Routes to Profitability: Is reduced milk production the solution?

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economics

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Executive Summary

Would reduced milk production result in higher farmgate prices? Some believe it would – but close investigation of this proposition shows that in a free market, many obstacles stand in the way of such a concept working. Moreover, continuing to focus on prices and production levels as the sole solutions towards a profitable dairy industry could be hampering essential investment.

At present, commodity prices are the main driver for most milk prices in Britain. If milk production fell significantly, the result would probably be a cycle of volatile prices as processing plants initially competed for milk, increasing prices slightly, then closed, letting prices fall again.

In the longer term, the fundamental change brought about by lower milk production would be to break the link between commodity and farmgate prices by minimising the amount of milk going into commodities. Milk prices would then be driven by supply and demand for milk in Britain, with increases in input costs needing to be accepted by the supply chain to maintain production and remaining efficient dairy farmers making a profit.

But if the 1.5 to 3 billion litre GB commodity milk market was permanently lost, it would not automatically be good news. The new milk price set by supply and demand would not necessarily be high; in fact it could be lower than today's price because the only farmers remaining would be the most efficient and/or those most determined – at any cost – to stay in production.

There would also be significant practical problems in intentionally losing that much milk from a free market. Co-ordinating or legislating for a reduction in each individual farm's milk output is simply not feasible – nor necessarily legal.

Today, with CAP Reform making the EU commodity market more competitive, future prices will probably be lower. The EU supply chains that succeed will be the ones that are most efficient. How much milk we produce will be driven by the market, which basically means that if we are competitive compared with our EU counterparts, we will continue to be able to produce milk for commodity products at a profit. The market will decide.

As British farmers are among the most efficient in the EU and we have favourable farm structures and climate, it **should** be possible to compete with other EU commodity producers – as long as the rest of the supply chain is also efficient.

So the industry appears to be facing a crossroads: do we positively work for maximising supply chain efficiency and producing as much – if not more – milk than today? Or do we give up our commodity market opportunities to our less efficient EU competitors?

Rather than calling for a reduction in milk production, which in both theory and practicality appears extremely unlikely to achieve the end of higher prices, a different approach seems necessary.

Assuming the commodity market is here to stay, it would be more productive for the industry to focus on three areas in order to increase profits:

1. **Efficiency** – across the supply chain and compared with our competitors.
2. **Innovation** – differentiate milk, increase its value and provide higher prices by better meeting customer needs.
3. **Relationships/contracts** – in order to obtain both efficiency and innovation through the supply chain.

These three aspects don't provide a 'quick fix' but they offer a longer term, more achievable and less painful solution to increasing profits than forcing a reduction in milk production, or waiting for 'natural wastage' to increase milk prices.

It is highly possible that if the whole supply chain concentrated on improving efficiency and relationships at all levels, it could compete on the commodity market. At the same time it could focus on innovation, and differentiate as many of our added-value markets as possible.

In this way British dairy farmers could have the best of both worlds: commodity production because they were competitive; but much of their milk also produced on a differentiated basis with prices driven by supply and demand in those markets.

It is becoming clearer that constant calls for a reduction in milk production will not encourage investment or development. Similarly, persistent appeals for higher milk prices will not encourage productivity or efficiency development. But this alternative approach focusing on farmer and processor relationships, efficiency and innovation could. However, it needs bold leadership, and a recognition that productivity must improve year on year.

Reducing milk production

Background

There has recently been much debate in the public arena about whether reducing the amount of milk produced in the UK would improve farmgate prices. The assumption underpinning this appears to be the traditional theory of supply and demand – if you reduce supply then prices will rise. Unfortunately, the dairy market is more complex than that and further investigations reveal milk prices may not actually benefit from a reduction in supply.

The aim of this paper is to make this debate more transparent, and to follow the proposal through to its logical conclusion.

Commodity prices drive undifferentiated raw milk prices

At present – and since deregulation – demand and supply for raw milk has not been the main driver of milk prices. Instead, commodity markets[1] – as the lowest value use of milk – have driven prices for farmers supplying raw milk (see appendix 1).

As long as we produce a significant volume of commodity milk (see appendix 2), prices for undifferentiated milk[2] will continue to be driven by commodity markets, with various premiums available[3].

Obviously, this is a source of concern because of the current reduction in CAP support for commodity markets. Lower prices from lower support are leading many farmers into financial difficulties, hence the calls from some quarters for a reduction in production in an attempt to rectify this situation.

Case Study 1: Demand for commodity milk and milk for the domestic market.

Although it is easy to view commodity and domestic milk markets completely separately, it is important to realise both are driven by demand – but different demands.

Domestic demand for liquid milk, added-value products, etc. is directly driven by the demand from UK consumers for dairy products.

Demand for commodity products comes from various sources; again consumers, but from the EU and even the rest of the world (via export refunds provided by the EU). In addition the EU acts as a buyer of last resort through the intervention system. It is because these second two factors tend to dominate the commodity dairy market that the EU Commission effectively sets the commodity price.

1 It should be noted that the most significant driver of UK commodity price fluctuations over recent years has been exchange rates.
2 Undifferentiated milk is normal milk which can be interchanged. Differentiated milk is milk such as organic, Waitrose, Asda etc, where a tanker of that milk cannot be interchanged with any other.
3 It is suggested by some that a smaller reduction in milk production, one that would not remove all commodity production, would have a positive impact on prices. However, at present we already have under-utilised commodity processing capacity and milk production has fallen – and milk prices are still being driven by commodity prices. The only possible difference if we lost more commodity milk (but not all of it) is that buyers may become concerned there will not be enough milk in the future and price accordingly. In this scenario, supply and demand will be operating, but without losing all commodity milk.

In recent years, particularly in the SMP market, demand from EU consumers has become more important than support from the EU Commission and therefore prices have been higher than support prices (please see Case Study 2 on EU commodity markets).

What would happen if we produced no commodity milk?

If milk supply dropped to the level that we were not producing any significant amount of commodity milk (see appendix 2), the fundamental change would be that raw milk would move from being priced from the commodity market, to be priced by the demand and supply for raw milk used in domestic products.

Before all the commodity milk disappeared, there would be cycle of higher prices due to lower supply, followed by the closure of a commodity processing plant leading to lower prices again, and so on until all the commodity milk was gone and many processing plants were shut.

But in the long term, if little commodity milk was produced, demand and supply would mean that whatever price (within reason) was required to secure the 9 to 11 billion litres (see appendix 2) needed for the current UK domestic market[4], would be paid.

How much milk would we have to lose?

It is arguable how much milk we would have to lose to move from commodity-based pricing to pricing from demand and supply.

However, from appendix 2 it is clear that we would need to lose between 1.5 and 3 billion litres of milk in Britain to stop producing commodity products. This large volume of milk would not be lost overnight.

