

EU Milk Production Quotas

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■ Take Home Messages

- Milk quotas in the EU will be phased out, then eliminated in April 2015.
- The impact on overall EU milk production is likely to be small.
- But, it will lead to a redistribution of production between countries, and significant restructuring within countries.
- Successive reforms mean that the EU has become exposed to fluctuations in the world dairy market.
- A WTO agreement will add to this by removing export subsidies from the EU's policy toolbox.
- Much depends on developments within the new member states of the EU, where the outlook is uncertain.

■ Introduction

Recent developments in dairy markets have highlighted the strengths and weaknesses of the policies that the EU uses to support its dairy markets. When prices for dairy commodities on world markets took off, EU producers were largely unable to respond by increasing production as most were already producing at or close to their limits set under the quotas. The EU Commission tried to respond, but all that could be done was to agree to a 2% increase in quotas for the 2008/09 marketing year. When the Commission proposed changes to the quota system the mood of the member states was more positive than in previous reforms of the Common Agricultural Policy (CAP) where resistance had been strong.

The environment has changed rapidly, however, with the fall in commodity prices in 2008. A combination of high costs and falling dairy prices has meant that even though milk prices in the EU were high from a historical perspective in 2008, production has undershot quota by 2.6 million tonnes. Internal EU

prices have moved back towards their support levels, and with it pressure for export subsidies to be reinstated, which many had assumed were gone for good. The ambitious proposals for rapid expansion have disappeared, and unless there is a major turnaround in the markets, it looks like only a fraction of the additional two percent of quota for the coming marketing year will be filled.

Despite the problems, the dice have been cast for the quota system, and the only question remaining is how quickly it can be phased out. Since the system has been in place for two decades, and in many member states significantly distorts the market, it is difficult to predict what the impact of its abolition will be. Recent months have underlined that much depends on the strength of world markets.

■ **Dairy Quotas in the EU**

The establishment of the Common Agricultural Policy (CAP) of the EU was motivated by the necessity to standardise the agricultural policies that prevailed in the EU in the post-war period. Given the difficulties securing the food supply during World War II and the founding members' position as net food importers, it was natural that the policy would focus on promoting food supplies through higher prices.

In this respect the CAP was a great success, and the dairy industries of the initial members, and the new members such as Ireland, modernised their industries and increased production. During the 1970s the EU moved from being an importer of dairy products to a situation where there was a persistent surplus. High internal prices were maintained by import tariffs and government purchases when prices fell below the "intervention price" level. Persistent surpluses were therefore expensive in that the product had to be given away, stored or exported with a subsidy. Co-responsibility levies were introduced for many products to try to attempt to return some of the costs of the program to the producers, but the surpluses persisted.

It was against this background that the quotas were introduced in 1984. Each Member state was given a reference quantity which was then allocated to individual producers. If production exceeded the reference quantity then a "superlevy" of 115% was charged on that extra quantity. The initial quotas were not sufficiently restrictive as to remedy the surplus situation and so the quotas were cut in the late 1980s and early 1990s.

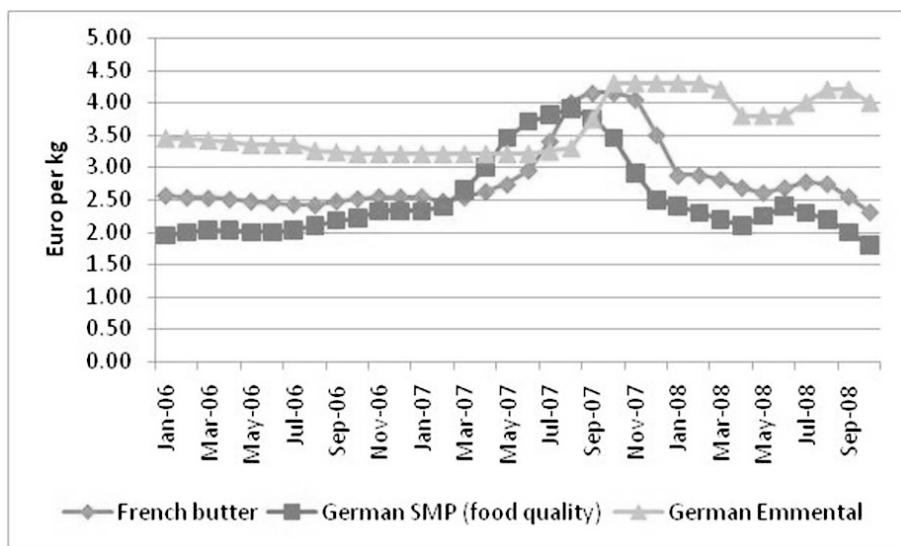
Quotas have retained that basic structure until the latest "Health Check" reforms of the CAP, even as other commodities have seen widespread changes. Dairy quota became a significant asset for producers and therefore once they were introduced there was much resistance to any changes that

