Since the financial and food price crises of 2007, market instability has been a topic of major concern to agricultural economists and policy professionals. This volume provides an overview of the key issues surrounding food prices volatility, focusing primarily on drivers, long-term implications of volatility and its impacts on food chains and consumers. The book explores which factors and drivers are volatility-increasing and which others are price level-increasing, and whether these two distinctive effects can be identified and measured. It considers the extent to which increasing instability affects agents in the value chain, as well as the actual impacts on the most vulnerable households in the EU and in selected developing countries. It also analyses which policies are more effective to avert and mitigate the effects of instability.

Developed from the work of the European-based ULYSSES project, the book synthesises the most recent literature on the topic and presents the views of practitioners, businesses, NGOs and farmers’ organisations. It draws policy responses and recommendations for policy makers at both European and international levels.

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Agricultural Markets Instability
Revisiting the recent food crises
Chapter 11
Milk and dairy products’ price volatility
EU dairy cooperatives attitude towards volatility

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Recommended citation:

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1 Introduction

For a number of years now, price volatility has been on the political agenda. The reason is that in general a more stable price environment is judged as beneficial to most actors in the chain. The primary sector in particular is generally seen as a victim of the currently perceived excessive price volatility because farmers’ incomes are immediately affected. Regular buyers and sellers of agricultural products or processed products should also favour a stable environment in which the partners can prepare budgets for the period to come.

There is a lot of discussion on volatility without exactly knowing what is meant by the term. Accordingly, much more attention is paid to price volatility in years with poor market circumstances than in the years with high prices. Volatility is then wrongly seen as a synonym for low prices. Some governments also adopt measures aiming to reduce volatility, without considering the negative effects this could have on their own economy or economies of other countries.

Therefore, measures that aim to reduce volatility should be taken with some care. Governments should try to understand the price-forming mechanisms, which can lead to volatility. This is one of the aims of a project like ULYSSES: it can be of assistance and improve transparency concerning the major underlying market mechanisms.

2 Some historical background

To prevent the negative consequences of price volatility, or at least to mitigate them, governments have tried to put a specific set of measures in place. Broadly speaking, a division can be made between ex-ante and ex-post measures in relation to price volatility: efforts being made to prevent volatility (ex ante) or to offset most of its negative consequences once it has occurred (ex post).

A clear example of an ex-ante policy was the EU market regulatory framework. Since the 1960s, the EU dairy sector was well protected against volatility by the measures of the EU common market policy. The floor price was determined by the intervention price of two base products: butter and skimmed
milk powder. The intervention price guaranteed a level of prices that was very close to the actual market prices.

In support of the market price level, a whole variety of market support measures were possible, such as the feed programs for calf feed, butter support programs, and casein support. Exports were only possible by means of export restitutions. This resulted in a situation with limited price volatility for dairy products inside the EU. In fact, (some) volatility was by means of export refunds transmitted to foreign markets. The back side of this artificial price setting was that production surged enormously and enforced the introduction of a dairy production quota in 1983. In the 1980s, during the Uruguay round trade negotiations, export support mechanisms, and hence the refunds of the EU, were at the midst of the discussions. They resulted in an agreement by which export refunds were very much limited. The negotiations showed the vulnerability of the market regulatory system of the EU in terms of trade policy.

3 New market policy of the EU

Internal and external pressures paved the way for more reforms in the EU. In short, the following major changes characterized the EU market regulatory framework following the Luxemburg Agreements in 2003:

- The abandoning of the quota system on April 1, 2015
- Intervention price reductions in the years 2004–2007:
  - Price reductions of butter: three years each with 7% and one year 4%
  - Price reduction of skimmed milk powder: three years with 5%
- Together with the price reduction, the EU introduced milk premiums (€3.55/100 kg) as a compensation for the reform.

In 2008, the Health Check of the CAP introduced a policy of annual quota increases with the aim of having a soft landing towards the end of the quota regime in 2015.