What would happen as milk production fell?

The process of any fall in milk production would not be straightforward. As milk production began to drop, prices might rise in the short term as buyers attempted to keep processing plants full. However, eventually a processing plant would be shut (as Meadow Foods Casein plant was in 2005, and Chard butter/powder plant in 2003). This would restore the supply and demand balance, and prices would fall back to commodity levels.

This process would continue until commodity milk was gone, apart from one complicating factor.

If the UK lost 1 to 2 billion litres of commodity milk, this would be a considerable amount, even by EU standards. The loss of that much powder, butter or cheese would begin to have an impact on EU commodity prices. If the EU market was already reasonably tight, e.g. supply was moderate and/or exports were occurring, this reduction in supply could begin to increase commodity prices across the EU. This in turn would raise prices in the UK and probably prevent prices falling further.

4 Please note that this milk is not the total requirement for the dairy products in the UK, which is much greater. This milk produced for the domestic market is milk for products produced in the UK that are protected from imports by transport cost, branding, regional identity etc.

For this reason it is important to realise that the UK does not operate in isolation. EU countries are also facing lower milk prices and their milk production may also fall. If the UK is more efficient than other EU countries, production may fall faster in these countries than in the UK. This could mean commodity prices may stabilise at a point higher than support levels.

Those advocating falling milk production in the UK are effectively suggesting we are less competitive than other EU countries – therefore we should stop attempting to compete with them and give up our markets to those other countries. This case can be largely disproved by looking more closely at the EU commodity markets – see Case Study 2.

Case Study 2: EU Commodity Markets increasingly driven by supply and demand

Much of the call for lower milk production appears to be based on a concern that the UK cannot compete at lower commodity prices. However, this assumption can be questioned with UK farmers more efficient than most in the EU (see appendix 3) and commodity prices unlikely to fall all the way to the new intervention levels.

Our experience of the past three years suggests that commodity prices will not be driven by intervention prices so much in the future as in the past. In fact the EU Skim Milk Powder market is already being driven by EU supply and demand, with prices significantly above intervention levels. This is due to a shortage of milk powder and strong demand.

It appears possible that overall future commodity prices, although lower than in the past, will be higher than intervention levels would suggest. In the future, supply and demand may be more important in the EU commodity market than previously.

If supply and demand drive prices in the EU commodity market, then the most efficient producers will survive and produce milk profitably. Less efficient farmers will, in general, cease production (or possibly protect themselves from lower prices by differentiating their milk to add value). All in the EU will experience the lower commodity prices as a result of CAP Reform, and the countries that are most successful at restructuring their industry will continue to produce commodity milk because countries less able to cope with lower prices will see production fall.

Through supply and demand forces, this will then lead to stabilising or higher commodity prices for those efficient producers that are more able to withstand this and improve productivity.

If the UK is one of the most efficient countries in the EU[5], we should still be able to produce commodity milk profitably even if it does mean some change in the whole supply chain to maximise efficiency and productivity.

5 If the supply chain in the UK is efficient, there are still factors that could cause difficulties. If the market is not a level playing field due to different regulations or levels of support then this could prevent the UK from competing effectively. However, the same basic EU regulations do apply across all EU countries, so differences should be minimal in theory.

It is worth mentioning that the commodity market may remain within the EU for some time, as the collapse of the latest WTO negotiations import tariffs and export refunds may stay in place longer than intended. Import tariffs protect the EU market from supply of dairy products from the world market and export refunds mean we can take advantage of increased demand from the rest of the world for our dairy products.

These mechanisms isolate the EU and if we do not have an exportable surplus – as in SMP at present – the commodity market is driven by EU demand and supply alone.

What could be done to reduce the amount of commodity milk?

There would appear to be four ways of reducing the amount of milk produced in GB.

One: Contractual reductions

Two: Legislative approach – reduce quotas, golden handshakes for leavers etc.

Three: A co-ordinated voluntary cut across all farmers

Four: Reduce milk prices to force farmers out

Options one, two and three have little likelihood of success.

Firstly, there is no way that any agreed cut in production could be contractually enforced as competition laws would label this a supply cartel. Industry organisations (including Dairy UK) have looked into the feasibility and desirability of reducing milk production and have concluded that there is no practical way of orchestrating a reduction in milk supply and that it is not desirable to do so, even if it were possible. In addition, the companies/co-ops with more of their milk in commodity production have invested in commodity processing plants; they are unlikely to be keen on this route unless compensated by others in the dairy market.

Secondly, there appears little opportunity for a government solution to this issue. Government has made it clear it has little interest in getting legislatively or financially involved in restructuring the dairy market. The EU is increasing quotas at present and there would seem to be little chance of them reversing this position. Both the EU Commission and the UK government appear committed to opening the dairy market to full competition. Controlling milk supply flies in the face of this.

Thirdly, a co-ordinated voluntary agreement for all dairy farmers to cut production would be unlikely to work as many would refuse to comply. If it did work, it would be seen as a supply cartel and it is likely that legal action from the OFT would follow.

Therefore the only practical option would appear to be farmers leaving production; to be precise, farmers stopping production because of low milk prices, and not being replaced by others starting or expanding.

How many farmers would have to leave?

If commodity milk in Britain is around 1.5 billion litres (see appendix 2) then the smallest 5000 dairy farmers in GB (31% of producers) would have to leave to account for that reduction. More realistically there would be a mix of different-sized farms leaving and the numbers would be lower (possibly 20%).

If the amount of commodity milk in Britain was around 3 billion litres (see appendix 2) then the smallest 7000 dairy farmers in GB (44% of producers) would have to leave to account for that reduction. More realistically there would be a mix of different-sized farms and the numbers would be lower.

However, to make this work, no other farm could expand while this number left to give the required reduction in milk production. Any expansion by one farm would have to be offset by more farms leaving. Based on the 2006 MDC Intentions Survey finding that 37% of farms over 1 million litres (which produce 50% of the milk in Britain) plan to expand during the next two years, the percentage having to leave could be much greater.

This means to eliminate commodity milk production in Britain, between 20 and 44% of farmers would have to exit the industry.

What would the milk price be if we did not produce commodity milk?

If milk production did fall, and commodity milk was not produced, then demand and supply would drive prices. So what would prices be?

As stated earlier, whatever price (within reason) was required to secure the 9 to 11 billion litres (see appendix 2) needed for the domestic market, would be paid.

However, it is important to remember that if the market was competitive, no more would be paid than the minimum needed to secure enough milk. If market forces meant milk buyers could pay 14ppl and get all the milk they needed, they would do so. If they had to pay 20ppl then they would pay 20ppl[6]. However they would not pay more than was necessary, as market forces (competition) would prevent them from doing so.

