The European Dairy Industry Post Supply Management

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Take Home Messages

- Since the first of April 2015, the EU milk market is no longer regulated via quota. In Europe, many voices are rising, stating that the abolishment of quota led to the collapse in income dairy farmers currently are facing. This paper analyzes the European milk market situation and shows that the removal of the milk quota is not solely responsible for the dairy crisis; more important is the relation between milk prices and the margins farmers make. With this knowledge, it is possible to look at which measures the EU still has available to manage the dairy sector. The current measures are old fashioned and only are effective after the milk has entered the market; they provide a safety net. New measures like market information systems and stronger producer organizations are needed to ensure dairy farmers have a stronger position in the dairy market.

What is Happening to Milk Prices?

The European Union (EU) removed the milk quotas on 31 March 2015. By Dutch farmers this day was called D-Day or liberation day. The reality of today is, however, that milk prices in the EU, and elsewhere, are low and the dairy sector is under pressure.

Since 1999, LTO Nederland has followed and published paid milk prices at www.milkprices.nl (in Dutch and English). Here you can follow what 17 major European dairies are actually paying. The prices published are calculated prices per kg of standardized milk. The program is carried out by the Dutch branch organization ZuivelNL in cooperation with European Dairy Farmers (EDF).

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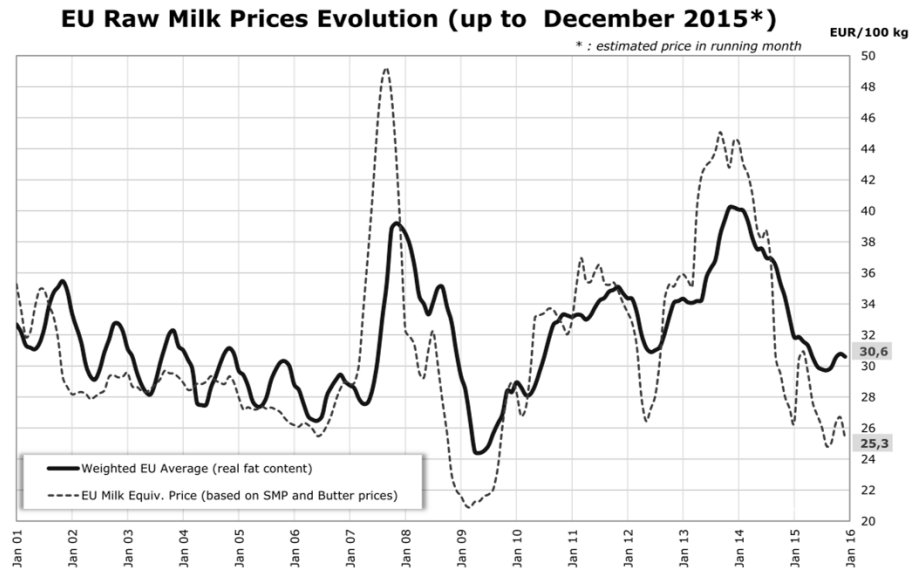

Figure 1. Raw milk prices in the EU (European Commission, 2015)

Professor Alan Matthews (Matthews, Is the producer price of milk too low?, 2015) has provided a good analysis of the dairy market developments. I will use his analysis here in order to describe the situation in the EU dairy market.

The trend in milk prices shown in Figure 1 can be divided into 2 periods: a downward trend in the years to 2007 and an upward trend since then but with great volatility. The peak price was reached in November-December 2013 when the weighted EU average milk price reached €40.21/100 kg. Since then, milk prices have fallen month on month to an estimated €30.03/100 kg in July 2015.

The dotted line shows the estimated milk price that would be returned given the prices actually paid for butter and skim milk powder. These are basically commodity dairy products and would normally be the lowest-value uses for milk; milk used for cheeses and fresh produce should normally return a higher price. We see this in the pre-2007 period where, leaving aside the seasonal fluctuations, the producer price normally exceeded the milk equivalent price.

