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Saying goodbye to Milk Quotas and the brutality of the market mechanism – is this a CAP reform too far?

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Introduction

The European Union (EU) has now been in place for over half a century and during that time has overcome many pressing problems of the day. One of its earliest priorities was the agricultural sector, and many attempts have been made to resolve the issues the sector faces. After these many attempts to resolve the issues, it is tempting to believe that these issues should have been resolved by now. However, the EU faces a major problem of overproduction and very volatile prices in the dairy sector. This paper suggests that EU intervention has helped to modernise farming and improve its efficiency. On top of which, the priority of attaining a high degree of food security was achieved. But it is clear that the free market does not perform well in parts of the agricultural sector because the sector remains highly volatile

One of the legacies of the EU's attempts to deal with the failure of the market was the introduction of milk quotas. These were introduced to solve major overproduction of dairy products. In an ideal world, production of commodities such as milk should be governed by the market mechanism. The market should, by the use of forward contracts, be able to smooth out fluctuations in price and output. Market information should allow farmers to make sophisticated long term decisions which enable their business to remain viable.

What has happened is that the sector has been abandoned to the ravages of market forces, and left it in a state of potential crisis. That is not to suggest that the crisis is of uniform dimensions. UK farmers have suffered most in the current environment, largely because their plight is made worse by the strength of pound relative to the Euro, brought about by the Greek crisis with respect to Eurozone.

When milk quotas were introduced in 1984 they were designed as a short term measure to regulate the oversupply of milk in a way which would ensure an equitable settlement for dairy farmers and consumers. Whilst they were at the very heart of the Common Agricultural Policy (CAP) for thirty years, they were criticised for causing prices to be higher than they needed to be, distorting markets and being costly to administer. They were also, by the very nature of administrative devices, difficult to alter. The CAP reform agreement of September 2003 extended the milk quota system until 31 March 2015. The process of dismantling the quota system was heralded in the 2009 'Health Check' which saw national quotas being increased by 1% every year, which meant that their value both as an asset and as a production enabling device, was to be slowly eroded. This was in preparation for dairy farmers having a so called "soft landing" when the quota system ended on 31 March 2015. So what we had was a disengagement strategy, at a time when it was clear the industry would struggle to cope with market volatility.

The hope was that farmers would have time to adjust to liberalisation, but this was predicated upon the market itself being buoyant. However this always looked to be unlikely as milk prices can both spike at high prices and then drift downwards steeply in price so that production becomes unprofitable. In this case because demand the global market for milk products slowed in 2014 due to the Russian trade embargo on dairy products and the slowing of demand from China. Very good production conditions for milk production in the EU and the USA led to prices dropping by 40% in 2014. Some Member States such as Ireland, that has a comparative advantage in milk production, are looking to increase their production, but British farmers are clear losers. This paper suggests that

market conditions for reform market will not deliver a soft landing in the dairy industry may not be what the reforms will deliver and that the result will be pressure for the EU to return to a strategy of managing the market. The soft landing thesis could only possibly work for the sector as a whole if quota had been withdrawn at a time when the prices were moving towards their peak. However, on a more restricted level, those dairy farms in Member States where there is a comparative advantage in terms of milk production will of course have a soft landing if they can gain market share at the expense of losses in market share elsewhere.

The Common Agricultural Policy

During the period of the Second World War and its aftermath there were significant food shortages. This desperate situation meant that national governments intervened in agricultural markets and this this was a role assumed by the European Union. From the EU's point of view, there was for many years, a concern to move towards achieving food security, added to which the place of farming and farmers was much more firmly entrenched in society at that time.