Although a co-operative may wish to pay more than it needed to, competition with other co-operatives or private companies would prevent it from doing so. If it paid farmers more than competitors, it would soon lose business to those competitors unless it could compete on service or quality instead.

Assuming a reduction in milk production is achieved through a reduction in milk producers, the farmers left in the industry would be the most efficient farmers and/or the most determined to stay, however efficient or not they may be. In this situation, how likely would it be for milk prices to be as high as hoped?

6 It is worth noting that there is a top limit to the price that would be paid. Prices could not be higher than the cost of milk in a neighbouring country plus the transport cost of raw milk. If the milk price rose to that level, processors could begin importing milk. Therefore even in the totally domestic market there is still some competition with other milk producing countries.

It is worth examining the distribution of costs among the most and least profitable farmers in the 2002/3 Defra Special Study into the Economics of Milk Production.

ppl	Top 25%	25–50%	50%–75%	Bottom 25%
Average Cost [7]	15.7	18.0	20.2	28.5

Please note input costs have risen substantially since 2002/3 and will have increased these figures. However, efficiency improvements are also likely to have been made, and some of the additional costs may have been partly offset by these improvements.

This wide range in costs suggests there is a large variation in the cost base, and if it is mainly the efficient that are left, prices may not need to be as high as hoped in order to get all the milk needed. It should also be realised that the period of low milk prices required to encourage enough farmers to leave production would stimulate many of the non-leavers to maximise their performance and improve their productivity, further reducing costs.

The milk price paid would be determined by competition among UK dairy farmers who wish to continue to supply the market. This competition to supply would mean there would still be pressure on farmers – albeit from a different source – and the need for productivity to continue improving would remain.

However, if prices were driven by demand and supply, then other benefits would exist. These include input cost increases being passed back up the chain as they would affect all farmers[8], and efficient farmers making a profit. The level of profit made would depend on the level of efficiency compared with other producers.

It would not be possible to keep prices higher than necessary because farmers would be in competition to supply milk and to take over from less efficient farmers. This sort of competition is an inherent part of a de-regulated market and trying to prevent it is illegal. If we look at other agricultural and non-agricultural sectors we can see a similar pattern, with the more efficient taking over from the less efficient. Let's remember that the aim of reducing support in the sector is to encourage the markets to operate as they would in any other unsupported industry. Hence more efficient businesses will tend to be more viable and take market share from less efficient businesses.

This is the crucial issue in this paper. The future market will be a competitive one and the efficient will prosper – but on a supply chain basis, not just a farm basis. The whole supply chain needs to be efficient and it is just as important that the processing part of the industry is as efficient, compared with the UK's competitors, as farmers are. Although the actual size of any possible efficiencies (in ppl) to be made at processor level may be smaller than those that can be made at farm level, they are just as important, if only from the basis of moral support and having an effective supply chain relationship.

7 Includes: Family Labour, depreciation, rental equivalent for owned land, but no interest costs/return on capital employed.

8 If input costs rise across all farms, then in a demand and supply situation milk prices must rise if supply is not to drop. As demand is inelastic with regards to prices, the cost of the marginal producer will set the milk price and if his costs rise due to higher input prices, all milk prices will need to rise.

Production already falling

Effectively, the market is already imposing option four on the industry – lower milk prices. Production is also falling as a result[9]. Whether or not production will fall enough to stop prices being driven by commodity prices will depend on how competitive the UK industry is compared with the EU industry.

If we are competitive, EU production will fall, driving up commodity prices before we lose all our commodity production, and producers will manage to improve productivity/efficiency sufficiently to manage lower prices.

Whether we are producing commodity milk or not, milk prices will be set by competition of some kind. The most efficient producers will always be the ones that are profitable. The only issue is whether the remaining UK producers will compete within the UK because we have an inefficient industry relative to the EU, or whether our industry is efficient and we will be able to compete on an EU level.

9 In addition to milk prices causing production to fall, there may be additional effects from factors such as the poor weather this year or higher input costs.

An alternative proposal for higher profits

It is clear that reducing milk production is not the panacea it seems. So what other options does the industry have to return dairy farming to a more profitable state? The key is in focusing on increased profits rather than just prices, as the markets move to a more competitive basis.

The three key areas that stand to affect profits are:

1 Efficiency – compared with our competitors

2 Innovation – in order to differentiate milk

3 Relationships/contracts – in order to get efficiency and innovation

1 Efficiency – compared with our competitors

Efficiency can best be defined as your costs compared against competitors. Who your competitor is depends on the market you are in. Farmers and processors supplying milk for the domestic market are competing against one another. Farmers and processors in the commodity market are competing against farmers and processors in another countries, e.g. Ireland in the cheddar market.

Under the proposal to reduce milk supplies (so we only supply the domestic market) competition would still exist, but it would be between UK farmers. Thus farmers would need to continue improving productivity.

However, those suggesting that we should reduce the amount of milk we produce appear to be basing their strategy on the assumption that UK farmers are inefficient compared with EU farmers and cannot compete in an EU commodity market. This is despite the more conducive climate and larger average farm sizes, which mean we should be among the most efficient producers of milk in the EU (see appendix 3), and therefore we should expect to cope with CAP Reform better than many other EU countries.

Looking at the other scenario of retaining the commodity market, CAP Reform undoubtedly means the industry (as well as our competitors) will have to focus on improving productivity and efficiency. It is true that farmers have been doing this for many years, but it is also true that processors need to do the same if they are not currently as efficient as their EU counterparts.

All factors such as higher input costs are the same in other EU countries, and so we are no more advantaged or disadvantaged by these factors. The one area of difference that can work both for and against the UK compared with other EU countries is the euro/sterling exchange rate.

It is noticeable that in Australia and New Zealand (where markets have been made free and competitive over recent years) there appears to be less interest in the milk price (or an acceptance it will be driven by markets and a trust in the farmer co-ops to do a good job at getting the maximum price possible from the market), and more of a focus on continued productivity improvement. There is the same range in farm performance as in the UK, with average return on capital of only 2% to 3% (before capital appreciation), but with some farmers making much better returns.

It is also apparent that despite the same range in performance as the UK, and hence many farmers struggling to break-even, messages are positive. There is a standard view that efficiency must be improved each year. This might be through expansion, better technical performance, adoption of new technology or simplifying systems, but it must happen.

Finally, our current data (see appendix 3) suggests UK farmers are efficient compared with EU farmers, but they undoubtedly will need to continue improving to remain competitive and to cope with CAP Reform. However, where we have less information is on the relative efficiency of UK processors compared with EU competitors.

