

LTO International comparison of producer prices for milk

extended version, August 2018

2017

*prezzi di latte • melkprijzen • prix du lait • molkeprizen
milch preise • milk prices • maelke priser • maidon hinnat*

COLOPHON

Publisher

LTO Nederland
Vakgroep Melkveehouderij
Bezuidenhoutseweg 105-113
2594 AC Den Haag
The Netherlands
www.lto.nl

August 2018

In co-operation with

European Dairy Farmers
Grüner Kamp 19-21
24768 Rendsburg
Germany
telephone + 49 (0) 4331 4360190
e-mail judit.kuehl@dairyfarmer.net
www.dairyfarmer.net

Carried out by

ZuivelNL
P.O. Box 93453
2509 AL Den Haag
The Netherlands
telephone +31 (0) 70 2191600
e-mail koops@zuivelnl.org
www.zuivelnl.org

Download

The report can be downloaded at
www.milkprices.nl (in English and in Dutch)

© Copying the text is authorized subject to
acknowledgement of source as follows:
LTO International Milk Price Comparison,
www.milkprices.nl

Table of contents

Foreword	3
1. Introduction and notes for readers	4
1.1 Introduction	4
1.2 Notes for readers	4
2. Milk prices in 2017	5
2.1 Milk price comparison	5
2.2 Milk price developments outside the European Union.....	7
2.3 Dairy market 2017.....	9
3. Milk price and market developments in the first half of 2018.....	10
4. Additional information of milk prices per company	11
5. Price volatility	14
Annex I Milk prices 2010 to 2017	17
Annex II Average currency exchange rates 2017 and 2016	17
Annex III Milk prices 2017 and 2016 1,000,000 kg standard milk (new)	18
Annex IV Milk prices 2017 and 2016 1,500,000 kg standard milk (new)	19

Foreword

It would be true to say that 2017 was a turbulent year for Dutch dairy farming. This was prompted not so much by the milk price, which was strong until late in the year and was welcomed by farmers. The strong price level was important for a number of reasons, the most importance of which was the possibility to plug the financial gap created by the low milk price in 2016. In the Netherlands the phosphate reduction plan, which forced the industry to significantly reduce the size of its dairy herds, had a huge impact on farming families too. However, we in the dairy industry were ultimately able to take responsibility for the role we were playing in phosphate production and had reduced phosphate levels to below the phosphate ceiling by the end of 2017. This was a huge achievement and we can already see that our efforts were not in vain; a new derogation from the EU Nitrates Directive has been granted for a new period starting in 2018.

When considering the milk price comparison, it is striking that Dutch dairy companies have performed well in the year behind us. Investments in added value have resulted in a better milk price, which is set to continue due to a greater variety of milk flows, fed by social and consumer needs and environmental requirements. Our Dutch sustainability programs put us in a position to meet these needs and requirements. As such, we should be well placed to reward farmers for their efforts in the field of sustainability.

Another striking development in the composition of the milk price is the value of butter (butterfat). The image of butter is very different to what it has been in the past. Where first considered unhealthy because of its supposed link with cardiovascular diseases, butter is now seen as a valuable and healthy food. This has had a hugely positive influence on pricing.

A new legislation for phosphate production came into force for dairy farming in the Netherlands on January 1, 2018. The so called Phosphate Act introduces a phosphate right system for dairy cattle in order to control the production of animal manure. These rights ensure per individual farm a defined maximum of amount for phosphate production. Although all dairy farms fall under the Act, its impact can vary hugely from one enterprise to another. The introduction of this Act has been responsible for a great deal of tension among many farmers and their families. Besides influencing manure production, it also has an indirect effect on the milk volume. A worrying development is the cost price increase ensuing from the purchase of phosphate rights; this is not good for Dutch competitiveness.

Another phenomenon observed is the trend for dairy companies to start to steer supply on the basis of market demand. For example Dutch coop FrieslandCampina made proposals to restrict milk deliveries growth of their supplying members based on an expected dairy market growth percentage. Is this the start of a new era?

Wil Meulenbroeks
Chairman Dairy Committee Dutch Federation of Agriculture and Horticulture LTO Nederland

1. Introduction and notes for readers

1.1 Introduction

The LTO International Milk Price Comparison is published every month at the request of the Dairy Committee of the Dutch Federation of Agriculture and Horticulture (LTO Nederland) at www.milkprices.nl. This is a comparison of prices paid for milk by large European companies and is done in co-operation with European Dairy Farmers (EDF). EDF collects the milk price data and makes them available. Calculations are undertaken by ZuivelNL.

The method chosen for the calculations shows the price a dairy farmer would receive if milk of specific (standard) composition, quality and quantity were delivered to the different dairy companies.

In this report the following characteristics of the standard milk are taken as a basis:

- 4.2% fat;
 - 3.4% protein;
 - Total bacterial count 24,999 per ml;
 - Somatic cell count 249,999 per ml;
 - Annual delivery 500,000 kg.
- See annex III and IV for milk prices 2017 and 2016 for 1,000,000 and 1,500,000 kg standard milk (new)

The prices are exclusive of VAT, ex-farm and inclusive of supplementary payments.

It must be emphasized that this is no comparison of the average milk prices paid. The average price paid by a dairy company for milk is dependent on the actual composition, quality, quantity et cetera of the milk delivered. Furthermore, no conclusions can be drawn about the performance of dairy companies on the basis of the milk prices paid. Many more factors play a role in assessing performance.

After each calendar year has ended, a report is presented with the calculated milk prices paid for that year. This annual report appears when the supplementary payments of the preceding calendar/ financial year are known and can, thus, be incorporated into the milk prices. The amount of supplementary payments are not corrected for the date of payment.

The monthly milk prices are weighted on the basis of national monthly milk deliveries (source: ZuivelNL). The weighting of the 2017 monthly milk prices is based on the average of the monthly deliveries in 2015 and 2016, while 2016 is based on milk deliveries in 2014 and 2015.

The present publication comprises the milk prices calculated for the calendar year 2017.

1.2 Notes for readers

Chapter 2 features the calculated milk prices for 2017 (paragraph 2.1), followed by the milk price developments outside the EU (2.2) and the dairy market in 2017 (2.3).

In chapter 3 trends of milk prices and dairy markets in the first half of 2018 are described.

In chapter 4 additional information about the calculated milk prices per company is given.

In chapter 5 price volatile is analyzed.