The EU's collective position was repeated in the various treaties. In the Lisbon Treaty, Article 39 Treaty on the Functioning of the European Union (TFEU) sets out the specific objectives of the CAP which were:

- to increase agricultural productivity by promoting technical progress and ensuring the optimum use of the factors of production, in particular labour;
- to ensure a fair standard of living for farmers;
- to stabilise markets;
- to ensure the availability of supplies;
- to ensure reasonable prices for consumers

The reason why milk quotas were introduced

The CAP was actually launched in 1962, but came about because of the establishment of the European Economic Community in 1958. The CAP was a largely successful in building upon the work of the Member States in creating food security after the problem of severe shortages dating back to the 1940s. Food shortages became largely a thing of the past. The price of agricultural products was guaranteed at a level designed to stimulate production and to achieve self-sufficiency. It became apparent as early as the late 1960s that there was a need to accept that surpluses would occur from time to time. The price guarantees resulted in the most efficient farmers being able to produce as much milk as they cared to, with significantly better returns than the small scale less efficient operators, so the scheme at that time resulted in social inequality in the guise of economic equality. However, technical innovation and generally greater efficiency resulted in the surpluses becoming a significant problem especially in an era of slow growth in consumer demand (Wilkinson, 1980). Some of this efficiency was, by the very nature of things, by consolidation of farming units, with the bigger units achieving the very best economies of scale.

One earliest areas of surplus production that the CAP had to deal with was milk and associated dairy products such as butter and cheese. The 1980 Commission Communication: "Reflections on the common agricultural policy" (European Commission, 1980), pointed out that disposal costs of the surpluses often amounted to an 80% subsidy for milk as the surpluses were dumped onto world markets.

The surplus production was essentially the responsibility of the EU and the Member States to deal with, but the overwhelming costs of disposal fell upon the EU finances. This resulted in over 70 percent of the EU's budget being spent on the CAP. Support for the milk industry at that time was taking around half of the CAP expenditure. See table 1 below.

Table1

EAGGF Guarantee Section expenditure

('000 million ECU)

	Total expenditure		Milk	Beef/Veal	Cereals	Sugar (net expenditure)[2]
	Gross	Net[1]				
1975	4.5	3.9	1.2	0.9	0.6	0.2
1976	5.6	4.4	2.3	0.6	0.7	0.1
1977	6.8	4.7	2.9	0.5	0.6	0.3
1978	8.7	6.4	4.0	0.6	1.1	0.5
1979	10.4	8.3	4.5	0.7	1.6	0.5
1980	11.3	9.5	4.8	1.4	1.7	0.1
1981[3]	11.1	9.2	3.3	1.4	1.9	0.3
1982[3] appropriations	13.7	11.0	4.2	1.4	2.2	0.4

[1] Gross expenditure minus levies including sugar levy.
[2] Gross expenditure minus production levies and storage levies.
[3] Including Greece.

Source (Adveneir, 1981)

The main objective of the milk quota regime was therefore, operating in conjunction with price support, to regulate milk production so that the extent of any surpluses was limited. The idea was to move towards new structures and avoid the anarchy that moving to the unregulated market could potentially bring (Commission, European, 1990).

Originally the quotas were introduced for a five year period, but were extended in February 1988 as part of the "agricultural stabiliser" package until 1992 and then they were further extended as part of the McSharry reforms until 2000. Under the Agenda 2000 reforms quotas were further extended until 2008 and then in the 2003 Mid-term review they were extended until the end of March 2015.

The introduction of milk quotas was not an ideal solution because it entrenched the regulation of the milk market, but it did avoid significant over-production within the EU, although there were many anomalies. It meant also that past ownership of quota was an important factor, because that came mostly with the farm. In particular, the transferability of quota and the fact that ownership of

the quota by individuals meant that they had an asset in its own right. Farms with quota were worth far more than those farms that did not.

The use of quotas did mean an end to the wasteful stockpiling of vast quantities of surplus dairy products which simply had to be dumped onto global markets or stored in vast warehouses whilst they deteriorated. Throughout the time that quotas were in operation there were attempts to adjust the sector more in line with the market mechanism. In particular:

- Diversifying production
- Improving quality
- Searching for new outlets
- Understanding of more medium and long-term trends
- Increasing support for more effective structures

But famers were still tied to limits on production which looked increasingly inappropriate. The main criticism of the quotas was that they.

- Slowed down the pace of change
- Did not rebalance production in line with national comparative advantage
- Became an independent system which substituted the market based supply mechanism with an administrative ones. However the situation pre-quotas could hardly be described as free market because the price of milk was supported by EU market intervention
- Farmers acquired something of value for free that could be transferred and was a legitimately tradeable but intangible commodity.

So what is special about the market for agricultural goods?