2 Innovation – differentiated markets

Innovation can directly help farmers in three ways:

1. Create a differentiated raw milk supply that is more valuable to the customer, e.g. organic, Waitrose, Channel Island, high omega 3 and regional.
2. Create added-value products at processor level that – if owned by a co-operative – can return profits to farmers.
3. Innovate more milk into higher value markets at higher prices than commodity markets.

A differentiated raw milk supply is fundamentally different to an undifferentiated one. Milk producers have much more control over the future of the market and the price they are paid. Other milk cannot easily replace the milk they supply, so farmers have more control. The degree of control depends on the degree of differentiation and the skill with which that is marketed to the customer.

The main determinant of the price is how much demand there is – i.e. how much of a premium consumers are prepared to pay and at what volume. For example, a lower premium may mean a lower margin per litre but higher volumes, while a higher premium may mean a higher margin per litre but lower volumes. The balance between the premium and the volume will be different in each case and has to be judged by the commercial individuals/organisations involved.

Added-value products should earn the processor higher profits. When the processor is a co-operative then these higher profits should eventually find their way back to farmers and benefit them directly.

In addition, added-value products are another way of competing. Better meeting consumer needs means your products capture markets that were supplied by others, allowing you to be more successful by competing on service and quality.

Innovation from any processor leading to increased demand for higher-value products can benefit farmers by removing milk from the commodity market. This milk will typically attract a higher price than commodity products from a processor of higher-value products, in order to secure stability and priority of supply.

Case Study 3: Increasing value and reducing costs by differentiating commodity milk

Would it be possible to differentiate milk on the basis of the profile? Most milk in the UK needs to be produced on a level basis for the market it supplies. However, milk for some commodity products need not be, as the products it goes into can be stored.

The trade-off will always be between an efficient milk processing plant and a higher milk price for level supply, or a less efficient processing plant, a lower milk price and seasonal supply. Which is the more profitable option for the farmer will depend on the difference in costs of producing level versus seasonal milk, and the difference in the processing efficiency of the factory.

However, if most commodity milk was produced on a seasonal basis then, by definition, the commodity milk market and the domestic milk market would be differentiated. This would lead to milk in the domestic market being priced on a supply and demand basis. This scenario only works if there is a substantial difference between the cost of producing seasonal milk and level profile milk, and that difference is greater than the cost difference at processing level.

3 Contracts and Relationships

Contracts and relationships are only important in order to facilitate efficiency and innovation. Antagonistic relationships where milk price is the main issue are unlikely to lead to a constructive working partnership which maximises efficiency and innovation.

It appears from outside these relationships that it is not so much what is done to milk prices, but the way in which it is done that is important. Companies that have cut prices and been straightforward about the reasons have often had less difficulties with their suppliers than companies cutting less and/or paying more, but communicating poorly with their suppliers or members. Transparency around the reasons for certain actions appears to have benefited relationships and mutual understanding within the supply chain.

Contracts and relationships would probably benefit if they aimed to make the entire supply chain more competitive and added value wherever possible. Undoubtedly the exact price of milk will always be a point of contention, but the other aspects of the relationship need to be regarded as equally important, if not more so.

Case Study 4: Is the whole supply chain efficient?

UK farmers have received the lowest milk price in the EU for most of the past 10 years. There are various reasons for this including lack of differentiated products, exchange rate fluctuations and lack of vertical integration (processing profits not being passed back). However two issues often overlooked are contracts, and whether inefficient processing capacity could be part (possibly only a small part) of the reason for lower prices. Are contracts that facilitate price cuts without offering farmers the option of leaving making 'tit for tat' price cuts easier to implement, particularly in the liquid market?

Price is important because even if EU farmers operating in the same market have higher costs, if the price they receive is higher, they may do better than UK farmers.

All in the supply chain, not just farmers, are competing to supply a dairy product, and the whole chain needs to be efficient and competitive. If any part of the chain is not competitive then other parts of the chain will suffer, e.g. higher processing costs equal a lower milk price.

Conclusion

The industry is currently at a 'crossroads'. It appears to be split between those who believe:

a we cannot compete in commodity markets because we are too inefficient, and therefore we should give up on that market as quickly as possible, and higher prices will follow.

b we can compete in the EU commodity market and even possibly expand to replace production lost elsewhere in the EU. Although we will have to make improvements in productivity and efficiency to cope with reduced support for commodity markets, we can do so successfully.

Producing less milk for the commodity market would lead to farmgate prices being driven by supply and demand, rather than by commodity markets. Efficient farmers would be profitable, cost increases would be passed up the chain, but the market would still be competitive, and over time, farmers would have to continue to improve productivity so that they could compete with each other.

High prices would be unlikely because only the most efficient and/or determined farmers would be left, and they would probably undercut each other to produce milk at relatively low milk prices, just to keep their market. In addition, the potential for imports would also prevent prices rising to far above those in neighbouring countries.

This approach also assumes we cannot compete in the commodity market. Are we truly less efficient than other EU dairy farmers with our climate and size advantages? Are our dairy farmers and processing industry so inefficient that we cannot compete in EU commodity markets, so we need to just produce milk for our domestic market?

Certainly the data we have suggests Britain is efficient at a dairy farm level in EU terms.

But is negativity in the UK industry the biggest factor leading to a lack of confidence?

There are many farmers struggling to make any profit. Equally there are farmers investing heavily, particularly as quota prices are no longer an issue. But there is also anecdotal evidence that some profitable farmers are not investing because of a lack of confidence brought about by messages that the industry cannot move forward unless milk prices rise or milk production falls.

If we want an efficient and productive industry, creating a more positive atmosphere should contribute significantly to that aim.

The key elements to a future profitable industry remain as:

- Efficiency
- Innovation
- Relationships/Contracts

These are the key themes brought out in last year's MDC Contracts report and NFU Vision.

It is highly possible that if the whole supply chain concentrated on improving efficiency and relationships at all levels, it could compete on the commodity market. At the same time it could focus on innovation, and differentiate as many added-value markets as possible. Added-value to better meet consumer needs gives us another point on which to compete.

In this way British dairy farmers could have the best of both worlds: competitive commodity production, but with much of their milk produced on a differentiated basis with those prices driven by supply and demand.

But this approach would need bold leadership, a recognition that productivity and efficiency need to improve year on year, and a commitment to tackling contracts and the efficiency of both processors and farmers.

Appendices

Appendix 1: Commodity prices drive milk prices

In the GB dairy market the lowest value use is commodity milk and therefore it drives the price for all other prices. There are of course premiums available for some other uses, primarily to ensure that milk is allocated to those uses first, and to compensate for the higher level of service needed in those markets. There are of course other factors that have a short term impact, but fundamentally milk prices are driven by commodity markets. Please see this extract from Dairy Supply Chain Margins 2004/5 for more detail.

