under Scenario 5 relative to Scenario 4 exerts a downward impact on milk producer prices. The commodity mix means that the price decline is most pronounced in NI (7 per cent lower under Scenario 5 relative to Scenario 4). The fall in milk producer prices leads to a slight

decline in milk production in the UK (1 per cent lower). This is primarily due to a significant decline in milk production in NI (8 per cent lower under Scenario 5 relative to Scenario 4).

5.1.3. Beef sector

Core Analysis (Scenario 1 compared to the 2008 Baseline)

Decoupling of the Beef Special Premium and the Slaughter Premium and additional modulation have a minor negative impact on EU-27 beef cow numbers, and consequently beef production, since the retention of a coupled Suckler Cow Premium continues to play an important role in maintaining cattle numbers. The projected EU beef price under the Health Check scenario is not significantly different from the 2008 Baseline at the end of the projection period. The impact of the elimination of export subsidies on the beef price is minimal since it is projected that these fall to very low levels in the 2008 Baseline.

The 'Health Check' reforms do not significantly influence beef prices in NI (see Figure 3). Consequently, projected NI beef cow numbers and beef production under the 'Health Check' scenario are unchanged from the Baseline (see Figure 4).

Figure 3: Impact of Health Check Scenarios on Average NI Price for Finished Beef Animals

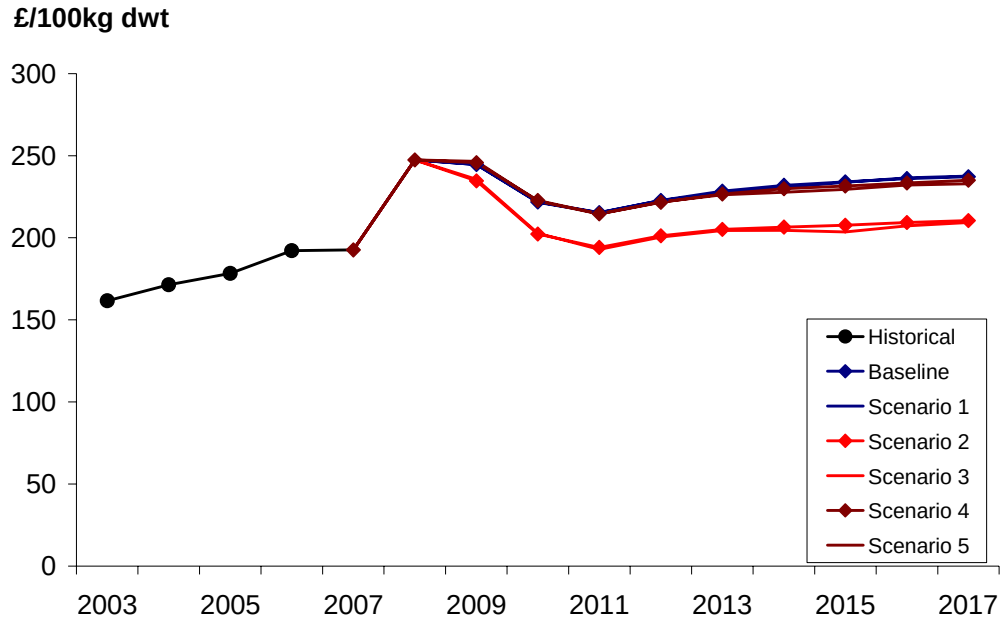
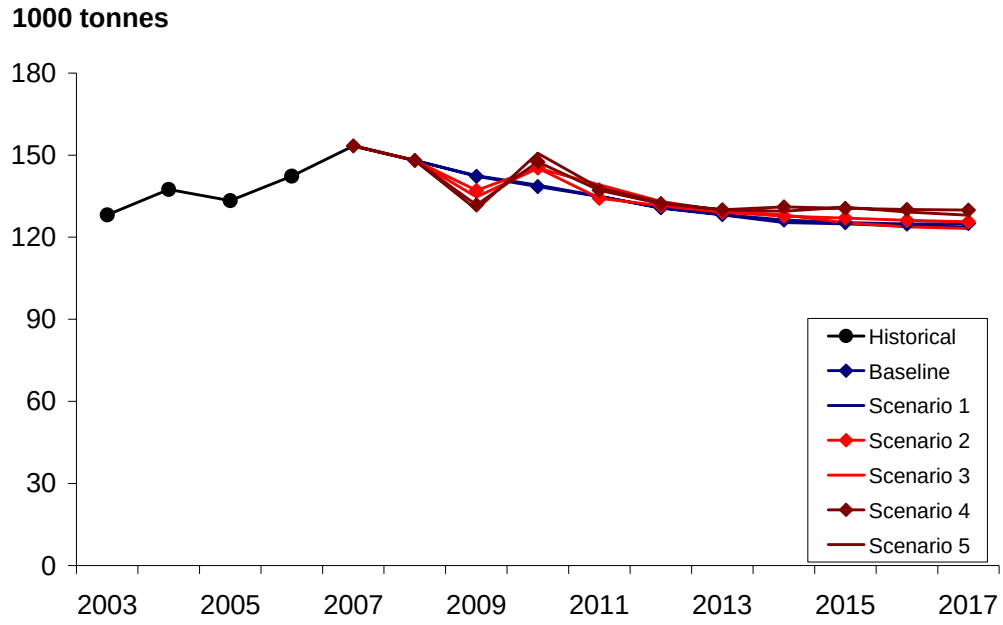