would diminish their value. In 1998, the Agenda 2000 reform of the CAP reduced EU support prices and expanded quotas, but resisted many member states' efforts for the ending of quota. The Mid-Term Review ushered in de-coupled payments for most sectors, but only outlined options for dairy reform that went nowhere. In 2004, 10 new countries joined the EU and were therefore allocated dairy quotas, as were Romania and Bulgaria that joined in 2007. The accession of these countries has dramatically altered the structure of the dairy industry in the EU, as the size of their dairy herds is often very small, and many countries have substantial subsistence production.

Higher dairy commodity prices in 2007 and early 2008 undoubtedly helped the Commission in their effort to eliminate quotas, which was included in the Health Check proposals. Even though the exuberance of early 2008 has passed, dairy quota elimination survived the compromise over the final details of the package, and quotas will end on April 1, 2015. Prior to that, a "soft landing" is targeted through five annual increases in milk quota of one percent each between 2009 and 2013. Italy will get the full five percent in one go as of 2009, as a result of their chronic overproduction caused by not passing the costs of the superlevy on to producers. In order to prevent this happening in the future the superlevy will be increased to 150 percent for production over six percent of the quota for the marketing years 2009/10 and 2010/11.

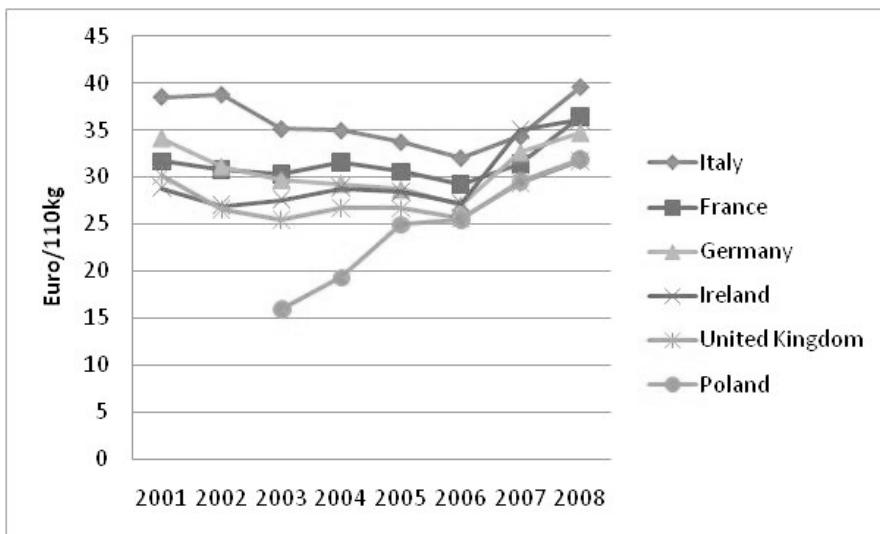
■ Riding the Rollercoaster

As has already been noted, the most significant change in dairy policy within the EU since the 1980s has occurred during an unprecedented period of volatility in the EU market. Prior to the changes made in the 1998 Agenda 2000 reforms, prices were usually institutionally determined and experienced little volatility. Figure 1 shows the development of market prices over the last two years. In June 2007 the EU set export subsidies to zero as world prices for commodities rose and the EU was able to export without them, albeit at a lower level. This action by the EU, coupled with drought in Australasia and strong demand in Asia boosted world prices and these higher prices were reflected in EU prices. The bump in prices was short-lived, however, and prices for butter and skimmed milk powder (SMP) returned to their historically still high 2006 levels, soon to be followed by whole milk powder (WMP) (Figure 1).