How farmgate milk prices are set

How farmgate prices are set remains a hotly debated subject within the industry. Whilst most parties now accept that (as set out in Dairy Supply Chain Margins 2003/4) the UK with significant commodity production, has a market broadly based on the price of international traded products like skimmed milk powder (SMP), butter or mild cheddar (and thus CAP Support through EU intervention prices); the consideration of additional factors such as supermarket power or processor competition can often lead to confusion over how prices are influenced by these additional factors.

The diagram on page 19 sets out how farmgate milk prices are set and the 'price setting forces' across the UK's 14bn litre raw milk market – the direction of these forces indicated by the red arrows.

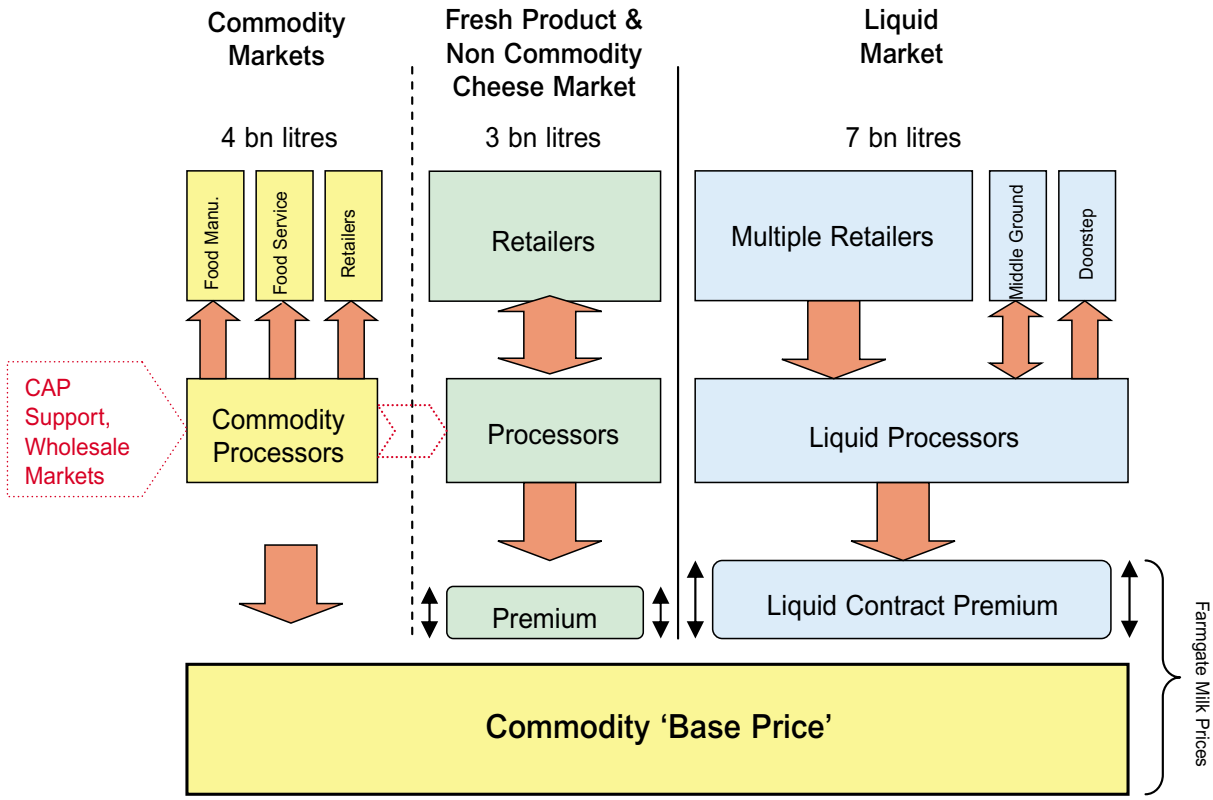
Commodity Base

Commodities set the base of the market, and the homogenous nature of most milk means that most farmgate prices are driven by movements in the commodity market.

As can be seen commodities form the base of the entire market regardless of the milks end use because most milk is currently the same and one tanker load of milk can be replaced by any other tanker load of milk. The commodity 'base price' is the price that commodity manufactures can pay farmers at given wholesale prices (i.e. SMP, butter, Mild Cheddar), after deducting their costs/profit. These wholesale price levels have been traditional set by a combination of EU intervention prices (most often expressed as IMPE[10]) and wholesale markets (expressed as AMPE[11]). Prior to CAP reform IMPE and AMPE were very close, almost identical much of the time. In the future as intervention prices are reduced it is possible that the markets (AMPE) will pay a much greater role in setting this commodity 'base price'. (See Dairy Supply Chain Margins 2003/4 for more on Intervention/CAP dairy sector support)

10 IMPE = Intervention Milk Price Equivalent = Intervention Price of SMP/Butter – Processing Costs – Profit=Value of milk at factory gate.
11 AMPE = Actual Milk Price Equivalent, identical to IMPE but with actual market prices not intervention prices.

Commodity 'Base Price'



In commodity markets both processors and their customers (food manufacturers, the food service industry or retailers) have limited control over prices, in many cases even the largest customers may only be able to obtain relatively small discounts related to the volumes of their purchase. This because commodity markets are characterised by numerous buyers and sellers; – therefore if for example one particular customer is unwilling to pay the 'market price' the seller (in theory) is always able to find an alternative buyer who will[12].

As a result, the price setting forces within the commodity sector (In the UK roughly equal to 4 billion litres of raw milk [29% total market]), lie with the EU commission who set CAP support/intervention prices and the markets themselves, predominantly a result of supply and demand of trade within the UK, EU and the world.

In reality much of the UK's commodity production is now in the hands of the three major cooperatives (Dairy Farmers of Britain, First Milk and Milk Link); as such their farmgate prices combine elements of the commodity market with other areas of their business such as 'value added' products and milk brokering. However indicators such as IMPE, AMPE and MDC's MCVE (milk for cheese value equivalent) all give a guide to this commodity base price in ppl terms at the factory gate (i.e. before transport costs).

12 The level of control between processors and retailers will vary with individual commodity; for example you would expect retailers to have comparatively more power in the mild cheddar market than butter, because the make up a bigger part of the total mild cheddar market.

Non Commodities

Fresh product and non commodity cheese markets form a separate segment of the market, and pay a premium for their raw milk over and above the base commodity price.

An estimated 3bn litres of raw milk (21% total market) goes into the production of fresh products (i.e. yogurts/dairy desserts) or non commodity cheese. Within these markets the power of price setting is generally considered to lie with the retailer who can use their 'buyer power' and control over access to the final consumer to negotiate strongly on price.

However market forces from the commodity market will still play a part in determining prices at a wholesale level (between processor and retailer); as for example, mature or vintage cheddar will often be priced at a premium to mild cheddar.