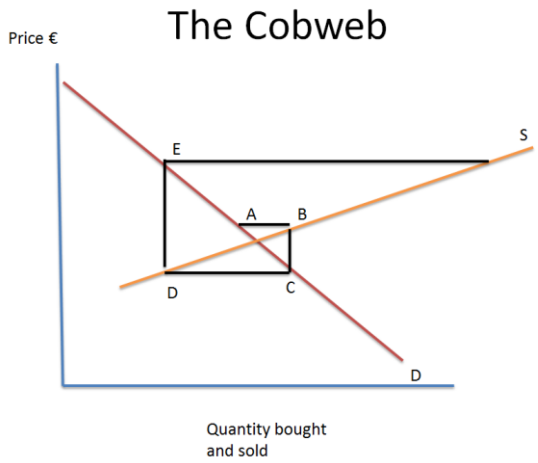
Agricultural products are difficult to manage largely because of the volatility of markets which can fluctuate significantly. The driving factors are the common ones relating to farming; that is the seasonal nature of the industry and the fact that growing conditions change year on year. This has been made more complex by the global nature of the industry enhanced by the improvements in the transport system. The global trade in dairy products took off in the early 2000s because of the increasing demand from markets in such as South East Asia and in particular China. Restructuring of New Zealand's dairy market also spurred international trade.

The supply condition relating to many farmed products can vary across the globe, so the impact of drought in Australia can impact upon markets in the European Union. An added dimension is that the global demand conditions can also vary quite considerably. These can be driven by political factors such as disputes leading to sanctions and counteracting retaliation, for example with Russia. Added to this market demand can depend upon income growth, health scares, diseases and changes in tastes.

These changes in demand and supply conditions are exacerbated by the inability of the farmers to react to the changes in market conditions. Once the crop pattern or the choice of animal rearing has been made, it is difficult to switch to alternatives in the short-term, so supply can be inelastic. This lack of flexibility, coupled with inadequate knowledge of market conditions led to a very cyclical pricing and product availability. If prices are high in one year, caused by a drought, farmers may be encouraged to enter into production of that crop; however better weather and the increase in the numbers of producers can mean that output increases and prices fall. That therefore provides

market signals to reduce output the following year, with of course the danger of sharply rising prices.

Diagram 1



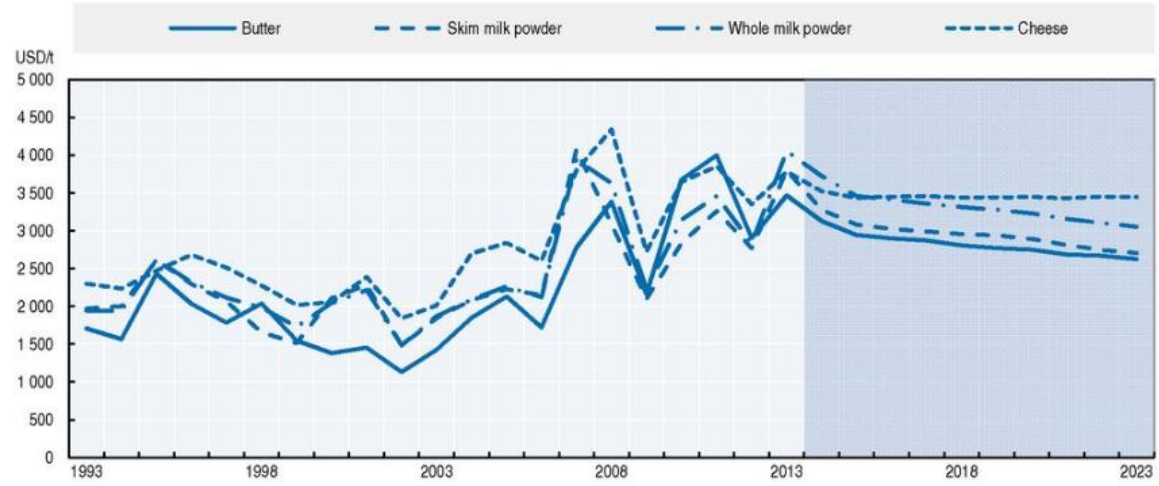
The diagram above illustrated the point. It is called the cobweb (sometimes the hog cycle) because of the way that the model of these markets is rarely stable (Harlow, 1960) and creates a the impression of spiders web when viewed over time. In the example above, we start off with a high price (A), which leads, after a period of time to an increased supply (B), which then in turn leads to a glut in the market and prices fall (C) and so the cycle goes on leading to huge swings in prices and supply. In reality, for commodities such as milk, there are limits to how far this process can go due to the availability of suitable resources.