The appendices give an overview of milk prices per dairy company from 2010 to 2017 (Annex I), the average currency exchange rates in 2017 and 2016 (Annex II), milk prices 2017 and 2016 for 1,000,000 (Annex III) and 1,500,000 kg standard milk (Annex IV).

2. Milk prices in 2017

2.1 Milk price comparison

After the poor milk price years in 2015 and 2016 (the latter was particularly poor), milk prices increased significantly in 2017. The average milk price paid by EU dairy companies increased from € 28.31 in 2016 to € 35.24 per 100 kg in 2017. This equates to an increase of € 6.93 (24.5%). The recovery of milk prices after they bottomed out in the summer of 2016 continued in 2017. Milk prices increased in the second half of 2017 in particular.

As such, the milk price for 2017 takes third place, behind the record years recorded in 2013 and 2014.

Table 1. Milk prices 2017 and 2016

In € per 100 kg of standard milk with 4.2% fat, 3.4% protein, 500,000 kg per year¹,
tbc 24,999 and scc 249,999 per ml (excluding VAT and including supplementary payments)

Company	Country	2017 (€)		2016 (€)		2017-2016 (€)	2017/2016 (%)	National currency
Granarolo (Noord)	IT	39.69	1	36.83	1	2.86	7.8%	
FrieslandCampina	NL	38.51	2	30.80	4	7.71	25.0%	
Royal A-ware	NL	36.78	3	26.02		10.76	41.3%	
Valio	FI	36.64	4	35.21	2	1.43	4.1%	
Arla Foods DK	DK	36.29	5	28.28	8	8.00	28.3%	28.2%
DMK	DE	35.46	6	24.80	13	10.66	43.0%	
Milcobel	BE	35.32	7	26.88	9	8.44	31.4%	
Müller(Leppersdorf)	DE	35.26	8	26.10	11	9.15	35.1%	
Danone (Pas de Calais)	FR	34.46	9	31.57	3	2.89	9.2%	
Sodiaal (Pas de Calais)	FR	34.33	10	30.48	5	3.85	12.6%	
Kerry Agribusiness	IE	34.27	11	24.84	12	9.44	38.0%	
Glanbia	IE	34.27	12	22.99	16	11.29	49.1%	
Dairygold	IE	34.22	13	24.63	14	9.58	38.9%	
Savencia (Basse Normandie)	FR	33.92	14	29.78	6	4.14	13.9%	
Hochwald Milch eG	DE	33.88	15	25.87		8.01	31.0%	
Lactalis (Pays de la Loire)	FR	33.40	16	29.45	7	3.95	13.4%	
Dairy Crest (Davidstow)	UK	32.29	17	26.67	10	5.62	21.1%	28.1%
Average milk price		35.24		28.31		6.93	24.5%	
Emmi	CH	49.06		49.84		-0.78	-1.6%	0.4%
Fonterra	NZ	32.02		27.62		4.40	15.9%	15.9%
USA class III	US	36.22		33.99		2.22	6.5%	8.6%

Notes:

A number of changes have happened since the previous publication. Because of the merger with DMK milk prices of DOC Cheese have been replaced by Royal A-ware and milk prices of Hochwald eG are included in the average milk price. Given these changes, the average milk price for 2016 is not the same as the average indicated in the previous publication.

Just as last year, the milk price calculated by the Italian **Granarolo** company puts it in first place. However, it must also be observed that provisional milk prices have been calculated since October 2017 due to a lack of sufficient data.

The high quotations of the Dutch dairy companies **FrieslandCampina** (second) and newcomer **Royal A-ware** (third) are striking.

Although the high position achieved by FrieslandCampina is not special, the same is not true of the milk price difference between it and the other companies. In 2017, the milk price calculated by

¹ See annex III and IV for milk prices 2017 and 2016 for 1,000,000 kg and 1,500,000 kg per year.

FrieslandCampina was € 3.27 above the average milk price. A difference of this magnitude has never been recorded before.

The milk price calculated by Royal A-ware increased significantly in 2017 (+ 41.3%).

The milk price calculated by the Finnish **Valio** company - based on the milk price paid by one of the member cooperatives - increased by just 4.1% in 2017 in comparison with last year, because of which the situation applicable in previous years - Valio and Granarolo paid a price well in excess of the other European dairy companies - was not the case in 2017. The profitability of Valio and, as such, payments to the member cooperatives, suffered from the very low prices for milk powder in 2017. Valio processes 35%-40% of the farm milk supplied into butter and skimmed milk powder.

The milk price calculated by **Arla** increased slightly more (28.2%) than average (24.5%). The level of the milk price paid out, plus the profit achieved (performance price), is in line with its own target, being 3%-5% higher than the performance prices of a number of other north-west European dairy companies.

After Glanbia, the milk price for **DMK** has seen the biggest relative increase: 43%. This puts it above the average calculated by all of the various companies. It should also be observed that milk prices calculated by the other German companies have increased more than average too. For example, **Müller** by 35.1% and **Hochwald eG** by 31.0%. The milk price for Hochwald eG has not been finalized yet, as the level of the supplementary payment is not known at the present time. The latter applies for the Belgian **Milcobel** too.

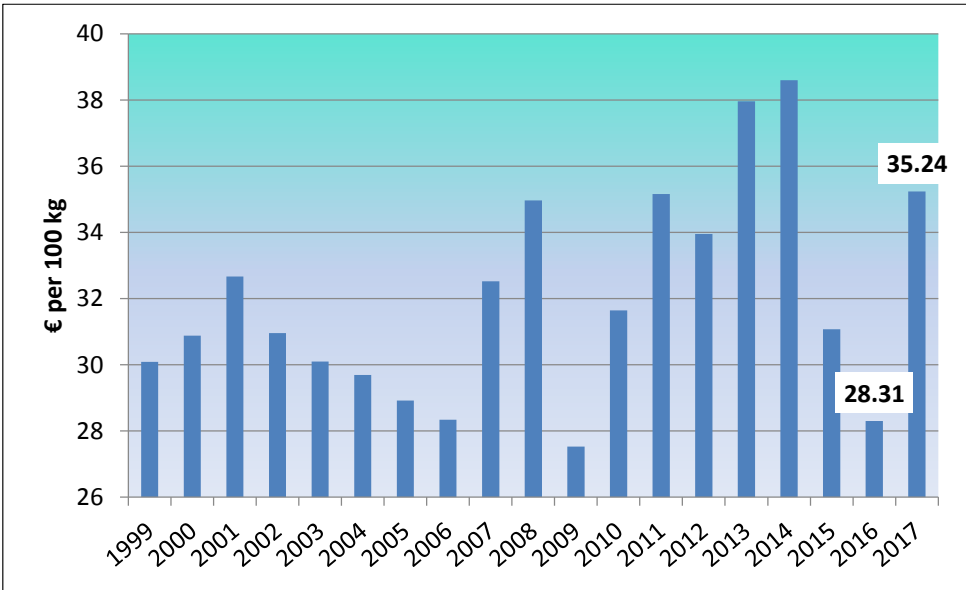
Milk prices calculated by the **French** dairy companies are below average, which corresponds with the situation evident in previous years. In good milk price years, French milk prices are lower than average, while the opposite is the case in relatively poor years (see the prices in 2016, for example). This was analyzed in the previous publication: The 2016 LTO International Milk Price Comparison.