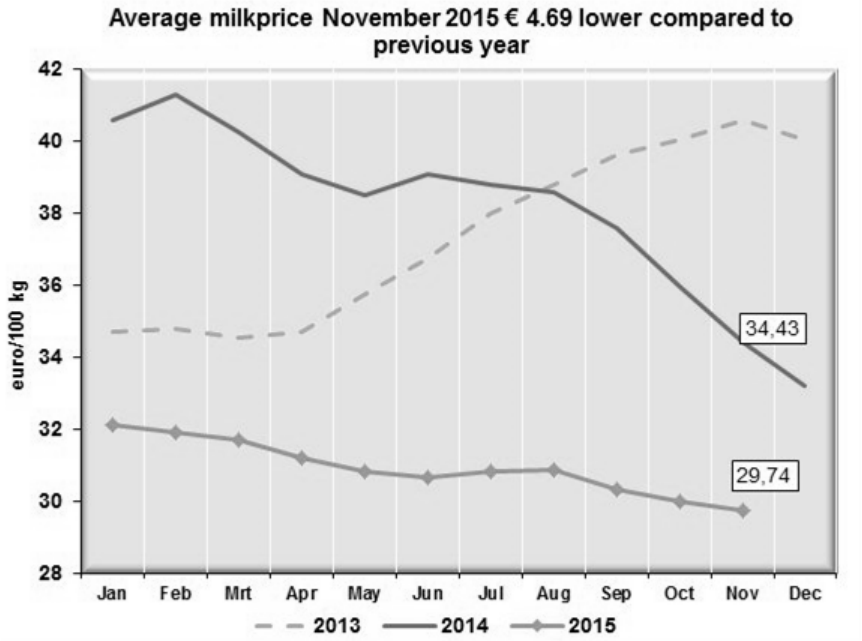

Figure 2. Average milk prices for 2013–2015. (LTO Nederland, 2015)

The post-2007 period shows 2 characteristics. First, the milk equivalent price shows even greater volatility than the producer price, indicating that agents in the dairy supply chain (retailers, processors and purchasers) have acted to smooth out some of the more extreme movements in producer milk prices. But this smoothing action has come at a price, as the traditional 'premium' in the producer price over the milk equivalent price has largely disappeared.

The data for mid-2015 show the milk equivalent price well below the producer price at a level below 30c/liter, significantly lower than the prices in the 2 previous years (see Figure 2). In today's market, much depends on the return of economic growth to China and Brazil, and the price of oil. Even if dairy product prices were to recover in the second half of 2016, there is little expectation that this will be reflected quickly in an increase in milk producer prices.

Voices are rising, stating that the current EU milk market situation is a direct result of abolishing the milk quota. That EU milk production has increased is clear, as shown in Figure 3. Production has increased from 135.2 million tonnes (mt) in 2008 to a forecast 149.4 mt in 2015 and an estimated 150.8 mt in 2016. More recent data from the Milk Market Observatory Dashboard of the European Commission (Milk Market Observatory Dashboard) suggest that the expected increase in milk production in 2015 could be 2.4%, significantly

higher than the 1.1% shown in the December 2015 short-term outlook. The pace of increase has been uneven. Production grew by 2% or more annually in 2010 and 2011, and by 4.7% in 2014, with relatively modest increases in other years.

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
133,3	133,8	135,3	134,2	137,3	140	140,2	140,4	141,8	149,4	150,8
-0,6%	0,4%	1,1%	-0,8%	2,3%	2,0%	0,3%	0,6%	4,7%	1,1%	0,9%

Figure 3. EU 28 – Milk delivered to dairies (mt). (Milk Market Observatory, 2015)

This increase in production is associated with a gradual loosening of milk quotas. Following the decision to abolish the milk quota and the ongoing reforms of the Common Agricultural Policy in 2008, there was strong pressure in the European Agriculture Council to increase production possibilities. As a result, quotas were increased by 2% in April 2008. To ensure a 'soft landing' and to gradually erode the value of quotas to close to zero by 1 April 2015, when quotas were due to expire, quotas were increased by 1% each year from 2009/10 until 2013/14, with an additional measure (fat correction reduction) which further increased production potential.