As an illustration as to the way that market signals can be misleading, we see that in 2007 the price of milk spiked, then it dropped in response to increased production. In 2010 and 2011 prices recovered and in 2013 the price of milk hit new highs, partly because of increased demand in markets such as China, where there had also been a reduction in domestic supply. In that year, the major international exporters, the USA, EU, New Zealand and Australia all produced less milk than they had in the year previously largely due to adverse weather conditions and the high cost of animal feed. The price of skim milk powder and whole milk powder actually reached levels above

2007/8 which had been the peak of the commodity boom. As animal feed prices fell there was an added stimulus to dairy production as the sector became more profitable. The OECD-FAO Agricultural Outlook 2014-2023 noted that this situation meant that the scheduled end to quotas was likely to be smooth as many EU states were producing below their quota levels. However, they did acknowledge that the end of quotas was likely to bring greater volatility (OECD-FAO, 2014).

Chart 1 illustrates the way that real prices moved in the global market over a 20 year period.

World Prices of Milk in Real terms (2005 US$)



Notes: F.o.b. export price, butter, 82% butterfat, Oceania; F.o.b. export price, non-fat dry milk, 1.25% butterfat, Oceania; F.o.b. export price, WMP 26% butterfat, Oceania; F.o.b. export price, cheddar cheese, 39% moisture, Oceania.
Source: OECD and FAO Secretariats.

StatLink http://dx.doi.org/10.1787/888933100739

(OECD-FAO, 2014)

The actual price of whole milk powder, the global benchmark, peaked again at more than $6,000 a tonne in 2013 but by June 2015 was only $2,400, the lowest level since 2009 (Terazono, 2015). This suggests that the greater the reliance on milk exports the more that farmers, especially those who do not belong to a large cooperative with long-term contracts become vulnerable to significant price swings.

A 2014 study of the consequences of the removal of quotas in Switzerland in 2009 concluded that the market for dairy products was still very unstable after five years. Many farmers were forced out of milk production and one of Switzerland's tourism assets was undermined. This study suggested that most of the predictions for the Swiss dairy industry post quota removal had been wrong (EMMB, 2014). So there is evidence to suggest that the removal of milk quotas went ahead, despite significant indications that this policy was likely to pose major adjustment problems to the sector.

Structure of the EU dairy sector

Dairy forming is an ancient activity with cattle being selected for their ability to produce milk. In recent years, yields have increased significantly. Cows are normally artificially inseminated to produce a calf each year. They remain at peak milk production for usually three years, after which they are culled for beef production. Milk is produced in all Member States and amounts to about 15% of EU agricultural production in 2013 (European Commission, 2015)

The shape of the Dairy industry does differ greatly between the member states with milk herds being on average much smaller in new Member States. In the EU 15 over 90% of milk producers are specialist. On average, farms specialising in milk production in EU-15 have 54 dairy cows, with a milk yield of 7 337 per cow of milk per year, whereas in the EU-10 they have 19 dairy cows, with a yield of 5 695 kg per cow, of milk per year (European Commission, 2014). The UK in contrast has a much more concentrated dairy sector with an average herd size of 133 cows (AHDB Dairy, 2015). The average cow produced 14 per cent more milk in 2013, compared with a decade earlier (Daneshkhu, 2015).

The trend has been towards larger and larger herds with the inevitable squeezing out of small scale producers. There were now around 200 production units with more than 1,000 head of cattle. This was a tiny fraction of the numbers of holding (less than 0.002pc of the 2.6m holdings with cows

registered across the 28 member states). But these mega producers had 267,890 cows, or over 1pc of the 23.5m dairy cows in the EU. These very large units only exist in eight EU states, Czech Republic, Germany, Estonia, Spain, Italy, Hungary, Poland and Britain (Independent IE, 2014).