Although **Irish** milk prices have increased most (38%-49%), they are below average, just as they have been in other years.

The milk price calculated by the British **Dairy Crest** company is the lowest, due in part to the decrease in the value of the British pound in comparison with the euro. Without this devaluation, the milk price calculated by Dairy Crest would have been approximately € 2.00 higher.

Figure 1 shows that 2017 was a relatively good milk price year. The average milk price has only been higher in 2013 and 2014.

Figure 1. Average milk prices from 1999 to 2017



2.2 Milk price developments outside the European Union

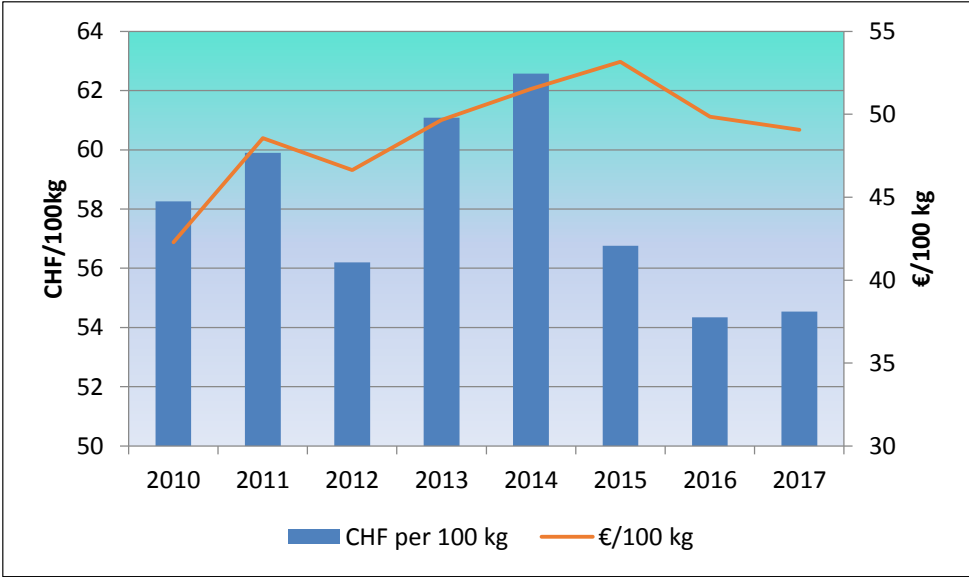
Milk price increases outside the European Union were clearly lower (New Zealand Fonterra + 15.2%, the United States +6.5%) or barely evident at all (Swiss Emmi).

Emmi

The milk price calculated by the Swiss Emmi company is approximately the same as last year. Expressed in euro, the milk price fell by 1.6% to € 49.06 per 100 kg, but a small increase was the case in Swiss Francs.

The milk price calculated has fallen because the milk price for 2016 includes a converted supplementary payment of € 1.81 per 100 kg and no supplementary payment has been included in the milk price for 2017 yet. The supplementary payment for the milk supplied in 2016 was paid out in December 2017. Assuming that, just as in previous years, a supplementary payment will be made for the milk supplied in 2017, the final milk price paid by Emmi will be higher than the milk price in 2016.

Figure 2. Milk prices Emmi 2010 until 2017
(CHF and € per 100 kg standard milk)



Fonterra

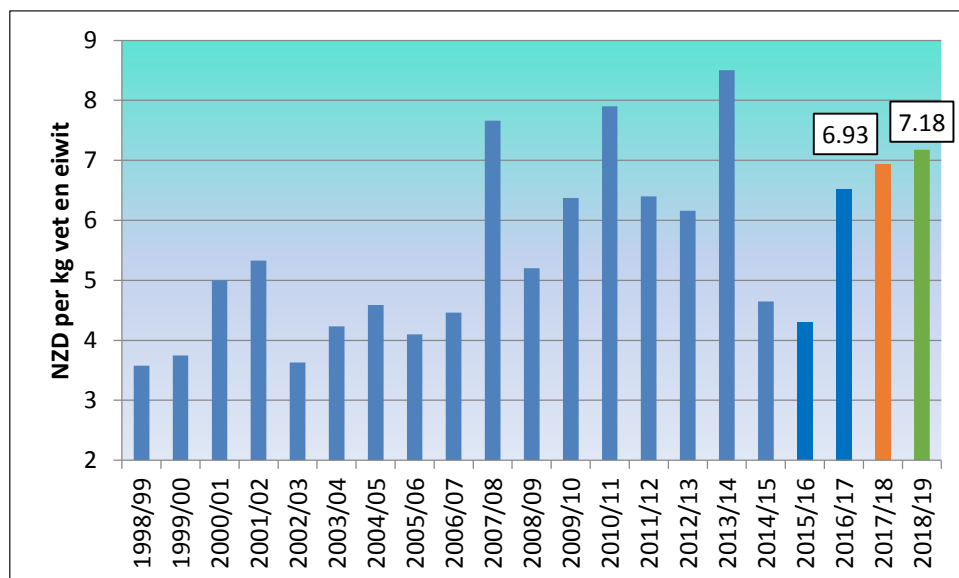
The milk price calculated of the New-Zealand Fonterra company for calendar year 2017 increased by 15.9% to € 32.02 per 100 kg of milk. It should be observed that the Fonterra milk price season runs from June 1 to May 31 inclusive. The milk price for the current season – 2017/18 - will only be finalized in September 2018.