These 2 developments, a decrease in milk prices and an increase in production possibilities, lead to discussion in Europe on supply management schemes. Was the removal of the quota such a good idea? What kind of measures should be available to farmers to cover for the fall in income they have to deal with? The goal of this paper is therefore two-fold. First, an answer is needed on the question of whether the abolishment of the milk quota solely lead to the fall in milk prices farmers are now suffering from. Second, resulting from the first analysis, a view on the future is needed — what instruments are available to manage the European dairy sector for the coming years?

▪ How Important Has Quota Removal Been to the Increase in EU Milk Production?

There was no increase in quotas in 2014/15 contrary to the 5 previous years when quota was expanded 1% per year. The same year there was no quota increase, milk prices reached record-high levels (see Figure 1), despite the steady expansion of quotas since 2008. Any price-depressing effect from increased EU production was more than compensated by the positive price signals coming from a rapid growth in world market demand.

In 2003, the EU decided to stick to its plan to phase out milk quotas in 2015. This decision was reaffirmed several times, e.g. in 2008 (CAP Health Check), 2012 (CAP Milk Package) and 2014 (CAP Greening). One of the reasons for this decision was that the quotas had become obsolete in a majority of EU member states. As a result, the EU undercut quotas 5–6% in most years. Only in the most competitive member states, like Denmark, Ireland and the Netherlands, quotas were still limiting production. It had become clear that the quotas were no longer serving their purpose. They were basically punishing the best farmers at a time when the EU tried to promote innovation.

Another reason for quota removal was that the 3 other main pillars under the CAP market management — export subsidies, import levies and intervention buying — were gradually removed. Without sufficient instruments to protect the internal EU market, quotas served no other purpose than to give up market share to more competitive exporters like New Zealand. By 2010, New Zealand had taken over Europe's position as the number one dairy exporter.

In 2006, LTO had carried out a survey among its members. In 41 meetings, over 4,000 dairy farmers overwhelmingly (73%) decided that a gradual phasing out of quotas in 2015 would be the best thing to do. Only 11% of them wanted LTO to lobby to maintain quotas, while 16% asked for the removal of quotas as soon as possible. The latest category involved mainly young farmers, who faced enormous investment buying quotas.

Milk prices are an important incentive to alter production. After very resilient milk prices in 2008, prices collapsed to around 25c/l in the middle of 2009 but recovered to a level between 34-35c/l from August 2011 to July 2013. Prices then soared to reach a peak of over 40c/l in the 4 months from November 2013 to February 2014, before dropping again to their current level of around 30c/l. From a farmer's point of view however, the milk price is only part of the story. What ultimately determines trends in dairy farmers' incomes is the movement in the margin for milk, i.e. the difference between revenues and costs.

▪ Margins are More Important Than Prices

The European Commission, DG AGRI, has developed a milk margin tool based on the latest information on the composition of revenues and costs, which is updated using price indices for milk and the relevant inputs, thus giving an up-to-date picture of margin (and thus income) trends. The milk margin is presented in terms of euro per ton of milk produced. Both the gross margin (revenues less operating costs) and the net margin (revenues less operating costs less depreciation and payments to external factors) are calculated.