Source: DairyCo Datum

Figure 1: Dairy commodity prices in the EU



Source: European Commission

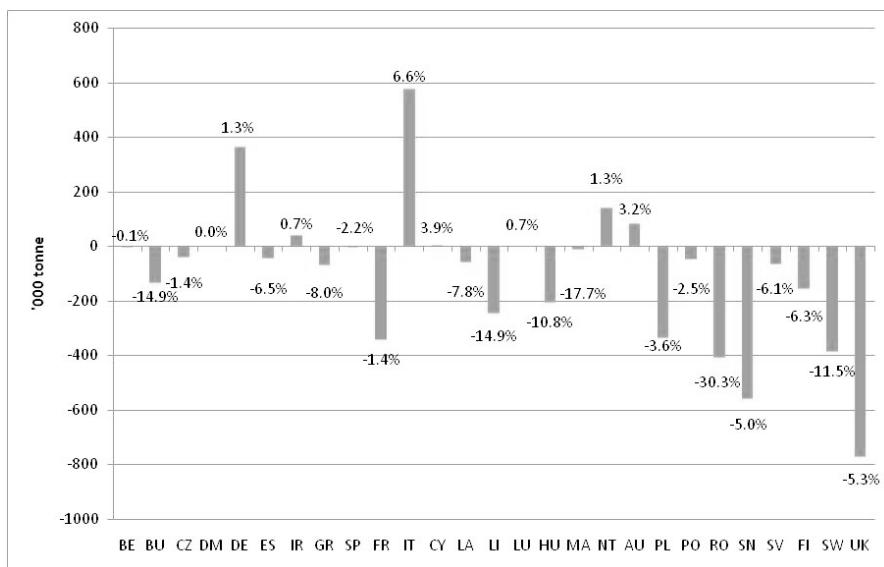
2008 figures are average of January- September price.

Figure 2: Milk prices in the EU

Milk prices are set in a number of different ways within the member states on the basis on their disparate institutional structures. In addition, prices paid to

farmers can differ on the basis of the product mix within the country and geography. Milk prices for recent years are shown in Figure 2. Milk prices generally followed the changes in the support prices for butter and SMP which were reduced as part of the Agenda 2000 reforms. The higher product prices shown in Figure 1 are reflected in increasing prices in 2007 and 2008. Despite these prices there was still unrest in the dairy industry, with many protests, including one which saw farmers sending the Commission their milk.

Part of the reluctance in the past to ending the quota system has been the perception that in ending quotas there would be a large expansion in production that would lead to a collapse in prices. However, despite the strong prices that prevailed in the last couple of years, production in the EU was in fact well below that which was allowed under the quota, as shown in Figure 3. For the EU-27 as a whole milk deliveries were below quota by 1.9 percent or 2.6 million tonnes. If Italy's over production is ignored it can be seen that despite the high prices, many countries were significantly below quota.



Source: European Commission

Figure 3: Milk deliveries vs. quotas, 2007/08 marketing year

There are many reasons as to why countries failed to meet quota in a year of such high prices. Clearly, the run up in input prices over that period meant that there was not as large an increase in margins as prices. Responding to changing market conditions takes time. Nonetheless, the experience of the 2007/08 marketing year provides some clues as to what the potential response to higher quota levels would be. In 2007/08, the response would

have been small.

■ The End of Quotas in the EU

Estimating the impact of the ending of quotas is challenging for economists. Milk quotas have been in place for over 20 years, and during that time they have usually been binding for most countries and therefore there is little indication of what the underlying supply response to changing prices might be. In addition to this the way that countries administer the quotas is different in each of the member states, and in many the quota system was used as a means to achieve social goals. In countries like the UK and Netherlands, markets for the transfer of quota itself are well developed and milk production therefore tends to be carried out by the most efficient producers who can afford to bid the most for quotas. Ireland, however, has ring fenced the quotas to prevent the industry concentrating in a certain region. Where quota is traded freely, its value can be seen as a reflection of the underlying supply that wants to produce at the prevailing market price, but for other countries there are often few indicators of how production might evolve post liberalisation.