The milk price calculated for 2017/18 is based on the most recent forecast (NZD 6.75 per kg of fat and protein (milk solids (MS)) and an estimated dividend of NZD 0.175 per kg of MS (a total of 6.93 per kg MS). The milk prices for the 2016/17 and 2017/18 seasons have been converted into an amount per calendar year. Following the poor milk price years in 2014/15 and 2015/16, 2017/18 is a reasonably good milk price season, just as 2016/17 was.

Before a new milk price season starts, Fonterra announces an opening milk price, which is updated during the course of the season. On May 23, 2018, an opening milk price of NZD 7.00 per kg of MS was announced for the 2018/19 season. This is good news for dairy farmers, because the opening milk price has been (much) lower in recent years. The opening price of NZD 7.00 per kg of MS has only ever been announced previously for 2013/14 and 2014/15. However, Fonterra is not able to predict the milk price either. Ultimately, the 2013/14 season was a record year, with a final milk price (including dividend) of NZD 8.50 per kg of MS, but 2014/15 ended with a final milk price of NZD 4.40, making it the second poorest milk price year.

After the addition of an estimated dividend of NZD 0.175 per kg of fat and protein, the provisional milk price calculated by Fonterra in 2018/19 is NZD 7.18 per kg of fat and protein.

Figure 3. Milk prices Fonterra 1998/99 – 2018/19 per kg fat and protein (milk solids) and including (estimated) dividend



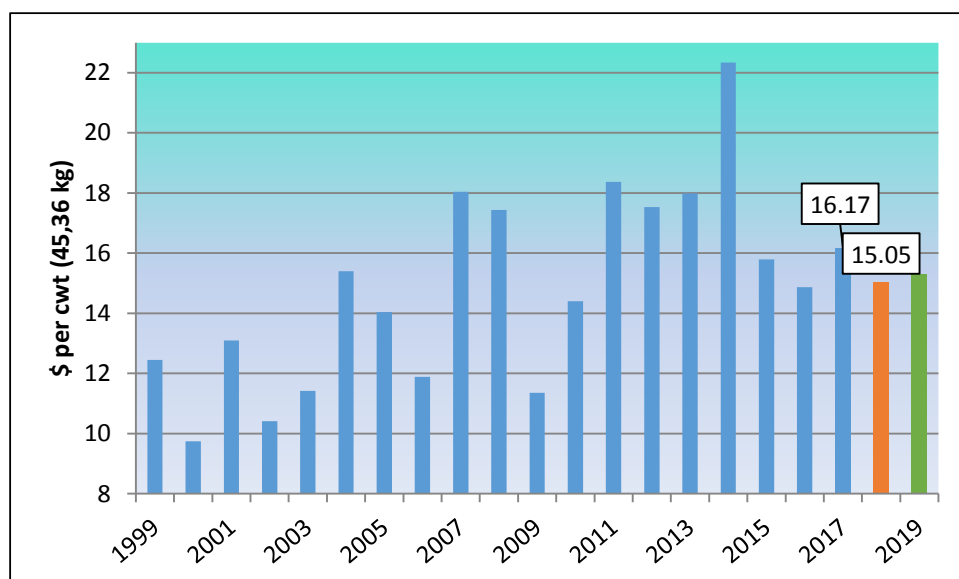
2017/18: forecast - 2018/19: opening milk price

The United States

The so-called Class III price gives a good indication of how milk prices are developing in the United States. Although the milk price has increased less than in Europe, the milk price calculated by the United States (€ 36.22) is higher than the average for EU dairy companies. Expressed in dollars per hundredweight (cwt = 45.36 kg), the milk price increased from \$ 14.87 in 2016 to \$ 16.17 in 2017.

For 2018, the USDA forecasts a Class III price of between \$ 14.80-15.30 per cwt (average = \$ 15.05 per cwt) and 2019 \$ 14.80-15.80 (15.30) per cwt.²

Figure 4. USA Class III Milk prices 1999-2019



2018 and 2019: forecast

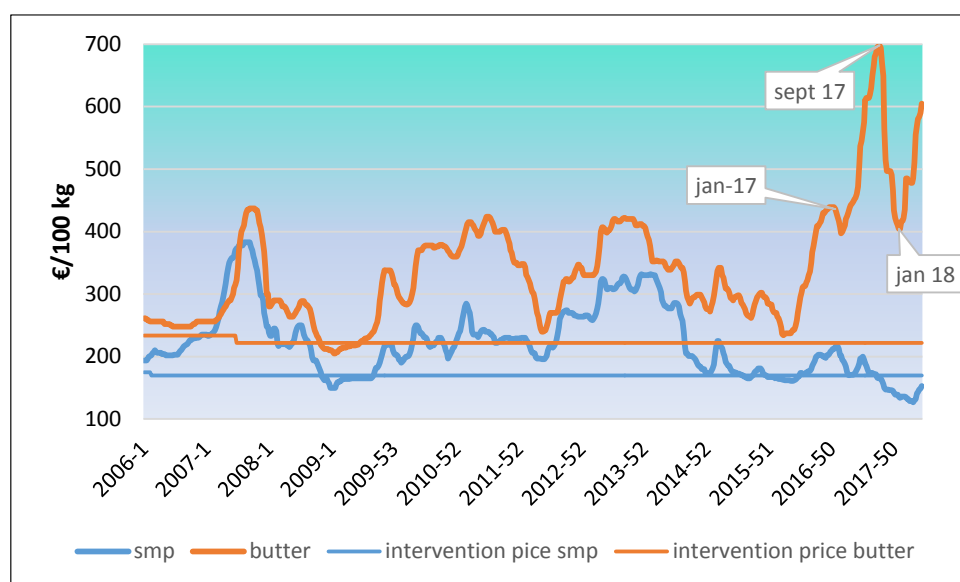
² Source: United States Department of Agriculture (USDA) Situation and Outlook Report, May 2018

2.3 Dairy market 2017³

After a hesitant start, 2017 was a good year for the dairy market, characterized by record fat prices and very low protein prices.

The consumption of fat-related dairy products like butter increased structurally as the result of a more positive consumer perception. However, there was also a protein surplus, which was evident from high stock levels of skimmed milk powder in the EU and US.

Figure 5. Official Dutch weekly quotations for butter and skimmed milk powder (smp) from January 2006 to May 2018 inclusive



At the beginning of 2017, disappointing demand saw the market under pressure. From May onwards, prices started to follow a strong upward trend across the board. With the prices of butter and cream continuing to increase, milk and cheese prices continued to increase too. The price of skimmed milk powder was increasing too, although it remained close to the intervention price level.