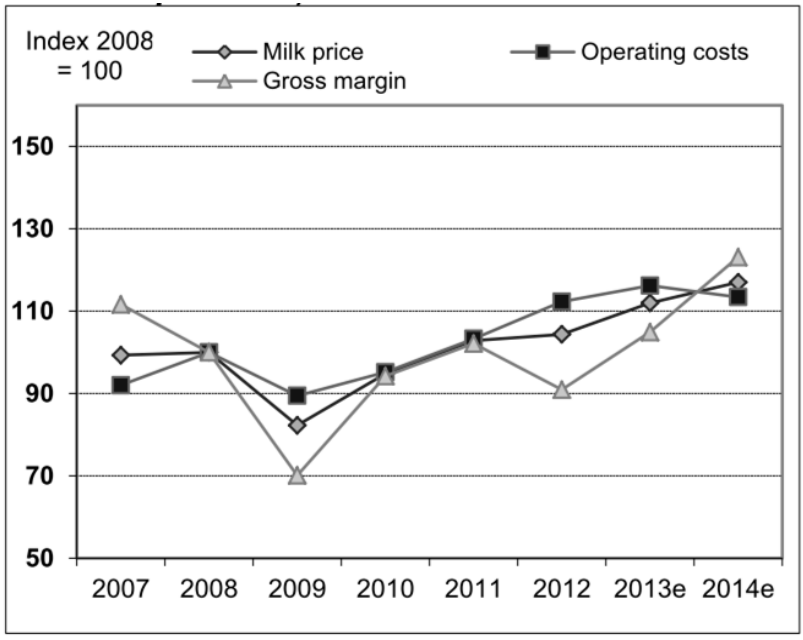

Figure 4. EU milk price, operating costs and margin per tonne from 2007 to 2014. The values for 2013 and 2014 are estimates (European Commission, 2015).

Figure 4 shows the Commission's estimates of how the milk gross margin has developed between 2007 and 2014. It brings out clearly the exceptional nature of the year 2014 when the milk margin was at a record high, not only because of high milk prices but also because costs fell slightly in that year. A second point to underline is that the milk margin fluctuates much more than either milk prices or operating costs alone.

This point is made even clearer if we look at quarterly data for 2013 and 2014 (Figure 5). Note that neither the milk price nor operating costs varied by more than 20% over these 24 months, yet the milk gross margin varied by a factor of more than 100%. This reflects the fact that dairy farmers are highly geared with relatively narrow margins. Even small changes in either milk prices or unit costs are amplified into much larger changes in margins and income.

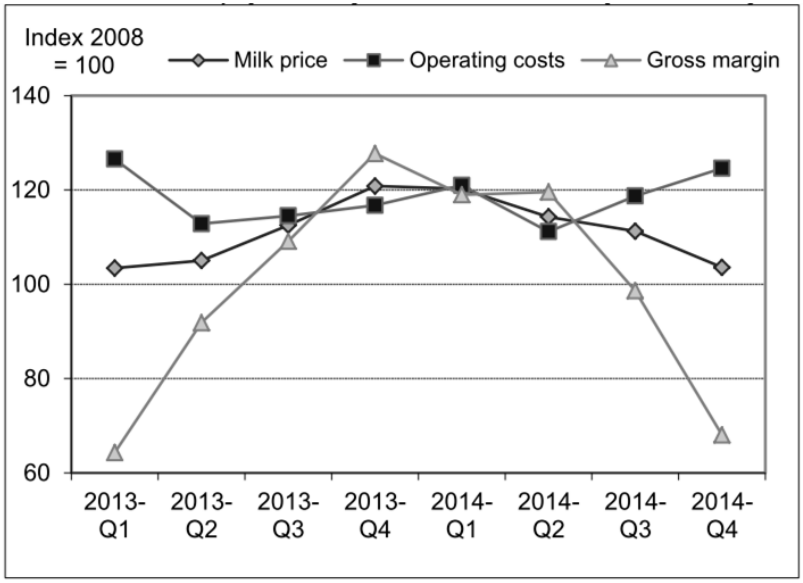

Figure 5. EU milk price, operating costs and margin per tonne; quarterly data 2013-2014 (European Commission, 2015)

▪ Conclusions

A number of factors have come together to result in the collapse of the EU milk producer price from 40c/l in the early months of 2014 to 30c/l. The main factors are external to the EU, such as the Russian import ban, slow growth in Chinese import demand and increased production by significant producers such as the US. But milk production has also grown in the EU in 2015, by 1.8% according to the latest Milk Market Observatory estimate of the European Union.