There have been some estimates of the value of the quota to the producers that have it, referred to its "rent", which is an indicator of the potential extra production that would occur in the absence of the quota restriction. Given the time and extensive data that is needed to calculate these I have not attempted to estimate my own and rather I use those of Lips and Rieder (2005). The rents and the results of the model were discussed at several meetings of experts, and were broadly in line with other studies that have been carried out. However, the model is very sensitive to these assumptions, and no one has even estimated the rents for the new member states which were estimated by the author on the basis of price and cost movements since accession.¹

The model that is used in this analysis is the FAPRI GOLD (Grains, Oilseeds, Livestock and Dairy) model. It is a partial equilibrium, dynamic model comprised of single equations, so it deals with the agriculture sector in isolation, and produces annual estimates and takes into account things like herd dynamics. FAPRI models attempt to include all the important policy drivers, economic relationships, and biological constraints for agricultural

¹The Lips and Rieder study yields estimates of the marginal quota rent, the distance between the market price and marginal costs, which are adjusted for price and cost movements since their calculation. The rent is included in the model as a negative adjustment on the price that is removed on liberalization. The quota level and the price minus rent give one point on the supply curve, and the rest of the curve is calibrated using assumed elasticities. Some studies estimate higher values for rent, and if these were used the supply curve would shift resulting in higher output and lower prices on liberalization.

systems. In this example, eliminating dairy quotas changes cow numbers, and therefore beef production as well as feed use and therefore grain markets.

In the analysis that is presented here the model has been simulated to produce an estimate of the evolution of the sector under one interpretation of the Health Check proposals. The work was completed before the November agreement but is instead based on the Commission's proposals. Nonetheless the general conclusions still hold, with respect to dairy sector policy. The results of the scenario are compared to a baseline, or prevailing policy yardstick simulation of the model. The details of the analysis are presented in Moss et al. (2008).

The policy changes that are assumed here are:

- As part of the Mid-Term Review reforms most direct payments were de-coupled from production. In this scenario some more beef payments and all remaining cereal coupled payments were de-coupled.
- The Commission's initial proposals regarding the transfer of some of the de-coupled payments to rural economy measures (a process called "modulation" by the EU) were incorporated but had little impact.
- Five annual increases in milk quota of one percent implemented from 2009 to 2013, followed by abolition in 2015.
- Export subsidies eliminated for all commodities in 2013 as EU already declared that, irrespective of a new WTO agreement, EU export subsidies will be eliminated.