Figure 4: Impact of Health Check Scenarios on NI Beef Production



Imposed Lower World Prices Sensitivity (Scenario 3 compared to Scenario 2)

Under the Baseline with lower world prices (Scenario 2) the average NI price for finished beef animals is 11 per cent lower compared to the Baseline (see Figure 3). As in the core analysis, implementing the proposed Health Check reforms with lower world prices (Scenario 3) has a minimal impact on EU and NI beef production.

Imposed Higher World Dairy Prices Sensitivity (Scenario 5 compared to Scenario 4)

Under the Baseline with higher world dairy prices (Scenario 4) world and EU beef prices are approximately equivalent to Baseline projections. Similar to the core analysis, the impact of decoupling and modulation on the beef sector in the EU and NI is limited.

5.1.4. Sheep Sector

Core Analysis (Scenario 1 compared to the 2008 Baseline)

The retention of a coupled Ewe Premium means that the proposed Health Check reforms do not significantly impact on EU sheepmeat production and prices. Similarly, in NI sheepmeat production and prices are unchanged under Scenario 1 compared to the 2008 Baseline.

Under both sets of sensitivity analyses (Imposed Lower World Prices and Imposed Higher Dairy Prices) implementing the proposed Health Check reforms has no impact on the sheep sector.

5.1.5. Pig and poultry sectors

Core Analysis (Scenario 1 compared to the Baseline)

The elimination of export refunds has a slight downward impact on pigmeat and poultry prices across the EU. Under Scenario 1 NI pigmeat and poultry prices are respectively 1 per cent and 3 per cent lower compared to the 2008 Baseline at the end of the projection period. The impact on production is minimal.

5.1.5. NI Market Receipts and Decoupled Payments Projections

Within the core analysis, implementation of the proposed Health Check reforms have a minor negative impact on crop market receipts due to the projected price declines. Similarly, the impact of the Health Check reforms on market receipts is small in the livestock sectors, with the poultry sector experiencing the largest decline in market receipts (poultry market receipts are 4 per cent lower under Scenario 1 compared to the Baseline). The projected declines in the producer milk price and milk production lead to lower market receipts in the NI dairy sector (dairy market receipts are 7 per cent lower under Scenario 1 compared to the Baseline). Overall, total market receipts in NI are 4 per cent lower following the implementation of the Health Check reforms. This is partially offset by a small decrease in costs.

The impact of the Health Check reforms on market receipts and costs under both sensitivity analyses are broadly similar to the core analysis, apart from the dairy sector. NI dairy sector market receipts decline to a greater extent under both sensitivity analyses since the producer milk price declines to a greater extent.

5.2 Set-Aside Scenario

The results of the impact of the abolition of set-aside are outlined below. While sensitivity analyses were undertaken with lower world prices and higher world dairy prices these had minimal impact on the outcome resulting from the abolition of set-aside and hence are not presented in this report. Summary tables for the EU-27 (Table A2.1) and NI (Tables A2.2 to A2.5) are provided in Appendix 2.

The removal of set-aside results in EU-27 production of wheat, barley and rapeseed increasing by 3 to 4 per cent. The higher levels of production exert a downward impact on crop prices throughout the EU. The price impact is more marked for wheat and barley compared to rapeseed.

The lower crop prices reduce the input costs and the EU commodity prices for the livestock sectors. The price impact is more pronounced for pigmeat and poultry, compared to beef, sheepmeat and dairy, since these industries have a higher proportion of grain in their diets.