The revival experienced for skimmed milk powder was just short-lived. From June onwards, prices came under pressure again as the result of surging milk supply in the EU in particular, increased competition in the global market and an adverse euro/USD exchange rate. The substantial (intervention) stock levels were responsible for a negative sentiment too. Until the end of the year, the quotation for skimmed milk powder fell to well below the intervention price level.

The butter quotation continued to increase until mid-September and reached a record level of almost 700 euro per 100 kg. However, a substantial price correction was made at the end of the year, further to a fall in demand and increasing supply due to the ongoing strong increase in surplus milk production.

The average price level of fat-related products in 2017 was clearly higher than in 2016. The average quotation for butter and full-fat milk powder increased by 60% and almost 27% respectively. The average indicative value for Gouda cheese increased by almost 31%. The average quotation for high-protein skimmed milk powder was ultimately almost 3% lower. By contrast, the average price of whey powder showed an average increase of 22%.

³ Source: ZuivelNL

3. Milk price and market developments in the first half of 2018

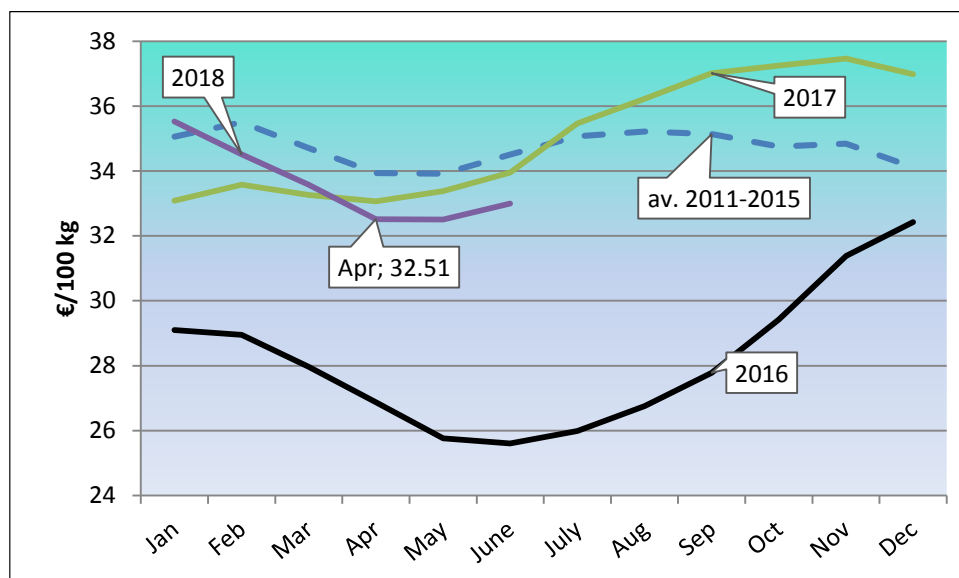
The deterioration in market conditions evident at the end of 2017 continued in the beginning of 2018. At the start of April, the quotation for skimmed milk powder bottomed out at € 127.00 per 100 kg, no less than one-quarter lower than the intervention price level. High levels of supply and the intervention stocks flooding the market were responsible for the weak sentiment.

The butter quotations were reasonably stable initially, until they started to increase significantly at the end of February. At the end of May, the quotation passed the limit of € 600.00 per 100 kg. The increase was the result of good demand, limited production and low stock levels.

Despite the release of relatively large quantities of intervention powder, the quotation for skimmed milk powder has increased significantly since the end of April, which would seem to be the result of a limited availability of fresh product due to disappointing milk production in February and March in particular. Added to this, export sales continued to be favorable, because of which the powder produced was easy to sell.

Both quotations and milk prices fell at the beginning of 2018.

Figure 6. Development of average monthly milk prices from January 2016 until June 2018
(May and June estimated)



It would seem that milk prices have not profited from the improved market situation yet. This can be explained by the fact that the revival of the market was particularly evident in the quotations for April and May, while this publication covers milk prices up to and including April.

In addition there is also some delay in the inclusion of the dairy market revenue in the milk prices paid to dairy farmers. Finally, milk prices in April/May are relatively the lowest of the entire year as a result of the seasonal effect. Based on the above and with improved market conditions in mind, it is reasonable to expect that milk prices will increase in the months ahead.

4. Additional information of milk prices per company

Granarolo

The milk price calculated by Granarolo - which is largely owned by the Granlatte cooperative - increased by almost 8% to € 39.69 per 100 kg in 2017.

FrieslandCampina

The volume-based bonus was abolished in 2017 and no seasonal deductions or bonuses are offset from this date onwards either. The fixed monthly deduction and the deduction per kg of milk were abolished too. Dairy farmers receive a sustainability bonus (Foqus planet) depending on the number of points attained. This bonus is financed by a deduction applied to all dairy farmers and by all of the penalties imposed. So, on balance, the 'average' dairy farmer does not receive a bonus, because of which it is not included in the milk price. However, the milk price calculated by FrieslandCampina does include a pasture bonus for outdoor grazing (an average figure) of € 0.60 (€ 0.29) per 100 kg and a supplementary payment of € 1.27 (€ 3.30)⁴. The supplementary payment consists of a performance bonus of € 0.99 and a registered reserve of € 0.28 per 100 kg of standard milk. The lower supplementary payment is due to the lower profit that FrieslandCampina achieved in 2017, which was the result of one-off costs, amongst other things.

Royal A-ware

The milk price calculated is based on regular quality milk. Royal A-ware processes also special milk flows to meet extra requirements of customers. Premiums for farmers who supply these special milk flows are not taken into account.

The milk price calculated does also not include a volume-based bonus (this is only paid in the event of an annual supply in excess of 500,000 kg), but does include a sustainability premium of € 0.50 (€ 1.00), a pasture bonus of € 0.81 (€ 0.49) and a quality bonus of € 0.50 (€ 0.50) per 100 kg of milk.

Valio

The milk price calculated is based on figures for one of the bigger dairy cooperatives in Finland, which has all of its milk processed by Valio. Together with other dairy cooperatives, they are the joint owner of Valio. Although Valio pays the same price for all of the milk it processes, the cooperatives are free to decide how to pay this milk payment to their member-dairy farmers.