Table 1: Summary of results from the Health Check scenario

	2006	2007	Baseline 2017	Scenario 2017	Abs. change	% change
000 head						
Dairy cows	24,891	24,305	21,197	21,275	78.49	0.37%
Production/cow	5,898	6,041	6,904	6,875	-29.42	-0.43%
Mil. tonnes						
Cow's milk production	146.8	146.8	146.3	146.3	-0.08	-0.06%
Fluid consumption	43.8	43.8	43.1	43.2	0.12	0.28%
Manufacturing use	102.0	102.1	102.3	102.3	0.01	0.01%
Feed use, net exports	6.5	6.5	6.3	6.1	-0.22	-3.43%
000 tonnes						
Cheese						
Production	8,820	8,906	9,672	9,699	26.52	0.27%
Non-EU imports	90	105	127	127	-0.02	-0.02%
Domestic use	8,391	8,465	9,450	9,476	25.77	0.27%
Non-EU exports	519	547	345	346	0.82	0.24%
Ending stocks	498	498	552	554	1.70	0.31%
Butter						
Production	2,086	2,101	2,084	2,033	-50.46	-2.42%
Non-EU imports	80	88	88	88	0.00	0.00%
Domestic use	1,945	1,943	1,929	1,994	65.09	3.38%
Non-EU exports	261	286	237	118	-118.84	-50.17%
Ending stocks	184	144	214	227	13.20	6.16%
Skim powder						
Production	895	952	750	693	-56.92	-7.59%
Non-EU imports	22	22	22	22	0.00	0.00%
Domestic use	781	772	698	684	-13.78	-1.97%
Non-EU exports	176	242	74	32	-42.72	-57.40%
Ending stocks	157	117	64	59	-4.47	-7.01%
Whole powder						
Production	774	744	509	520	10.82	2.13%
Non-EU imports	20	20	16	16	-0.03	-0.19%
Domestic use	306	273	331	331	-0.63	-0.19%
Non-EU exports	488	491	193	205	11.42	5.91%
Ending stocks	42	42	72	72	-0.43	-0.60%
euro/100kg						
Milk, 3.7% fat	27.6	32.1	28.8	28.2	-0.59	-2.03%
Cheese market	384	423	400	396	-3.52	-0.88%
Butter market	290	435	257	218	-39.51	-15.37%
SMP market	219	285	261	271	9.95	3.81%
WMP market	248	322	234	236	1.92	0.82%
Butter intervention	259	246	246	209	-36.92	-15.00%
SMP intervention	175	175	175	175	0.00	0.00%

The results of the scenario are presented in Table 1 above. It can be seen that when the combination of policies that are outlined above are included in the model, the impact on dairy cows, yields and production is benign. The elimination of quotas results in an increase in production in the more efficient member states but the elimination of export subsidies results in an offsetting effect that leaves production more or less unchanged. Cow numbers rise and yields fall as a result of the transfer of production from the less efficient member states to those with lower costs who are farming more extensively.

In 2007 export refunds were set at zero. A function of the baseline that is used here is that in order to keep butter prices above intervention level, export subsidies are assumed to be reintroduced into the EU. The loss of export subsidies means that the butter price falls, and it is assumed that the Commission allows support levels to fall as well to prevent a persistent increase in stocks. The model estimates that butter intervention prices need to fall about 15 percent. If the EU were allowed to keep subsidising butter, the increase in cow numbers would be 0.67%, and production would actually increase by 0.58%.

For the world prices that were used for this baseline, the other products could all export without subsidies (albeit at lower levels than in 2006 and 2007). Butter exports fall in the scenario as subsidies are reduced, but prices fall to world levels and so there are some unsubsidised exports. The price fall for butter results in a drop in butter and SMP production. The EU SMP price therefore rises by nearly 4%, and exports fall. The reduction in butter prices pulls down the prices of WMP and cheese and therefore exports of those products increase.

One obvious question is why is there such a limited increase in milk production from the ending of quota. Studies of quota rent estimated large rents for EU-15 countries at lower world prices than prevail in the baseline. However, rents have been eroded by increasing costs – in this baseline world oil prices were assumed to be around \$70/barrel for the projection period, and feed prices have been pushed higher by strong demand including that from the increased production of biofuels.

The results of the analysis depend on a number of things, and under a different set of assumptions could be significantly different. The major factors influencing the results are:

World Dairy Prices

It is assumed here that the support prices of the EU continue to provide a floor to internal prices. At these prices it is difficult to see a scenario where rents would be substantial. However, a return to price levels like those seen in 2007 and early 2008 could lead to significant export potential and would

increase the production response to the ending of quota.

Also important for the analysis is the reaction of world market to changes in EU dairy trade. An estimate is made in this analysis to incorporate the reaction of the world market, but the changes are relatively minor. However, the world dairy market is thinly traded and the experience of the last 24 months shows us that movements can be substantial and difficult to explain.

Input prices

Producers in the EU have also been exposed to wild fluctuations in both their output and input prices. Both grain and oil prices rose to very high levels before falling and then settling (at time of writing) at levels that were still at high levels in comparison with history. The movement of input prices and their relativity will not only determine the level of production, but also influence its geographical location.