The reasons for the increased productivity of the dairy sector are related to greater mechanisation, although milking still does require some human input. The cattle variety and the breeding techniques mean that each cow generally yields more milk, although the danger here is that less popular breeds are allowed to die out. The way that cattle are fed has also changed, more animals live their lives in sheds, especially in winter, and the animal feed is much more highly processed and digestible. The EU's farmers have shown that they can produce more milk, but consumer demand has not kept pace, with self-sufficiency increasing from 111% to an estimated 115% over the four year period to 2015 as the table 2 below demonstrates. As a result the EU is reliant on the export sector.

Table 2

European Union : Balance Sheet of Cow Milk

m. tonnes	2011 EU-27	2012 EU-27	2013[1] EU-28	2014[2] EU-28	2015[2] Scen A	2015[2] Scen B	2015[2] Scen C
Deliveries of milk	139,6	140,5	142,0	148,1	150,1	148,1	153,1
+ Imports in milk equivalent	1,1	1,2	1,2	1,2	1,2	1,2	1,0
- Exports in milk equivalent	16,2	17,3	15,9	18,0	17,9	19,3	19,7
- Change in stocks in milk equivalent	-0,7	-1,2	+0,6	+2,1	+2,8	+0,8	+3,3
Consumption in milk equivalent	125,2	125,5	126,7	129,1	130,6	129,2	131,1
Consumption per capita	249	249	250	254	256	253	257
Self-sufficiency (%)	112	112	112	115	115	115	117

1) Provisional 2) forecast.
Source: ZMB

(European Dairy Association, 2015)

Ending quotas – who benefits?

The abolition of milk quotas was greeted with some enthusiasm in those states which had a comparative advantage in dairy production. Ireland is a good example of this and where 80% of milk is exported. Almost two thirds of Irish dairy farmers said they intended to increase their milk production once the quotas were removed (AIB, 2015). One estimate suggests that 15,000 new jobs would be created in the first five year in the sector and that output would increase by 20% in the first year and 50% by 2020 (Healy, 2015). Similar optimism has been expressed by German producers (Euractive.com, 2015). Milk production surged across Europe after quotas ended. EU milk deliveries in April and May 2015 were 2.1% higher on the year. Germany recorded a 2.3% rise, whilst Ireland led the way with an 11% rise (Tavener, 2015).

The other beneficiaries amongst the farming community were those who were committed to consolidation and large scale production in order to achieve economies of scale. This consolidation is illustrated by the UK dairy industry where the number of producers dropped from 23,286 in 1998 to 10,581 in 2014 (Anderson, 2015). The down side of this is of course that significant numbers of milk producers were forced out of the industry. The process of squeezing is however very messy.

Prices should be on average rather lower as a result of the removal of quotas, if there are scale economies, so the consumer should gain, as should food manufacturers. However, if prices in market are too low, there is always likely to be sympathy for the farmers who face receive prices for their milk which are below the cost of production. Dairy farmers, like all farmers do, receive money from the EU's Basic Payment Scheme, which on January 2015 replaced the Single Farm Payment Scheme. This had within it certain commitments to issues like the greening of the countryside. However the diagram below illustrates the extent to which prices put pressure on producers to drop out of the industry. There is a limit to which production can be maintained against a background of consistent losses. Milk production cannot simply be turned on and off. Longer term contracts with

supermarkets might be a solution but fewer than 15 per cent of farmers have the protection of supermarket contracts, and most have little option but to sell to milk processors. (Daneshkhu, 2015)

Chart 2

Individual farmers selling to supermarkets have to face up to their monopsony power. Unless farmers engage in collective action they can find that prices can be forced down to unacceptably low levels. In August 2015, this led to protests by farmers in the UK with highly publicised removal of low priced milk stocks from supermarket shelves (Holton, 2015). The UK supermarkets agreed to pay a higher minimum price for their milk in order to avoid the adverse publicity (Bradshaw, 2015)

One of the ironies was that whilst Irish dairy farmers were some of the first to welcome the end of EU milk quotas in April 2015, by August 2015 it was clear that the price competition in the dairy sector had started to make the sector unprofitable. It was suggested up to one third of all Irish dairy farmers were expecting to make a loss in 2015 (Dairy Market's staff, 2015). They felt that there needed to be a review of the intervention price. Spain's government resorted to giving direct aid to those farmers who were losing money by selling milk at a loss (Maler, 2015).