Price setting forces between processor and farmer remain purely with the processors, whose premium above the 'commodity base price' is used to guarantee the supply they require. The ppl value of this premium varies over time and depends on a number of both short and long term factors (see below) within individual markets.

Liquid Market

The liquid milk market is dominated by the multiple retailers (primarily because of very active competition among processors to supply them), and although they can not push prices below the commodity base, they can affect the size of the premium paid over the commodity base and the retail price of milk.

The liquid milk market which accounts for almost half (7 bn litres) of the UK's total milk production, is dominated by the multiple retailers. These multiple retailers account for 75% of the total retail volume (although there is a sizeable non retail market i.e. for use in hospitals, catering establishments, food service, as an ingredient by food manufacturers, etc.), with the remainder almost equally divided between middle ground (i.e. convenience stores) and the doorstep market.

Within the UK liquid milk market, price setting power/forces predominantly operate from the retailer back through the supply chain to the wholesale price (between retailer and processor) and farmgate price (between processor and farmer); unlike other markets where prices are set by suppliers and transmitted forward along the supply chain[13]. Within this market, multiple retailers 'set' the retail price not by adding their percentage to the wholesale price, but by matching their competitors' prices. This is why most multiple retailers charge identical prices for milk, and this may be part of the reason why retail prices often do not change even when wholesale prices do. The main part of the reason for the retailers dominance in the liquid market is the strong competition between liquid milk processors. Processors are always

13 Independently verified by price transmission work from Portsmouth University – 2005

keen to gain business, particularly as any price cuts can often be passed back to farmers, and supermarkets can use this to their advantage.

Middle ground retail prices operate at a premium to the multiple retailers (consumers paying more for the convenience), although the supermarkets still define the 'benchmark' retail price of milk to which the middle ground adds its premium. However due to high levels of competition between both national and regional processors in middle ground markets, margins received by processors are probably not too different to that of supplying supermarket milk when taking into account additional costs of servicing those markets despite higher wholesale prices. Prices in the doorstep market are predominantly set by the processor, however again there is always be some degree of competition with the other sectors for the final consumer, and as a result although a premium is paid by the consumer it is mostly absorbed by higher costs associated with supplying this market (i.e. transport/labour).

As in the fresh product and non commodity cheese markets, liquid processors historical pay a 'premium' above the commodity 'base price' to guarantee they receive the milk they require on a daily basis. As a result they charge retailers and doorstep consumers a price related to the commodity base price, plus the liquid market premium and their costs/profit.

As within the fresh product and non commodity cheese market, this liquid market premium can vary depending on the short and long term factors (see latter) driving milk prices. Specifically it may be reduced by supermarket buyer power, or by competition amongst processors themselves – however nether have the power to impact on, or reduce the commodity 'base price', only the premium over that base price.

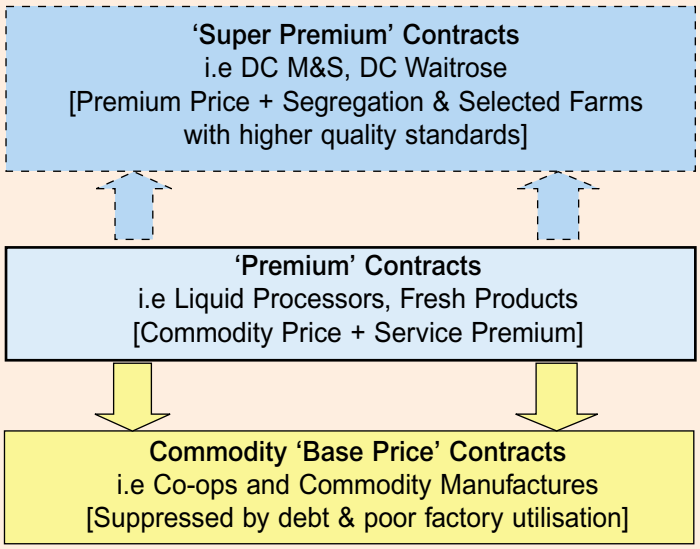
Case Study: How the Difference between the Top and Bottom of Milk Price League Tables Grew from 2ppl to 4ppl

Following the deregulation of the industry, milk processors offered premiums of 1-2ppl above Milk Marque to encourage farmers to join their direct supply groups. During the years that followed, these direct supply networks grew as sterling strengthened and milk prices fell – farmers enticed by the increased milk cheques these direct supply contracts delivered.

In recent times however, league tables have show the difference between the highest and lowest priced contracts growing from 2ppl to over 4ppl. This has been partly due to the new 'super premium' liquid contracts linked to retailers such as Waitrose and M&S (and to a lesser extent ASDA), who have demanded segregated supply chains with milk produced on 'selected' farms. In order to gain this level of service they have raised the premiums they have had to pay above both the commodity base to the market and more everyday premium contracts.

Equally this increased spread in prices has been a result of a falling commodity base price, and increasingly the co-op's who now own much of this commodity processing capacity. In acquiring these facilities over the last few years, these co-ops have taken on significant dept; the costs of servicing and repaying this debt (along with poor unitisation associated with below quota production in the last few years) has reduced the price they are able to pay members.

Difference between Top and Bottom of Milk Price League Tables



Factors Driving the Milk Price

Although commodity prices remain the most significant factor in determining milk prices, other factors will affect the prices farmers receive both in the short and medium/long term.

Short Term:

- **Supply & Demand** – Short term shortages of either milk or dairy products have historically led to higher prices (i.e. higher farmgate milk prices in autumn), and vice versa. You always expect supply and demand to be a short term effect (although very significant in that short term) as a permanent reduction in supply is likely to lead to factory closures, re-establishing a supply and demand balance, and the market returns to its normal relationship with the commodity base. In addition, over supply, resulting in low milk prices tends to lead to supply falling in the long term and again the supply and demand balance is re-established. Although supply and demand will tend to work in this way there will always be the potential for short term anomalies i.e. chronic low milk production could lead to poor utilisation of commodity plants and a reduction in the price for the milk for farmers supplying these processors. Again in this case either production picks up, or the factory is closed, re-establishing normal supply and demand balance in the medium term.
- **Movement of Contracts between Companies** – Large retailers moving their contracts between dairy companies can have a significant impact on milk prices in the short term (as demonstrated within the liquid market during 2004/2005). Companies losing business may be left with poor factory utilisation and high residual costs, equally companies gaining business may have done so at a lower price.