Rents

The production potential is unobservable and very difficult to calculate. The approach here is a combination of taking rents from past studies, using market movements from their calculation date to adjust them, and then observing the projected values to the experience of the respective member states in recent years. The reality of the situation is that there is a high degree of uncertainty as to what the impact of removing the quota system will be in many member states.

Since rent estimates vary across member states the projections of the impact of removing quota also differ, as shown in Figure 4. In general, the output of most countries contract, whereas production of milk in Ireland and Poland expand. Not all countries are modelled individually, so the composite "Other EU-15" group would include some efficient North European producers expanding their output, with other members of that group contracting.

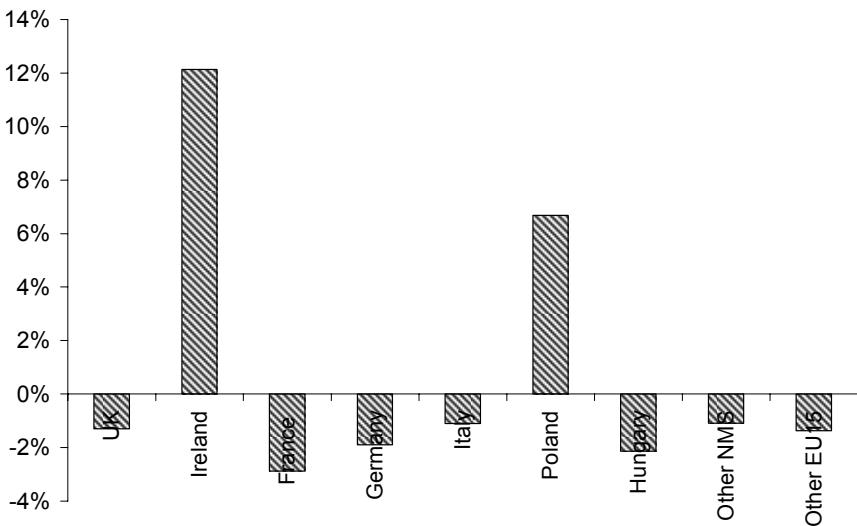


Figure 4: Changes in country milk production levels from the Health Check scenario

Processing Capacity

It is assumed in this analysis that Ireland and Poland can find a way to process this extra capacity, which would undoubtedly require the construction of new capacity. It would also presumably involve Ireland moving out of the bulk commodity markets that it has served in the past into more of the value added markets vacated by the mainland Europeans.

■ Impact of Quota Elimination: United Kingdom, Ireland and Poland

Looking at the overall EU-27 picture in The UK has a fully functioning quota transfer system and has experienced sustained reductions in dairy farmer numbers as quota has found its way to the most productive producers. Yields are higher than in the other two countries as are herd sizes. UK deliveries have been significantly less than the quota since 2003/2004 and this shortfall has been increasing. Correspondingly, the value of quota rent has fallen and very little quota is actually traded. We can therefore be relatively confident of the impact of the elimination of quota will be in the UK. A drop in price will reduce production, and if the reduction is large enough this may speed up exit from the industry, but it is unlikely to change much (see Drew Associates, 2008, for a detailed examination of the impact on the UK).

Table 2: Summary of dairy sector characteristics for the United Kingdom, Ireland and Poland, 2006

	Cow herd million	Yield kg/hd	Herd size cows	Production '000t	Deliveries	Prop. Deliv.
United Kingdom	2.20	7,096	123.80	14,359	13,920	96.9%
Ireland	1.09	4,772	48.50	5,188	5,234	100.9%
Poland	2.64	4,544	3.90	11,982	8,826	73.7%

Source: EUROSTAT, DairyCo Datum

Note: Herd size from 2006

The situation in Ireland is different to that of the UK. Ireland has more extensive systems, lower yields and smaller herd sizes. Irish dairy farmers have been operating in a highly regulated environment with comparatively little transfer of quota which is ring fenced to certain regions. Until recently the price of quota was set administratively. As a result of these restrictions it is harder to assess the implications of the ending of dairy quota, or make an estimate of rents in the absence of open trading (see Hennessy, 2007 for an analysis of the impact of changing quota on farm structure).