3.1 Dairy package

After the large fluctuations of dairy market prices, the EU Commission came up with the so-called “dairy package” proposals, which were concluded in 2012. The package’s major aim was to improve the contractual relations in the sector. In the dairy sector, producer organizations (POs) and interbranch organizations (IBOs) can be created. The key role a PO should play is in improving the bargaining power of the dairy producers. In most parts of the dairy sector, keeping in mind the prominent position of dairy cooperatives, this phenomenon is not likely to have a major impact. In fact, due to the unique
relation between the owners of the cooperative who deliver the milk and the cooperative as a processor, there is no need for a PO.

Also, the milk package provides the Member State the possibility to make contracts between milk producers and dairies obligatory. A contract should specify price, volume, and duration. A contract should give the dairy farmer more certainty regarding the price to be expected and, hence, reduce the risks of price volatility. However, at this point, it is too soon to judge the overall consequences of the milk package.

### 3.2 Development of dairy prices in the EU since 2000

As stated earlier, EU intervention prices were reduced in three stages. In theory, in a situation of ongoing intervention, this would be equal to a milk price reduction of 20%. When we calculate the proceeds of milk based on the assumption that the total quantity of milk delivered is processed into butter and skimmed milk powder, a calculated milk price can be derived thereof. When the milk is processed into these two products and sold into intervention, we call this intervention equivalent the base price.

Figure 11.1 gives a clear indication of the variation between the two. At the beginning of this century, the market price closely followed the intervention equivalent. Later on, a gap developed between the two. Next to the increasing gap, one can clearly notice the increasing volatility of prices. The lower intervention level coincided clearly with an increase of the spread, not only at the downside, but also in upward price movements.

In the present EU market regulatory framework, a clear exception has been made for crisis situations with real market disturbances. Exceptionally, the European Commission might intervene in those cases. It is clear that, unlike

![Figure 11.1 Base price (intervention) development and market price.](Zuivel.nl)
what some expected, the market took its own direction despite the 20% reduction in calculated milk price.

Figures 11.2 and 11.3 illustrate the long-term development of the quotations for the intervention products in the EU. It seems that the much lower intervention levels (“safety net”) increased price volatility in the EU of butter and skim milk powder (SMP). It is clear that initial reductions of the intervention price also drove market prices down. In 2007, a sharp surge in butter
prices to unprecedented levels was followed by a period of market turmoil. After that, we saw in general a price level above historical levels but with much higher spikes and lows.

When we compare volatility in the EU with respect to dairy prices paid in dairy regions around the world, we see in general that fluctuations in New Zealand and the United States were already existent before 2007–2008. But, EU fluctuations have not (yet) reached the level of the former two.

4 Possible policy measures

4.1 Ex-ante measures and dairy markets outlook

Recent years have shown that the possibilities for applying interventionist market measures (ex ante) are diminished. In this respect, it is even more important to understand the price development through the whole chain. EU working groups have been established to improve the understanding of the underlying mechanisms. It is a difficult task on which the work in the ULYSSES project also can be of help.

Further reforms and the growing international dependency effectively mean that possibilities for applying a set of national measures to set prices (ex-ante measures) are even more limited. This is also of major importance for the EU dairy industry, which is becoming increasingly active in international markets. To illustrate this, it is important to note that about 10% of the EU milk production is exported in the form of various products and it is likely to grow towards 2020. The export performance can be achieved thanks to the

Figure 11.4 Comparison between EU average milk prices in € per 100 kg standard milk with New Zealand (Fonterra NZD/milk solids price) and US Class III price. Source: Zuivel.nl.
growing appetite worldwide for dairy products. For instance, OECD/FAO expects world import demand of butter (+17.2%), cheese (+20.1%), skimmed milk powder (20.9%), and whole milk powder (11.3%) to increase significantly in the years 2013–2022.

Governmental measures in this sense should contribute to these ambitions and not hurt the position of the dairy sector. Therefore, a return to supply management, the old EU quota system, as some advocate, is rejected by the EU dairy industry. The EDA (European Dairy Association) said in a recent statement¹ the following: “European Union policy for the dairy sector has been moving towards greater market orientation and this will culminate in the end of the public milk volume management in 2015. The abolition of quotas will allow the sector to realise its competitive potential and participate fully in the growth in world demand for dairy. The EU dairy sector, the milk producers and their milk processing companies, has been planning and investing on the basis of the abolition of quotas for the last few years. The process of reform that started in 2003 must not be put into reverse.”