- **Retailers** – Large retailers may encourage suppliers (i.e. of cheese) to promote their product over a short period of time using heavy price discounts (i.e. 50% off, buy one get one free). This can severely affect a processors cashflow and profitability, potentially creating knock on effects for supplier's milk prices.
- **Farmer Direct Action** – Direct action against either processors or retailers has resulted in significant improvements in the prices received by farmers. However the benefits are often only short term as processor competition erodes away these gains. This is particularly true when prices rises go against the underlying commodity price trend (see Case Study Below)

Medium/Long Term:

- **Market Power Imbalances** – Disproportionate strength of one party within a supply chain is likely to lead to lower prices for suppliers, or higher prices to customers in the long term depending on were the power lies.
- **Processor Efficiencies/Margins** – Inefficiencies within the processing industry will undermine farmgate prices in the long term, whilst a highly efficient industry can help guarantee good prices. Equally the margins required by processors to pay shareholders/banks and for plc's to meet profitability and growth demands of the city will affect prices paid to suppliers.
- **Retailers** – Retailers strategic decisions to use a product as a low value commodity (even a loss-leader) or a high value/margin product will effect the demands it makes on the supply chain and ultimately the 'premium' that dairies are able/willing to pay above the commodity base price.
- **CAP Reform** – Changes to the Common Agricultural Policy will not only lead to lower intervention prices and associated support mechanisms for the commodity base price. It is also likely that the introduction of subsidies decoupled from production will affect the overall economics of milk production, with knock on effects for milk pricing.

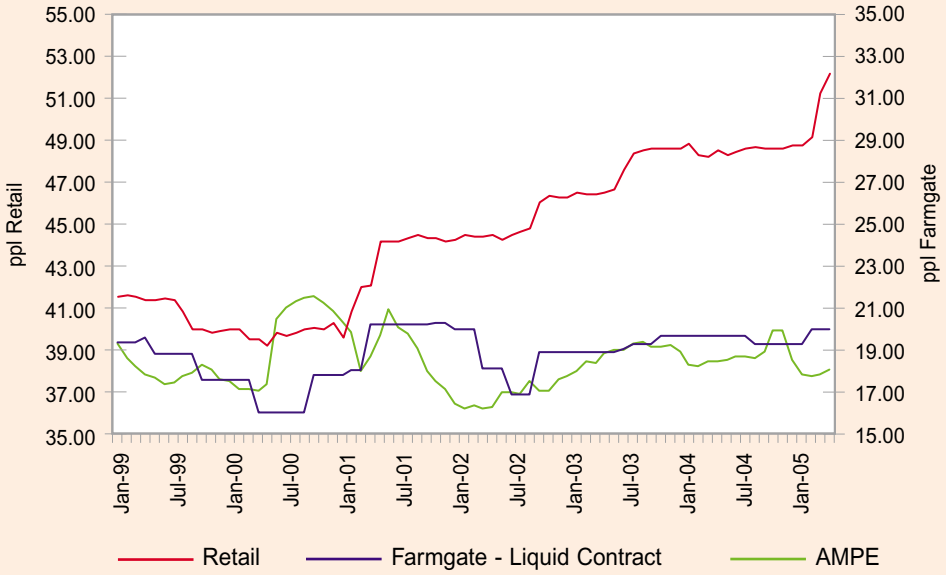
Case Study: Direct Action in the Liquid Milk Market

Failure for farmgate prices to increase in 2000 following rising commodity markets led to direct action by farmers against processors. This resulted in price increases across the supply chain in both September 2000 and April 2001, the net gain in farmgate prices almost equal to the gain in AMPE over the previous 12 months.

Shortly after this commodity prices fell again, and as a result farmgate prices fell in early 2002 by almost as much as they had increased since 2000, although retail prices did not fall. In September 2002 producers again resorted to direct action, this time against both processors and retailers. On this occasion price increases at consumer level were (partly) passed back to farmers within the liquid market. This price increase was supported by rising commodity markets in the following months, following which a second 'retail price initiative' in the liquid market took place in July 2003. This was followed

by a period of slightly weakening and then stable commodity prices, as a result these farmgate price gains (once passed back) suck until almost a year later when competition within the processing sector started to erode them during 2004.

Direct Action



The most recent 'retail price initiative' in March 2005 was justified on the basis of rising costs for both farmer and processor. The price increase secured in the liquid market came at a time when the commodity base to the market was falling (following intervention price cuts as part of CAP reform). These price increases were not maintained in for very long with the major liquid dairies cutting their prices only a few months after the price increase.

Appendix 2: How much commodity milk is produced by the UK?

The amount of milk produced in the UK which is used for the production of commodity products is hard to quantify. The approximate picture for the UK market at present is given below.

Dairy Markets

In defining each of the sectors the question arises – what defines commodity and domestic products?

One view is that commodity products are those sold solely on price as competing products are assumed to be identical, and service and quality are effectively at the same level. It doesn't matter if these products are produced in the UK or not, as replacements can be obtained from other countries. In this respect: butter, milk powders, UHT milk (parts of the market), condensed milk and many forms of cheddar (mild and unbranded mature) could be considered as commodity products.

On the other side is the classification of the domestic market. The domestic market can be defined as the market for products that are protected from imports either by high transport costs or branding (competing on service and/or quality). It is accepted that liquid milk (with the possible exception of UHT) is seen as the domestic market due to the high costs and short shelf life which impede transportation. In addition, branded forms of mature cheddar, speciality cheeses and other value-added products can be included as it is difficult for imports to challenge these as easily as for commodity products.

On this basis, the following figures can be given for the approximate amount of commodity products produced by the UK in 2005. In giving these figures it must be noted that assumptions have made about the percentage split of markets between mild and mature branded cheddar etc.

UK – 2005	UHT	SMP	WMP	Condensed Milk	Cheese*	Total
Million litres	385	520	555	429	2,100	**3,989**

* Cheese includes Mild & Mature non-branded cheddar and Mozzarella

Under the assumption that products such as butter and cream are manufactured as by-products of the products above and liquid milk, the amount of milk going for commodity products stands at approximately 4 billion litres compared to a total milk UK milk production of 13,634 million litres during 2005.

However, this is a rough estimate that does not take several factors into account. There has been a growing movement in the UK to focus on home produce. For example, some supermarkets have looked to only buy cheddar of British origin. Therefore, theoretically, some mild cheddar could be seen as a domestic product and would hence come out of the commodity category. In addition, the milk powder volumes given above have not had speciality products, which may get a higher price as they are sold on quality, removed. Finally some of these products are made as a by-product of added value markets. This occurs on the weekend or seasonally when milk from farms that would normally go in to the domestic market actually goes in to a commodity plant. Therefore this milk can not truly be considered to be commodity milk.

Therefore, it is likely that the volume of commodity product produced is less than the 4 billion litres quoted and could even be less than 3 billion litres. However, there are other issues which could affect this amount in the future. The arrival of Extended Shelf Life (ESL) technology means it could be possible for liquid milk to be transported over longer distances and therefore be exported or imported by the UK in the future (as Wiseman are already doing); however transport costs would continue to be significant.