It is plausible to point to the elimination of milk quotas in April of this year as the reason for the growth in EU milk production in 2015. Indeed, there is some evidence that production has increased much more significantly in the 7 months since quotas were eliminated.

However, we should also remember that quota elimination in 2015 followed a year of record prices and even more record margins in 2014, which led to the single largest year-on-year increase in EU milk deliveries even when quotas were still in place. During 2014, milk deliveries increased on average by 4.8% in the EU. Knowing that the quota ceiling did not increase in the year 2014/15 we can conclude many producers decided to build up their production capacity risking the record-breaking super levy fines that year in anticipation of the end of quotas in April 2015.

The separate effects of quota elimination and the carryover effect of high prices and margins in 2014 on EU milk production growth in 2015 cannot be disentangled. It is safe to conclude that the impact of either one on milk production growth in 2015 would not have been anywhere near as large without the other (Matthews, 2015).

▪ What Instruments are Available to Manage the EU Dairy Sector?

Following from the previous analysis we can conclude that margin and income volatility are not exceptional events but a fact of life for dairy farmers. The industry has been slow to address this fundamental characteristic of dairy farming and to come up with institutional arrangements to help dairy farmers manage this risk. The question, however, is whether sufficient tools are available in the EU to manage this risk. Considering the fact that the EU counts 28 member states, there is no doubt there are many differences within the EU. A general tool like milk quota and intervention prices are not sufficient for all dairy farmers in the EU.

Averages Only Tell Part of the Story

According to EU data (DG Agri, 2014) average operating costs including depreciation and payments to external factors for all EU specialist dairy farms amounted to 31c/liter. Operating costs have probably risen by around 10% since then (DG Agri, EU Milk margin estimate up to 2014, 2015), so the average cost of producing a liter of milk across the EU in 2015 is probably around 34c/liter. With an average milk price below 30c/liter, it is clear many farmers are currently producing milk at a loss[1].

Most important, averages only tell part of the story. Across the EU, milk prices and input costs, and thus margins, differ widely across member states. Figure 6 makes this point using 2011 data for the EU-15 member states. Costs per ton of milk produced vary from a low of €240/t in Ireland to €400/t in Denmark; in Germany and France, which together account for 40% of EU milk

[1] There is uncertainty around this figure because different methods can be used to allocate whole farm costs to the dairy enterprises. Other sources give a lower figure for the average cost of milk production in the EU. Also, the margin calculations do not take into account income from the sale of calves and cull cows, the contribution of other farm enterprises, nor the value of decoupled income payments and other farm payments, so they are only a partial guide to the income position of dairy farms.

production, costs in 2011 were around €330/t. Revenues per ton also vary across countries, being highest in the Nordic countries and Italy.