Welcome back intervention stocks

In order to protect milk producers from disastrous price falls, there are intervention schemes which are available to support milk prices. The farming lobby has once again been effective in ensuring a safety net of sorts. Intervention prices are set at a fairly low level, so they are not attractive to farmers except as a last resort. Public intervention requires the approval of the European Parliament and is designed to be a temporary expedient. The current scheme allows 50,000 tonnes of butter and 109,000 tonnes of SMP to be bought at set intervention prices of €2,217 per tonne and €1,698 per tonne respectively. The intervention prices were set in 2008 which mean that there real value had fallen by 2015 due to the impact of inflation.

Table 3

Cumulative SMP offered into EU public intervention (tonnes) in 2015

6 July	0
13 July	197
20 July	1,176
27 July	2,766
3 August	4,342
10 August	6,608
17 August	8,859

The Commission re-opened Private Storage Aid (PSA) on 5 September 2014 in response to the loss of the Russian export market and the impact that it might have on markets. It was expected to remain open until to the end of February 2016. PSA was a payment made by the Commission to processors in return for keeping products in storage and off the market for an agreed period of time. The scheme covered butter and SMP and was temporarily extended to cheese.

Table 4

Cumulative PSA stock levels (tonnes)

	Butter	SMP
September 14	12,061	6,281
October 14	18,835	13,060
November 14	19,567	13,878
December 14	20,471	16,003
January 15	22,203	16,547
February 15	34,981	16,350
March 15	38,956	15,571
April 15	49,956	14,274
May 15	63,810	14,671
June 15	74,955	17,632

(AHDB, 2015)

At an EU level the response to the crisis was addressed Copa-Cogeca an organisation of farming organisations and cooperatives. The Chairman of Copa-Cogeca Milk Working Party Mansel Raymond said on the 28 July 2015

> "The market is in a much more perilous state than it was 4 weeks ago, with producer prices far below production costs. It's a critical situation for many dairy farmers across Europe".
>
> "The EU Commission must act to improve the situation short term so that producers can meet demand which is expected to rise in the medium term. With 88% of milk produced in the EU intended for domestic consumption, the situation must also be taken seriously by all participants in the supply chain. If retailers continue to force prices down, we will see a big exodus of milk producers causing increased volatility on the market. We need a commitment from them on this. A loss of production capacity in the milk sector would also disturb the meat market." (Raymond, 2015)

The argument put forward was that intervention prices needed to be higher and some of the cost of additional intervention could be funded from the receipts of the €700 million superlevy (a fine) placed upon milk producers in the 2014-2015 cycle.

Conclusion

The cost of the CAP has gone down from over 70% of the EU's budget to just above 40%, which is an achievement of note. Surpluses from the dairy sector contributed towards the bloated agricultural spending in the past and so the introduction of quotas was an effective instrument of budgetary control. However, despite the long term warnings of a major policy shift, as soon as quotas were removed, the dairy industry quickly drifted into yet another crisis. The use of intervention purchasing is unlikely to assuage this predicament. The trend towards mega herds, often over 1,000 cows, is almost certainly likely to be efficient, but they are a long way from the simple mixed family farm that helped to contribute to the balance of the countryside in the past. The prospect of such developments is likely to be that some regions may not produce milk at all because their small scale producers are squeezed out of the market.

The conclusion is that quotas should not have been phased out without a much better understanding of the link between farm structures and their supply response. The consequence is that price instability and many farmers face real hardship and not only in the dairy sector as beef has production also involved the production of milk. Also there is a need to understand the importance of changes in the world market. Optimism with respect to the growth of opportunities in China, heralded in the Goldman Sachs forecast, which suggested that dairy consumption between 2013 would grow at a compound annual rate of 7 per cent, well ahead of the average 2 per cent for the biggest-consuming countries (Lex, 2015) may not materialise.

The prospect of the cows leaving the fields entirely and being housed in huge sheds for most of their lives is decidedly unattractive. Such large production units also pose greater hygiene risks, unless they are carefully monitored. There is still therefore a strong case for regulating the production of milk at the farm level.

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