The price impacts at the EU level exert a downward impact on UK prices. By the end of the projection period, NI wheat, barley and rapeseed prices are respectively 6, 7 and 3 per cent lower following the removal of set-aside (for example see Figure 5 for projected NI wheat prices).

It is projected that there is an expansion in wheat area and production (Figure 6) in NI following the abolition of set-aside (10 per cent increase). Projected rapeseed production also expands (6 per cent higher). However, projected barley area and production show a slight decrease (2 per cent lower) since the decline in price exerts a downward impact.

Changes in relative prices due to lower input costs and commodity prices exert a slight upward impact on NI pig production. Beef, sheep, poultry and milk production remains unchanged. Projected NI milk production is slightly lower due to a fall in the milk price.

The lower prices following the removal of set-aside results in lower crop market receipts (total crop market receipts are 6 per cent lower following the removal of set-aside). Market receipts are mostly unaffected in the other sectors, apart from poultry and dairy. In the poultry sector, market receipts are 4 per cent lower following the removal of set-aside at the end of the projection period. Dairy market receipts are also slightly lower due to the projected falls in price and production.

Figure 5: Impact of Abolition of Set-Aside on NI Wheat Price

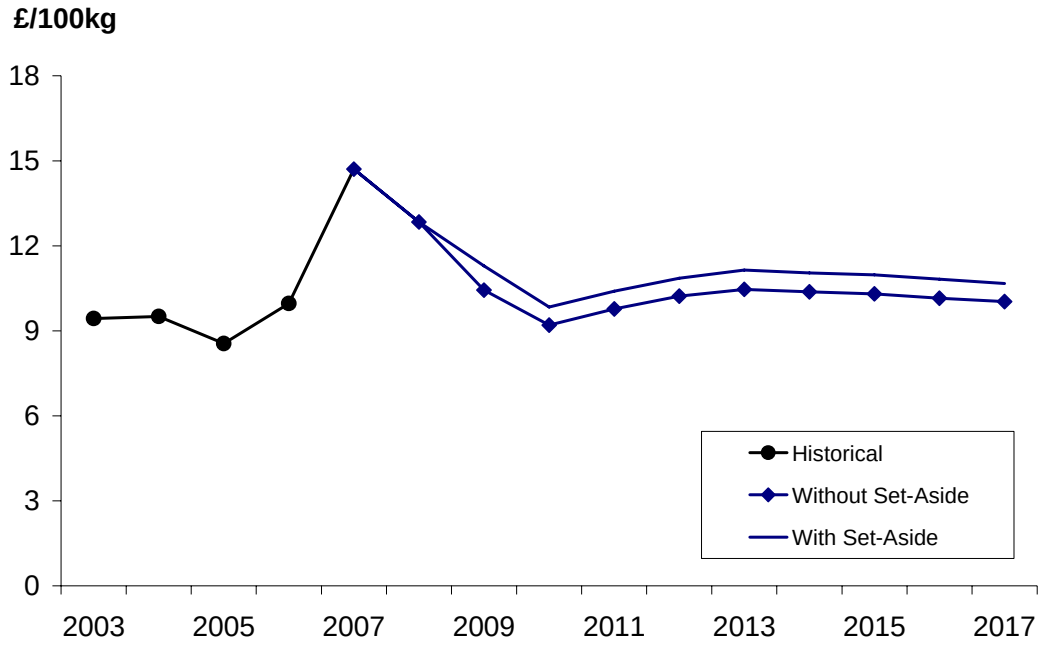
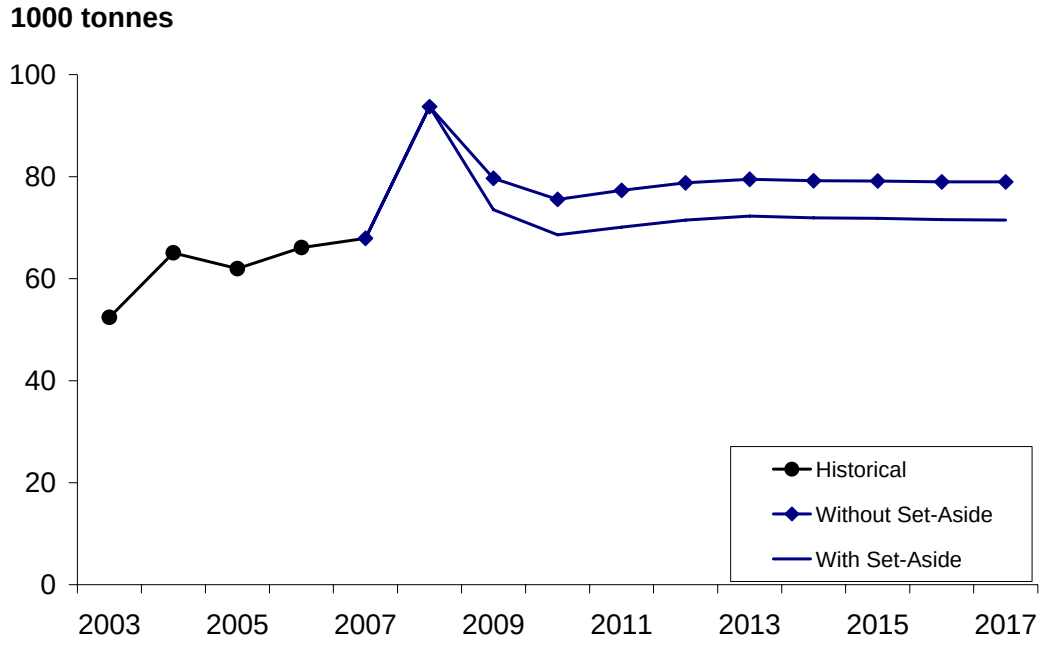