4.2 Need to differentiate between normal price spikes and extreme volatility: ex-post measures

As was expressed several times, the aim is to mitigate the consequences of extreme volatility. What should be interpreted as extreme? What is normal and part of the agricultural production cycle? Furthermore, which part of price movements is connected to currency variations and which to other commodities that sometimes form inputs to the dairy sector?

For farmers in the EU to become more resilient, ex-post measures will become more important for preventing the negative consequences of “normal” volatility. In the US, a lot of experience has been gained with alternatives for the market-based price support.

These measures include:

- Voluntary insurance schemes (often subsidized)
- Fiscal measures in order to build reserves
- Risk management schemes such as futures/options

Other forms of proposed policies are to protect margins instead of prices. At first sight, this seems interesting. But, at the EU level these measures will be difficult to execute, acknowledging the large differences in cost prices. In the US, the new Farm Bill introduced a dairy margin protection program. But, in the agricultural area, the US is much more uniform than the EU, and given the administrative burden, it is questionable whether this will provide a feasible instrument for the EU dairy sector.

Still, governments apply measures without clearly considering the adverse negative trade consequences. An important example of these measures is the
export restrictions by applying taxes. Also, other trade policy measures have contributed to volatility, such as sanitary restrictions or even export food bans. In this respect, scientific support and advice is needed to prevent creating measures with adverse economic effects.

5 Answer of the industry on how to deal with the changing environment

There is no single answer for the whole dairy industry as such. The EU dairy industry is luckily very diversified, and this is also part of its power. In the northern part of the EU, large cooperatives determine the landscape; in the southern part, the picture is more diversified.

Some dairy processors have a long-standing position in catering to growing markets; others focus on niches at home or specialize in regional specialities.

Speaking for the dairy processing industry as a whole, I can say there is a huge trust in the products produced. The markets are there and, also for the far future, the EU dairy industry should have the ambition to fulfil growing needs for nutritional dairy products inside the EU, but increasingly outside the EU as well. This regional diversification might also prove to be one of the best measures to offset the effects of price volatility. Others might opt for a route of specialization of products, which are less dependent on the price spikes of commodities.

Looking at the input side, there are increasing efforts to make a more proper estimation of the milk we can expect and which has to be processed and eventually sold into the market. Unlike the cereal sector, the dairy sector in general was not until recently confronted with much price volatility. Additionally, the experience with instruments, which hedge those risks (futures), is limited. Despite some initiatives, at the moment there is no massive usage of futures markets in the EU as a means to offset the negative effects of extreme price volatility. Inevitably, there will be a learning curve, and in comparison with a country like the US, the EU is in a stage of infancy. Another reason for the lack of success until now might be that timely official statistics are lacking. On top of that, it is likely that the characteristics of dairy products, even the ones sometimes considered as “commodities”, are much more diversified than the general staple products markets. In combination with the options mentioned, this might also be part of the answer for the EU dairy industry.

A particular phenomenon of the EU dairy sector is the strong presence of cooperatives. In France, about 50% of the milk is processed by cooperatives; in Germany it is more than 60%; in countries like Austria, Ireland, and the Netherlands it is more than 80%. FrieslandCampina, based in the Netherlands, is one the largest cooperatives in the world and will continue to build on the strength of the cooperative and use the strength of the chain. Milk production is not seen merely as providing input for processing, but should be an integral part of the chain. Through this connection within the chain, the partners in the chain are deemed to be less sensitive to general market volatility.
We expect a regulatory and economic environment in which we, as an industry, and to the benefit of our members, employees, consumers, and society, can prosper. FrieslandCampina is an example of a global operating dairy company which wishes to provide people with essential nutrients from dairy products during all phases of their lives. We nourish millions of people every day with a diversified set of products in European countries, but also in Asia and Africa. This diversification also makes the company somewhat less vulnerable to sudden price shocks. Normal volatility in markets and prices will be part of the game as already explained. This does not exclude that for particular emergency situations a sort of safety net, as already foreseen in the new set of rules of the common agricultural policy, can provide a floor for farmers’ income.

Note
1 “EDA policy recommendations for the EU dairy market and its management”, Brussels, January 2015.