In 2016 and 2017, the monthly milk prices changed just twice, namely in July 2016 (from 34.42 to 35.10) and in July 2017 (to € 36.36 per 100 kg of milk). The milk price calculated included a supplementary payment of € 0.92 (€ 0.78) per 100 kg of standard milk.

Arla

The milk price paid by Arla is calculated on the basis of Danish monthly milk statements. This milk price is also representative for member dairy farmers outside Denmark, as the same milk price system is operated in all countries.

In 2017, Arla increased the fixed deduction per month slightly and from March onwards, the protein/butterfat price ratio changed from 1.6 to 1.4. This was reduced further to 1.1 with effect from January 2018.

In addition to the monthly advance milk price, the member-dairy farmers affiliated to Arla receive a supplementary payment, part of which is converted into member certificates. The supplementary payment for 2017 was € 1.28 (€ 1.25) per 100 kg of standard milk.

DMK

The milk price calculated by DMK includes a bonus of € 0.60 per 100 kg for the Milkmaster sustainability program. The level of this bonus is based on the average bonus paid out in 2016.

Milcobel

Milcobel has not announced the supplementary payment for 2017 yet. The milk price calculated for 2016 was initially based on a lower expected supplementary payment of € 0.24 (€ 0.47) per 100 kg of milk.

⁴ All amounts indicated between brackets refer to 2016

Müller

The milk price calculated by Müller does not include the bonus of € 1.00 per 100 kg for GMO-free cattle feed⁵, as it was assumed - given the situation in 2016 - that most dairy farmers would not receive this bonus.

Danone and Sodiaal

Just as is the case for Sodiaal, the milk price calculated by Danone is based on the so-called A-price. A lower B price was paid for some of the milk in the quota, based on the milk value published by CNIEL, for milk that is processed into butter and skimmed milk powder.

Based on the standard supply pattern applied in the milk price comparison, surplus milk is supplied in excess of the capped A-volume in just several months of the year. Added to this, the B-price is paid for just a relatively limited volume of milk in the same months. As a result, the impact on the milk price calculated under the A/B system is small. If the milk price comparison were to be based on both the average A and B price rather than just the A price, the milk price calculated by Danone would fall by € 0.02 per 100 kg in 2017. The impact on Sodiaal is bigger, because the maximum A volumes are smaller. This would mean a decrease of € 0.21 per 100 kg in the milk price calculated by Sodiaal in 2017, based on an average milk price.

However, it must be observed here that growing dairy farms received the B price for the a bigger part of the milk supplied by them and, as such, received a lower price on average for their milk.

The supplementary payment made by Sodiaal to its members for 2017 will only be announced and paid out after the general meeting in June. Calculation of the milk price for 2017 was initially based on a supplementary payment of € 0.19 per 100 kg of milk, the same amount as the supplementary payment for 2016.

Kerry

The milk price calculated for Kerry includes an additional payment of € 0.73 per 100 kg of the milk supplied in 2017. This was paid out with the milk settlement of January 2018.

Glanbia Ingredients Ireland

The milk price calculated by Glanbia includes the seasonal allowances for February (early lactation bonus) and November (late lactation bonus) of € 2.23 (€ 2.23) and € 2.37 (€ 2.17) respectively. With the milk settlement for August, the Glanbia dairy farmers received a bonus of € 0.92 per 100 kg of the milk supplied from January to June inclusive and in December a bonus of € 1.01 per 100 kg of the milk supplied from July to December inclusive. A loyalty bonus of € 0.17 per 100 kg was paid out for the milk supplied from August to December 2017 inclusive too. These bonuses have been included in the milk price calculated.

Dairygold

The milk price calculated includes a seasonal supplement of € 3.65 (€ 2.89) per 100 kg in February. In May, the protein/butterfat ratio was reduced from 2.03 to 1.64.

Savencia

The milk prices calculated relate to the Agrial/Eurial cooperative, which collects milk in Basse Normandy and supplies to Savencia.

Hochwald eG

Hochwald eG has not announced the supplementary payment for 2017 yet. Therefore, the milk price calculated for 2017 will, for the time being, be based on the supplementary payment applicable in 2016, being € 0.10 per 100 kg.

Last year, Hochwald eG decided to finance investments by deducting € 0.50 from the supplementary payment for a period of five years. As such, an amount of € 0.50 was deducted from the supplementary payment of € 0.60 for 2016. Therefore, the ultimate supplementary payment calculated was € 0.10 per 100 kg of milk.

⁵ A bonus paid to dairy farmers that do not use genetically modified feed

Lactalis

The milk prices for July, August and September 2016 and 2017 were increased by € 0.58 and € 0.34 respectively per 100 kg of milk. Dairy farmers that supply more milk to Lactalis than agreed on contractually pay a penalty for the extra milk. The total penalty amount deducted is paid out to all dairy farmers in the form of an extra quality premium in the summer season, provided their product has a cell count of less than 300,000 per ml and a germ count of less than 50,000 per ml.

Dairy Crest Davidstow

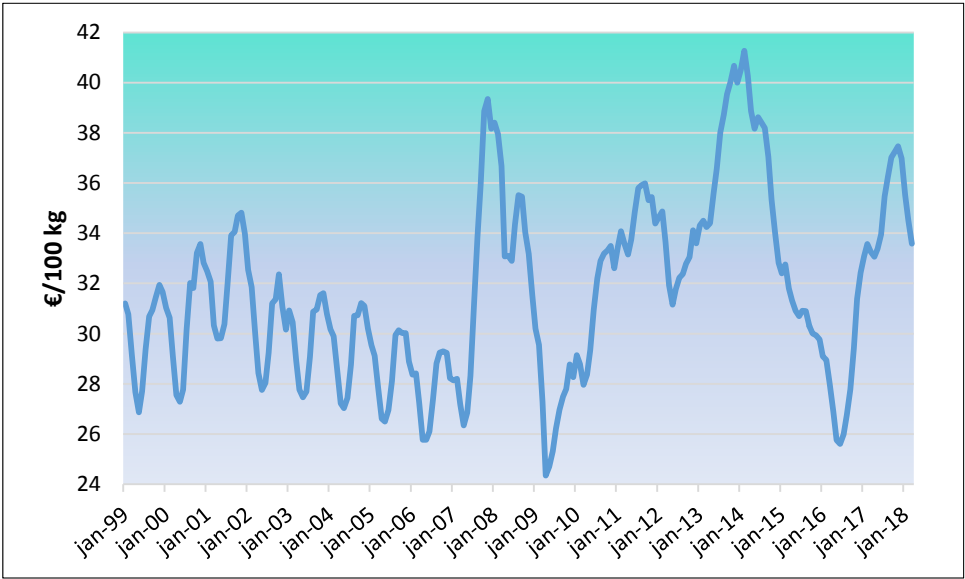
The milk prices calculated by Dairy Crest relate to the agreements made between DirectMilk DPO, the producer organization, and Dairy Crest in relation to the milk supplied to the Davidstow cheese factory.