Figure 6: Impact of Abolition of Set-Aside on NI Wheat Production



6. Conclusions

- The model simulations indicate that overall the proposed impact of the Health Check reforms on NI agriculture is moderate.

- The further decoupling of direct payments in EU Member States has only a marginal impact on EU production and prices in the arable and livestock sectors. The knock-on impact on agriculture in NI is therefore negligible. Under current CAP policy most of the arable area payment has been included in the SFP and thus extending decoupling further has little impact, while the retention of the coupled Suckler Cow Premium and Ewe Annual Premium within the proposals help to maintain animal numbers.

- Progressive compulsory modulation has little impact in NI since it is assumed that this replaces existing voluntary modulation.

- The proposed phased expansion in milk quotas prior to abolition in 2015 exerts a negative impact on milk production in NI primarily due to a marked expansion in milk production in the Republic of Ireland (RoI) that reduces the volume of milk exported from NI to RoI.

- The sensitivity analyses showed that with the exception of the dairy sector, the impact of the CAP Health Check proposals was negligible, even if world prices were significantly lower or dairy world prices were higher. However, market receipts in the dairy sector are more severely affected by the policy changes under both sensitivity analyses.

- The impact of the abolition of set-aside was examined separately. The removal of set-aside has a depressing impact on projected arable commodity prices and consequently market receipts in NI.

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Annex 1: Health Check Summary Tables

Table A1.1: EU-27 Results for the Health Check Scenarios (Percentage difference in 2017)

	Core Analysis Scenario 1 vs Baseline	Lower World Prices Sensitivity Scenario 3 vs Scenario 2	Higher World Dairy Prices Sensitivity Scenario 5 vs Scenario 4
Meat Sector			
Livestock Numbers			
Dairy Cows	0%	1%	4%
Suckler Cows	-1%	-2%	-3%
Sows	0%	-1%	-1%
Ewes	0%	0%	0%
Production			
Beef	0%	0%	1%
Pig	0%	-1%	-1%
Poultry	-2%	-2%	-2%
Sheepmeat	0%	0%	0%
Prices			
Young cattle R3	0%	-1%	-1%
Pig meat reference	-1%	-1%	0%
Chicken	-2%	-3%	-1%
Sheep meat reference	0%	0%	0%
Dairy Sector			
Production			
Milk	0%	1%	5%
Cheese	0%	1%	5%
Butter	-2%	-3%	9%
SMP	-8%	-7%	17%
WMP	2%	-11%	13%
Prices			
Milk price	-2%	-10%	-8%
Cheese	-1%	-9%	-10%
Butter	-15%	-35%	-10%
SMP	4%	2%	-6%
WMP	1%	-12%	-5%
Crop Sector			
Production			
Wheat	0%	0%	0%
Barley	0%	0%	0%
Rapeseed	0%	0%	0%
Prices			
Wheat	-1%	-1%	1%
Barley	-1%	-1%	1%
Rapeseed	0%	0%	0%