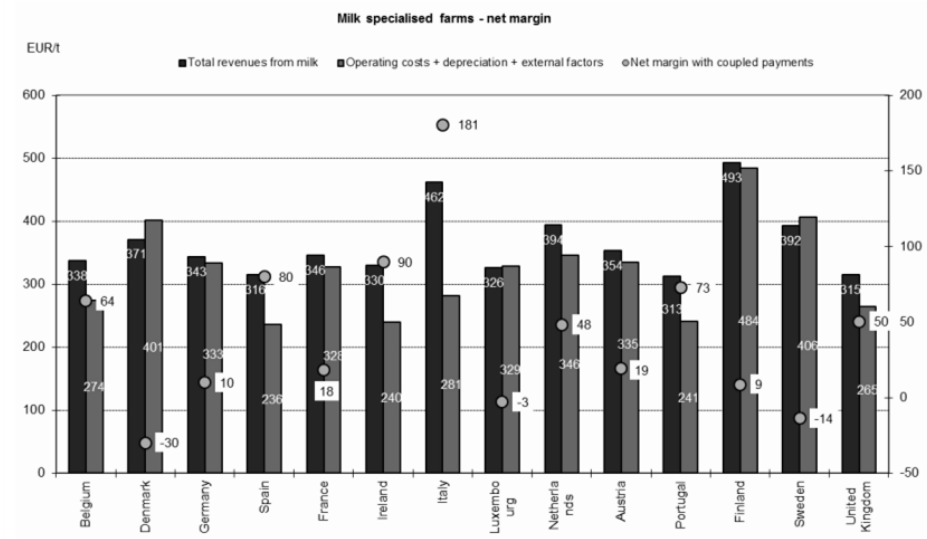

Figure 6. Milk revenues, costs and margins in 14 EU countries in 2011.

Thus it is not surprising to see significant variation also in the net margin figures (the numbers in the small white boxes in the chart). Italy, Ireland, Spain and Portugal head the league with net margins of €181/t, €90/t, €80/t and €73/t, respectively. At the bottom of the league, both Denmark and Sweden had negative net margins, even in an average year for dairying. These figures underline that, even within the EU-15, producers can be profitable at very different price levels; with the elimination of quotas we will expect to see some relocation of milk production from high-cost to low-cost regions.

Perhaps more relevant is to examine differences across individual dairy farms, as is done in Figure 7, which focuses again on dairy farms in the EU-15. This shows, for various years, the gross margins for farms at 6 different points in the distribution: the 5% top-performing farms, the top-performing quarter of farms, the average and the median, the lower-performing quartile of farms and the 5% least-performing farms.

Taking 2008 as an example when the average gross margin was around €130/t, 25% of farms had a gross margin greater than €175/t, while another 25% of farms in the lower quartile had a gross margin of less than about €90/t. The difference here is equivalent to more than 8c/liter. It is these latter farms which, either because of higher costs or because they are getting a

poor return for their milk, are the most vulnerable in the current downturn (DG Agri, 2014).

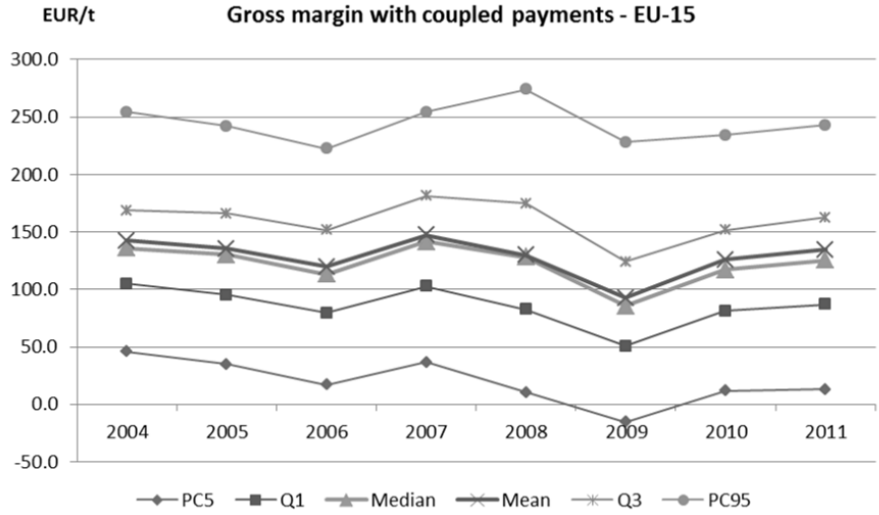

Figure 7: Gross margins for farms at 6 different points in the distribution: the 5% top-performing farms (PC95), the top-performing quarter of farms (Q3), the average (Mean), the median (Median), the lower-performing quartile of farms (Q1) and the 5% least-performing farms (PC5).