5. Price volatility

Milk prices started to fluctuate far more from 2007 onwards. Up to and including 2006, price fluctuations were limited and primarily influenced by the seasons, with lower milk prices in the spring, in the months of April and May - when milk production is highest - and higher milk prices at the end of the year (October and November) - when relatively less milk is produced.

Although this seasonal effect still exists, milk price fluctuations have become far bigger.

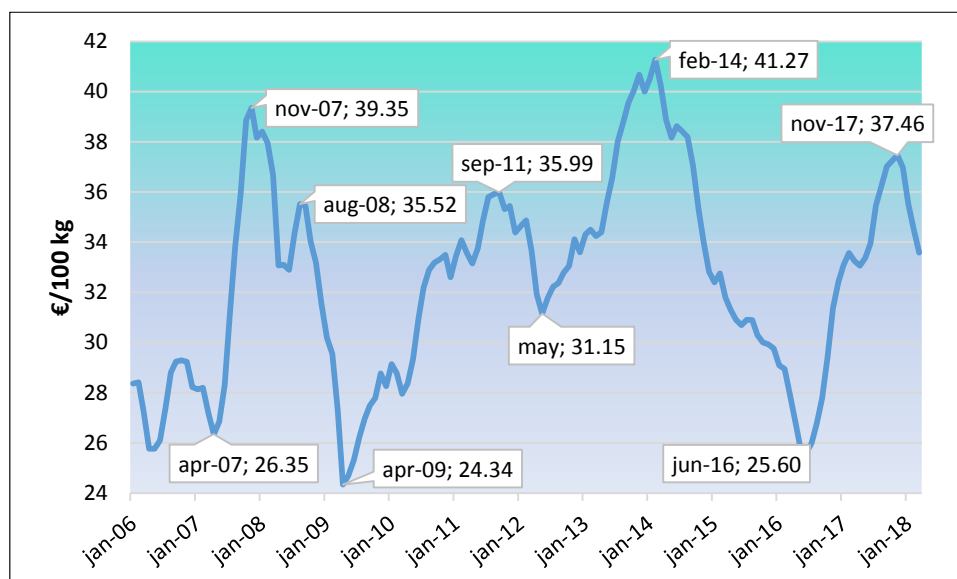
Figure 7. Development of average milk prices from January 1999 to March 2018 inclusive



A further analysis of price fluctuations shows that the biggest price shocks were experienced in 2007 and 2008. In the seven months from April to November 2007, the average milk price increased by no less than € 13.00 per 100 kg, being an average of € 1.86 per month (see Figure 8). It would seem that the dairy industry needed time to adjust to the volatility of the market following the phasing out of market protection by the EU. In 2004-2007, price support in the internal market and external protection were gradually replaced by direct income payments.

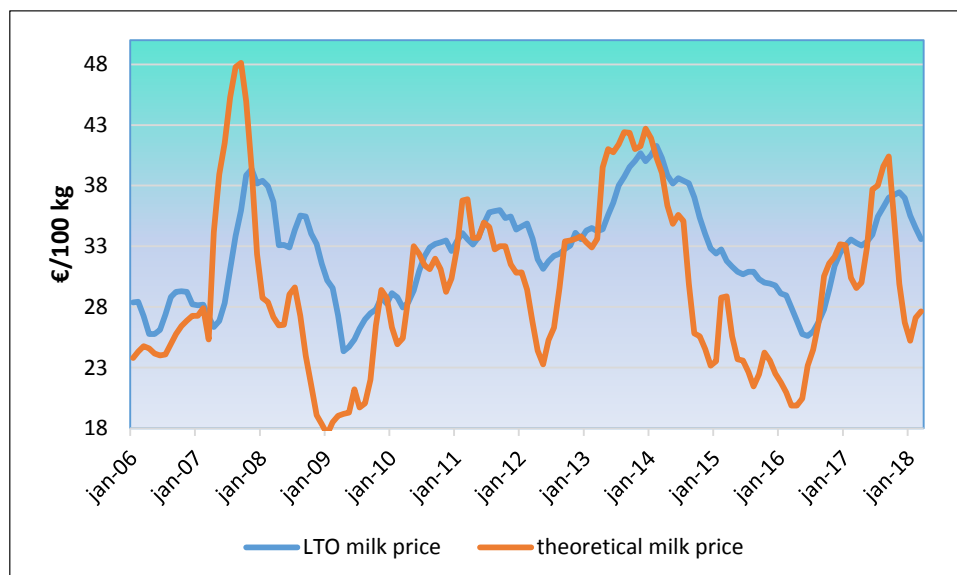
Between August 2008 and April 2009, the decrease was a total of € 11.18, being € 1.40 per month. Subsequently, the climbs were less steep than the descents - to use cycling terminology. Having said this, the route still featured challenging mountain stages with major height differences. For example, the milk price fell by € 15.67 to € 25.60 (€ 0.55 per month) from February 2014 to June 2016, a period of more than two years, increasing again to € 37.46 in November 2017 (€ 0.70 per month), over a period of nine months.

Figure 8. Average monthly milk prices from 2006 onwards



Farm gate milk price volatility is determined by the extent to which dairy companies pass on fluctuations in the selling prices of dairy products in the milk prices they pay to their dairy farmer-suppliers. In general, market developments are passed after some delay and then not in full, as shown in Figure 9. In this figure, the Dutch price quotations for butter and skimmed milk powder have been converted into a theoretical market price⁶, which is then used as an indicator for price development in the dairy market.

Figure 9. Average milk prices and converted butter and skimmed milk powder quotations (theoretical milk prices)



In the figure, the monthly average LTO milk prices are compared with the theoretical milk prices (converted quotations). The chart shows higher peaks and deeper dips for the quotations. Besides market developments being softened, it would also seem that milk prices reflect the market at a delayed rate (approximately three months later).