Scenario 1: Health Check Proposals
Scenario 2: Baseline with Lower World Prices
Scenario 3: Health Check Proposals with Lower World Prices
Scenario 4: Baseline with Higher World Dairy Prices
Scenario 5: Health Check Proposals with Higher World Dairy Prices

Table A1.2: NI Meat Sector Results for the Health Check Scenarios (Percentage difference in 2017)

	Core Analysis Scenario 1 vs Baseline	Lower World Prices Sensitivity Scenario 3 vs Scenario 2	Higher Dairy Prices Sensitivity Scenario 5 vs Scenario 4
NI			
Beef Sector			
Beef cows	0%	0%	-1%
Dairy cows	-5%	-2%	-8%
Total cattle	-2%	-1%	-4%
Beef price	0%	-1%	-1%
Production	-1%	-2%	-1%
Sheep Sector			
Ewes	0%	0%	0%
Total sheep	0%	0%	-1%
Sheepmeat price	0%	0%	0%
Production	0%	0%	0%
Pig Sector			
Sows	0%	0%	-1%
Total pigs	0%	0%	-1%
Pigmeat price	-1%	0%	0%
Production	0%	0%	0%
Poultry Sector			
Poultry price	-3%	-4%	-2%
Production	0%	0%	0%

Scenario 1: Health Check Proposals
Scenario 2: Baseline with Lower World Prices
Scenario 3: Health Check Proposals with Lower World Prices
Scenario 4: Baseline with Higher World Dairy Prices
Scenario 5: Health Check Proposals with Higher World Dairy Prices

Table A1.3: NI Dairy Sector Results for the Health Check Scenarios (Percentage difference in 2017)

	Core Analysis Scenario 1 vs Baseline	Lower World Prices Sensitivity Scenario 3 vs Scenario 2	Higher Dairy Prices Sensitivity Scenario 5 vs Scenario 4
NI			
Dairy Sector			
Milk production	-5%	-2%	-8%
Dairy cows	-5%	-2%	-8%
Milk price	-2%	-9%	-7%
Liquid milk consumption	0%	0%	0%
Manufacturing use	-1%	1%	1%
Dairy Commodities			
Production			
Cheese	-1%	4%	-2%
Butter	-8%	-12%	-3%
SMP	-3%	2%	-3%
WMP	5%	-5%	3%
Commodity Prices			
Cheese	-1%	-7%	-8%
Butter	-14%	-31%	-9%
WMP	1%	-12%	-5%
SMP	4%	2%	-6%

Scenario 1: Health Check Proposals
Scenario 2: Baseline with Lower World Prices
Scenario 3: Health Check Proposals with Lower World Prices
Scenario 4: Baseline with Higher World Dairy Prices
Scenario 5: Health Check Proposals with Higher World Dairy Prices

Table A1.4: NI Crop Sector Results for the Health Check Scenarios (Percentage difference in 2017)

	Core Analysis Scenario 1 vs Baseline	Lower World Prices Sensitivity Scenario 3 vs Scenario 2	Higher Dairy Prices Sensitivity Scenario 5 vs Scenario 4
NI			
Crop Sector			
Area			
Wheat	0%	0%	0%
Barley	0%	0%	0%
Rapeseed	0%	0%	-1%
Production			
Wheat	0%	0%	0%
Barley	0%	0%	0%
Rapeseed	0%	0%	-1%
Prices			
Wheat	-1%	-1%	1%
Barley	-1%	-1%	2%
Rapeseed	0%	0%	0%

Scenario 1: Health Check Proposals
Scenario 2: Baseline with Lower World Prices
Scenario 3: Health Check Proposals with Lower World Prices
Scenario 4: Baseline with Higher World Dairy Prices
Scenario 5: Health Check Proposals with Higher World Dairy Prices

Table A1.5: NI Market Receipts, Feedstuff Costs and Decoupled Payments Results for the Health Check Scenarios (Percentage difference in 2017)

	Core Analysis Scenario 1 vs Baseline	Lower World Prices Sensitivity Scenario 3 vs Scenario 2	Higher Dairy Prices Sensitivity Scenario 5 vs Scenario 4
NI			
Market receipts			
Wheat	-1%	-1%	2%
Barley	-1%	-1%	2%
Rapeseed	1%	0%	-3%
Total Crops	-1%	-1%	2%
Cattle	-1%	-3%	-2%
Pig	-1%	-1%	-1%
Sheep	0%	0%	0%
Poultry	-4%	-5%	-2%
Total Livestock	-2%	-3%	-2%
Milk	-7%	-11%	-15%
Total Market Receipts	-4%	-6%	-8%
Costs			
Wheat	-1%	-1%	1%
Barley	-1%	-1%	2%
Rapeseed	0%	0%	-1%
Total Crops	-1%	-1%	2%
Beef cows	0%	-1%	0%
Dairy cows	-6%	-2%	-7%
Pig	-1%	-1%	0%
Sheep	0%	0%	0%
Poultry	-1%	-1%	1%
Total Livestock	-2%	-1%	-2%
Payments			
SFP	0%	0%	0%
Modulation fund	0%	0%	0%