As there are great differences in costs of milk production across the EU, it hardly makes sense to talk about 'a' cost to produce a liter of milk. Also, low prices and low margins this year follow a year of record high prices and margins in 2014. It is clear, nonetheless, that many dairy farmers are now producing below the average costs of production. This volatility is a challenge for the dairy industry which so far it has been slow to address. (Matthews, 2015)

Measures Available and Needed

Following the last reform of the CAP, the European Commission still has a number of instruments at its disposal to manage the milk market:

- Private storage support. Currently a number of schemes are in operation. This concerns skimmed milk powder (SMP), butter and cheeses.
- Intervention buying below a price of €1698 per ton of SMP and €2242 per ton of butter. Currently the Commission is buying SMP.

- The Commission may take other emergency measures (e.g. emergency funds) in times of market collapse. Previously the Commission had to ask the farm ministers and the European Parliament for approval, but in the new CAP, the Commission may take measures.
- The Commission has increased its export promotion program and its school milk program. The school milk, school fruit and school vegetable programs have recently been merged into 1 program.

When looking at these measures it becomes clear there is no measure available anymore to have control over the EU milk production, there are only options available to intervene afterwards. This is of course important; in case of extreme market situations the European Commission should have the power to create a safety net. It would, however, be better to prevent a collapse in farmers' income than to cure it at the end.

A logic result of this development is that the (international) market will steer dairy production more and more. This will automatically also lead to a situation in which more volatility will hit the dairy market. Therefore, the removal of the quota will lead to a situation in which dairy farmers are exposed to a significant amount of profit and margin risks. The measures currently available in the EU portfolio are not sufficient enough I think. In a non-quota regulatory framework, policy measures are needed that provide farmers with tools to manage risks in a better way. In particular, producers need to have tools available to reduce the volatility in milk prices and input costs. These tools must be market based. This ensures that the differences between the EU 28 and their dairy sectors are recognized and that farmers can manage risk specifically, i.e., manage risk that is specific to their farm operation. General policy measures will be inefficient and not effective. Having policy measures that stimulate and or complement market-based risk management tools allow producers to adopt that type of risk management strategy that best fits the producer's needs.

In line with what professor Joost Pennings of Wageningen University (Pennings, 2013) proposes, we suggest three major policy measures to form the EU dairy sector after the quota period.

Supply and Demand Balance

To ensure that dairy farmers can adopt to the market, farmers need to have market-based tools available to manage profit risks, thereby lowering their cost of capital and making them more flexible to respond to changing supply and demand conditions. For making these decisions, information is needed about the developments in the dairy market. Those information platforms can

be organized by the sector, supra-national government (EU) or by private markets. LTO Nederland is trying to provide part of this information by maintaining the website milkprices.nl; however, more European wide tools might be needed and the European Commission will need to provide them. (Pennings, 2013)

Organizational Systems

Farmers should organize themselves better, for example, through producer organizations or cooperatives. The differences in the European dairy sector that we currently observe in organizational systems may be reduced in a non-quota regulatory framework as the consolidation of farmers and processors will continue and chains become more international. Producer organizations might focus on managing risk for dairy farmers and look for ways in order to reduce the volatility in margins for farmers (Pennings, 2013).

Policy Measures

Policy measures must stimulate a market-based solution and complement these market-based risk management instruments. The most important task for policy makers will be to provide a road map for dairy farmers to help them manage margin risk and to coordinate private market initiatives to develop these risk management instruments. Only when farmers can become true marketers and risk managers, can there be a viable dairy sector (Pennings, 2013)

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▪ Glossary

EU-15 includes EU Member States in 2003: Belgium, Denmark, Germany, Ireland, Greece, Spain, France, Italy, Luxembourg, the Netherlands, Austria, Portugal, Finland, Sweden and the United Kingdom.

EU-N12 includes the Members States that joined the EU in 2004: the Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovakia, and in 2007: Bulgaria and Romania.

EU-N13 includes EU-N12 plus Croatia, which joined the EU the 1 st July 2013.

EU-27 includes EU-15 plus EU-N12, i.e. the European Union between 2007 and 2013.

EU-28 includes EU-15 plus EU-N13, i.e. the European Union since 2013.