In practice there may be two types of farmers, those that are currently severely constrained and those that could expand production rapidly if quotas were ended using their existing resources. It may be that these farmers would reduce or eliminate any non-dairy cattle enterprises on their farm to expand production. The expansion would likely come about at the expense of those who have benefited by the ring fencing system – those farmers in inefficient regions. It could be that the introduction of quotas would accelerate the exit rate from the industry, and increase the concentration of production and yields. This would have implications for the processing industry as well as the location of their milk supply would change.

The enlargements of the EU in 2004 and 2007 have dramatically changed the composition of the European agriculture sector. Although the structure of farming differs between countries, the enlargements have in total dramatically increased the number of farmers through the addition of a great many smaller holdings which contrasts with the more modern, mature sector of the EU-15, particularly for dairy. Poland, for example, is about the fourth largest producer of milk in the EU. Yields are well below the EU average, but herd size is tiny at just four cows per holding, reflecting the huge numbers of farmers with just one or two cows. Poland's quota is well below that of total production, with deliveries to dairies accounting for less than 75% of production since a high level of production is consumed on farm or through informal channels (subsistence production). This is a characteristic of the New Member States and makes assessment of a post quota market difficult.

There have been few estimates of production potential in Poland. At first

glance it should appear that there would be massive potential. In Figure 2 it can be seen that the Polish milk price has been climbing strongly after accession to the EU in 2004 and there appears to be plenty of scope from restructuring. However, the industry's costs are also rising as it attempts to meet the higher standard requirements that come with EU membership. Can the subsistence production be converted to deliveries?

The case of Poland, or Bulgaria and Romania, illustrates the rise in uncertainty that is now attached to any analysis of the ending of dairy quotas. It is impossible to anticipate with any degree of accuracy how these industries will look in 2015.

■ EU Dairy Markets and the WTO

The EU has virtually agreed to phase out export subsidies as part of any WTO deal and it has been shown that this has the potential to have an influence on the sector. The Commission is likely to face a decision in the coming months, given the current level of prices, regarding how far below intervention prices the market price will be allowed to go. There is a limit on intervention purchases of SMP and butter and after those are made the price can theoretically be allowed to fall, but in reality the Commission would step in at some point with export subsidies.

If there is an agreement under the Doha Round it is also likely to include some significant cuts in import tariffs for the EU. The significance of these cuts will again depend on the level of world prices that prevail. Since dairy tariffs are high, if EU prices are close to world levels then even a reduction of 70% in tariffs could leave them at a level where they offer some protection. If a combination of low world prices, an unfavourable exchange rate, or strong internal demand leaves EU prices significantly above world levels then cuts in tariffs could cut EU prices significantly.

There is likely to be the option of labelling some products as sensitive and therefore subject to a smaller reduction in tariff, but at the expense of increased tariff-free access to the EU market. In the past, butter has been identified as a product where this option could be exercised. As has been shown by the events of the last year and the results of the analysis butter is the most likely of the commodities to be under pressure and falls under just a couple of tariff headings – an advantage as the total number of tariff headings will be restricted in terms of what can become a sensitive product.

■ Conclusions

After many years of resisting attempts at its reform, the dairy sector is now scheduled to say goodbye to quotas in 2015. In fact, given the low levels of anticipated production potential, quotas for many countries will become meaningless before then as the one percent annual increases accrue. Given the problems even meeting the existing quota over the last year it should not be surprising that the analysis shows little impact for the EU-27 as a whole as a result of ending quotas.

The change will lead to a redistribution of quota between countries, and within some countries. Production will move from the high cost producers to the lower cost ones. Those countries that have chosen a very rigid administrative approach to quota exchange are likely to see significant restructuring within their own country. One major uncertainty comes from the New Member States. Do they have a cost advantage? Will they consolidate production, or just lose the production that currently comes from very small scale producers.

In the past EU farmers have to a large extent been isolated from any volatility on world dairy markets through high import tariffs and support prices. The last year has given a taste of what the future holds for EU farmers, as quotas are eliminated, and WTO changes further expose the EU to world markets.

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