Scenario 1: Health Check Proposals
Scenario 2: Baseline with Lower World Prices
Scenario 3: Health Check Proposals with Lower World Prices
Scenario 4: Baseline with Higher World Dairy Prices
Scenario 5: Health Check Proposals with Higher World Dairy Prices

Annex 2: Set-Aside Summary Tables

Table A2.1: EU-27 Results for the Abolition of Set-Aside Scenario (Percentage difference in 2017)

	Core Analysis Scenario 6 vs Baseline
Meat Sector	
Livestock Numbers	
Dairy Cows	0%
Suckler Cows	1%
Sows	0%
Ewes	0%
Production	
Beef	1%
Pig	0%
Poultry	0%
Sheepmeat	0%
Prices	
Young cattle R3	-1%
Pig meat reference	-3%
Chicken	-3%
Sheep meat reference	-1%
Dairy Sector	
Production	
Milk	1%
Cheese	1%
Butter	1%
SMP	1%
WMP	4%
Prices	
Milk price	-1%
Cheese	-2%
Butter	-1%
SMP	-2%
WMP	-1%
Crop Sector	
Production	
Wheat	3%
Barley	4%
Rapeseed	3%
Prices	
Wheat	-6%
Barley	-6%
Rapeseed	-3%

Scenario 6: Re-introduction of Set-Aside

Table A2.2: NI Crop Sector Results for the Abolition of Set-Aside Scenario (Percentage difference in 2017)

	Core Analysis Scenario 6 vs Baseline
Crop Sector	
Area	
Wheat	10%
Barley	-2%
Rapeseed	6%
Production	
Wheat	10%
Barley	-2%
Rapeseed	6%
Prices	
Wheat	-6%
Barley	-7%
Rapeseed	-3%

Scenario 6: Set-Aside

Table A2.3: NI Meat Sector Results for the Abolition of Set-Aside Scenario (Percentage difference in 2017)

	Core Analysis Scenario 6 vs Baseline
NI	
Beef Sector	
Beef cows	0%
Dairy cows	-1%
Total cattle	0%
Beef price	-1%
Production	0%
Sheep Sector	
Ewes	1%
Total sheep	2%
Sheepmeat price	-1%
Production	0%
Pig Sector	
Sows	2%
Total pigs	2%
Pigmeat price	-3%
Production	1%
Poultry Sector	
Poultry price	-4%
Production	0%

Scenario 6: Set-Aside

Table A2.4: NI Dairy Sector Results for the Abolition of Set-Aside Scenario (Percentage difference in 2017)

	Core Analysis Scenario 6 vs Baseline
NI	
Dairy Sector	
Milk production	-1%
Dairy cows	-1%
Milk price	-2%
Liquid milk consumption	0%
Manufacturing use	-2%
Dairy Commodities	
Production	
Cheese	-2%
Butter	-2%
SMP	-3%
WMP	-1%
Commodity Prices	
Cheese	-1%
Butter	-1%
WMP	-1%
SMP	-2%

Scenario 6: Set-Aside

Table A2.5: NI Market Receipts, Feedstuffs and decoupled Payments Results for the Abolition of Set-Aside Scenario (Percentage difference in 2017)

	Core Analysis Scenario 6 vs Baseline
NI	
Market receipts	
Wheat	5%
Barley	-10%
Rapeseed	18%
Total Crops	-6%
Cattle	-2%
Pig	-2%
Sheep	1%
Poultry	-4%
Total Livestock	-2%
Milk	-3%
Total Market Receipts	-2%
Costs	
Wheat	4%
Barley	-9%
Rapeseed	4%
Total Crops	-6%
Beef cows	-2%
Dairy cows	-3%
Pig	-2%
Sheep	-1%
Poultry	-4%
Total Livestock	-3%
Payments	
SFP	0%
Modulation fund	0%

Scenario 6: Set-Aside