In conclusion, putting an exact figure on volume of commodity milk produced in the UK varies greatly depending on the assumptions made. A reasonable estimate would be between 2.5 to 4 billion litres depending on the assumptions you wish to make. The corollary is that the domestic market in the UK is between 11,150 – 9,650 million litres.

It is also worth noting that in Great Britain the position is different. Approximately 900 million litres of UK commodity milk is being processed in to commodity products in Northern Ireland.

This reduces the amount of commodity milk in 2005 in GB to between 1.5 to 3 billion litres. The corollary to this is that domestic demand in GB is between 10,300 – 8,800 million litres.

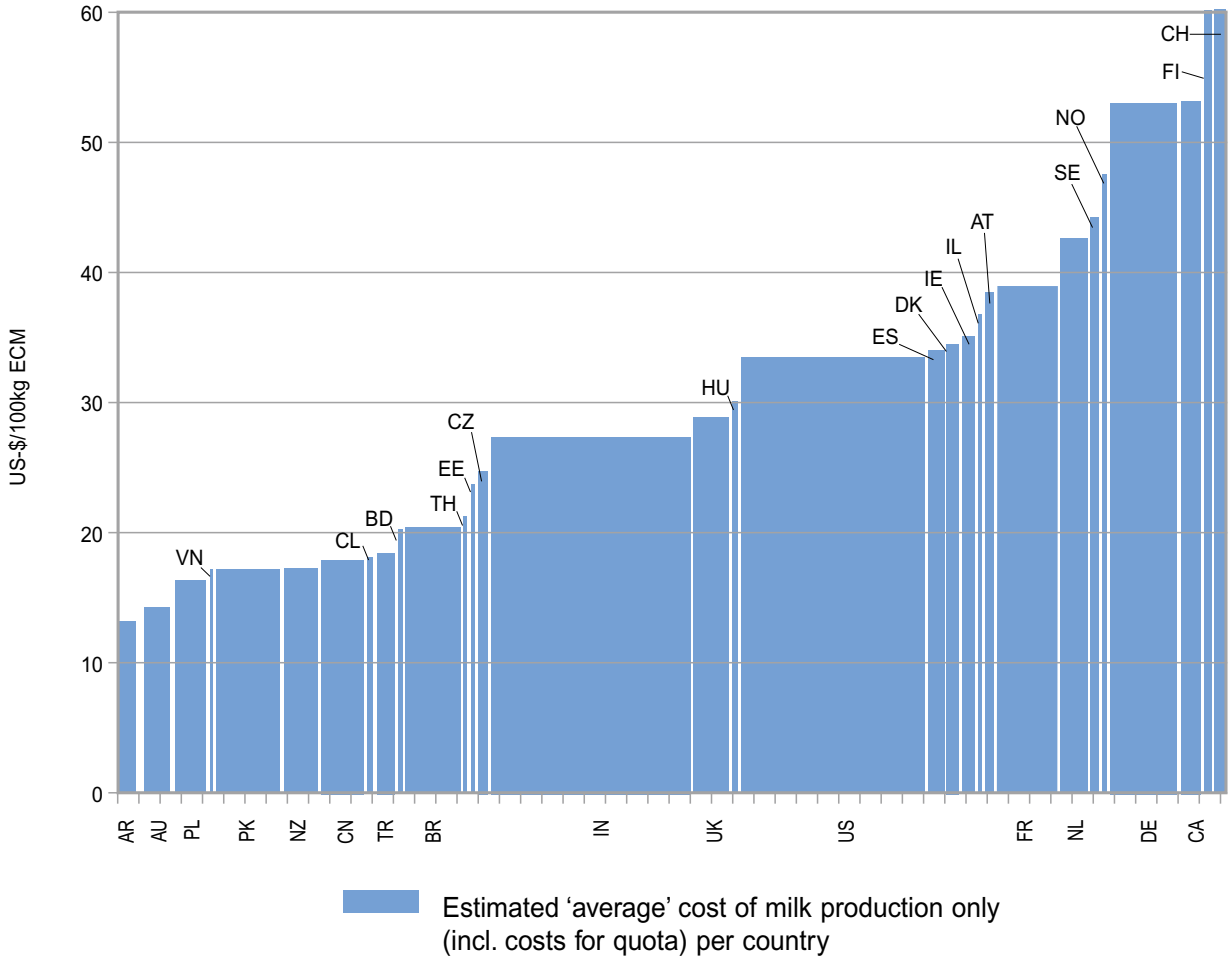
Appendix 3: How efficient are UK farmers?

How efficient are UK dairy farmers? There are various sources of data on this but all suggest the UK has some of the lowest costs of production in the EU. Therefore we should be competitive in the EU commodity market as long as the rest of the supply chain as at least as efficient as EU commodity processors.

One of the simplest indicators of efficiency is that the UK has coped with the lowest milk price in the EU for around ten years. Ireland has also had low prices compared to EU levels. It appears no coincidence that most believe Ireland and the UK are the most efficient milk producers in the EU – they have had to be.

Work carried out by the International Farm Comparison Network suggests the UK is very efficient by EU Standards (see graph below).

Typical Costs of Milk Production – by country – IFCN 2005



Source: IFCN 2005
Please note the height of the column represents the cost of production and the width of the column the amount of milk produced in that country.

This data is derived by members of the network submitting information that can be assessed through various different methods. Primarily, in the EU it is calculated using substantial data sets of physical and financial farm data and should therefore be reasonably accurate.

Data from the European Dairy Farmers organisation (a self-selecting sample of over 260 EU dairy farms[14]) suggests two things; UK farmers are again among the most efficient, and – very importantly – profitability is not linked to milk price. In the EDF farms, the most profitable farmers were not the ones with the highest milk prices, but those with the lowest costs.

Many farmers in countries with higher milk prices, e.g. Italy, made little profit (although equally some made high profits). In fact, in the EDF farms there was a slight correlation between higher profits and lower milk prices, presumably because lower milk prices had forced those farmers to examine the performance of their business in detail.

Of course this relationship can not hold for ever. At some point no more costs can be cut. Even if the lower milk price encouraged farmers to examine their costs, with nothing more to be done, lower milk prices would lead to lower profits. What the EDF results suggest is that in EU countries with higher milk prices, there maybe potential to cut costs. The EDF results also help to demonstrate this fact with the highest profits in countries where prices were moderate, i.e. low enough to stimulate farmers to minimise costs, but high enough to return a good profit. In countries with the lowest prices, profit levels appear to be slightly lower despite low costs.

14 This means that the data and the results from the data should be treated with a degree of caution, particularly with the country comparisons where there are only 5 – 34 farms per country).

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