⁶ The theoretical market price is a price that ZuivelNL calculated for milk with 3.7% fat on the basis of the official Dutch quotations for butter and skimmed milk powder.

It is logical that the milk prices paid out to dairy farmers fluctuated less, as dairy companies have a far broader product portfolio and many selling prices fluctuate less than the prices of butter and skimmed milk powder.

Although no-one in the dairy chain benefits from this, price fluctuations in the dairy market are a given. Stable prices are only possible with a balance between supply and demand. In the dairy market, supply is not able to respond quickly to changes in demand. Added to this, relatively limited and unforeseen changes in demand (the melamine scandal in China and the Russia import ban, for example) and supply (a drought in New Zealand, for example) cause major price fluctuations.

The LTO International Milk Price Comparison includes a number of examples of dairy companies that are trying to soften milk price fluctuations for their dairy farmers.

Firstly, it can be observed that milk price volatility varies from one dairy company to another. In general, dairy companies with a broader product package and a broad geographic spread for their sales will pay a more stable milk price than highly specialized companies do.

The Finnish Valio company and its member cooperatives strive to achieve the most stable milk price possible for their dairy farmers. In 2016 and 2017, the difference between the monthly milk prices was a maximum of € 1.94 per 100 kg, in comparison with € 11.86 for the average milk price of all EU dairy companies.

The milk prices paid by French dairy companies also fluctuate relatively less than the milk prices paid by the other companies. This is due (in part) to the milk price system operated, as set out in the contracts between the producer organization and the dairy companies. This involves the use of price indexations that are subject to less fluctuation than the (global) market prices (see the 2016 milk price report for a more detailed explanation).

Irish dairy farmers are regularly given the opportunity to agree on a fixed price with their dairy processor: for a certain volume of milk, for a certain period of time. The dairy company will, in turn, have made price agreements with the customer about the volume of milk in question.

Glanbia in particular has offered its suppliers a large number of these fixed milk price contracts, which have utilized this opportunity on a large scale.

Annex I Milk prices 2010 to 2017

		Av.	2010	2011	2012	2013	2014	2015	2016	2017
Hämeenlinnan Osuusmeijeri	FI	43.53	39.22	43.28	44.06	45.18	45.91			
Granarolo (Noord)	IT	39.76	34.91	40.40	40.73	41.87	44.67	38.93	36.83	39.69
FrieslandCampina	NL	36.19	32.79	37.12	34.98	40.95	41.14	33.22	30.80	38.51
Valio	FI	35.96						36.03	35.21	36.64
Arla Foods DK	DK	34.45	32.65	35.41	34.47	38.61	39.42	30.50	28.28	36.29
Danone (Pas de Calais)	FR	34.19	32.24	34.55	33.66	35.99	37.95	33.07	31.57	34.46
Sodiaal (Pas de Calais)	FR	34.16	31.96	34.56	33.78	36.34	38.42	33.41	30.48	34.33
DOC Cheese	NL	34.11	32.40	36.86	33.40	38.97	36.52	26.54		
Savencia (Basse Normandie)	FR	33.79	31.85	34.34	33.48	35.94	38.32	32.69	29.78	33.92
Lactalis (Pays de la Loire)	FR	33.22	31.69	34.17	32.82	35.04	37.52	31.67	29.45	33.40
Dairy Crest (Davidstow)	UK	33.13	28.78	31.76	35.15	36.50	39.45	34.44	26.67	32.29
Milcobel	BE	32.81	31.96	34.18	30.63	38.68	36.16	28.45	26.88	35.56
Müller(Leppersdorf)	DE	32.59	30.88	35.09	31.27	37.38	36.60	28.16	26.10	35.26
DMK	DE	32.07	30.43	33.75	31.04	36.99	36.72	27.36	24.80	35.46
Kerry Agribusiness	IE	31.74	29.04	33.61	30.45	37.31	36.15	28.29	24.84	34.27
First Milk	UK	31.59	25.75	29.25	32.42	33.99	36.52			
Glanbia	IE	31.55	29.78	34.14	30.90	37.63	36.11	26.58	22.99	34.27
Royal A-ware	NL	31.40							26.02	36.78
Hochwald Milch eG	DE	30.26						31.04	25.87	33.88
Dairygold	IE	28.91						27.85	24.62	34.25
Average		33.99	31.65	35.16	33.95	37.96	38.60	31.07	28.31	35.25
Emmi	CH	48.84	42.29	48.56	46.64	49.66	51.53	53.17	49.84	49.06
Fonterra	NZ	29.45	30.50	30.15	29.99	35.54	28.71	21.05	27.62	32.02
USA class III	US	34.26	27.24	32.70	33.36	33.28	41.47	35.82	33.99	36.22

Annex II Average currency exchange rates 2017 and 2016

Exchange rate of the euro	2017	2016	2017/2016
Danish crown	7.4387	7.4454	-0.1%
New-Zealand dollar	1.5895	1.5895	0.0%
British pound	0.8761	0.8189	7.0%
US dollar	1.1293	1.1066	2.0%
Swiss franc	1.1116	1.0902	2.0%

Annex III Milk prices 2017 and 2016 1,000,000 kg standard milk per year

Company	Country	2017	2016	2017-2016	2017/2016	National currency
Granarolo (North)	IT	39.79	36.93	2.86	7.8%	
FrieslandCampina	NL	38.63	31.27	7.36	23.5%	
Royal A-ware	NL	38.06	27.30	10.76	39.4%	
Valio	FI	36.64	35.21	1.43	4.1%	
Arla Foods DK	DK	36.46	28.44	8.02	28.2%	28.1%
Milcobel	BE	35.75	27.29	8.46	31.0%	
DMK	DE	35.62	24.96	10.66	42.7%	
Müller(Leppersdorf)	DE	35.36	26.20	9.15	34.9%	
Danone (Pas de Calais)	FR	34.46	31.57	2.89	9.2%	
Sodiaal (Pas de Calais)	FR	34.33	30.48	3.85	12.6%	
Kerry Agribusiness	IE	34.27	24.84	9.44	38.0%	
Glanbia	IE	34.27	22.99	11.29	49.1%	
Dairygold	IE	34.25	24.62	9.63	39.1%	
Hochwald Milch eG	DE	34.14	26.14	8.01	30.6%	
Savencia (Basse Normandië)	FR	33.92	29.78	4.14	13.9%	
Lactalis (Pays de la Loire)	FR	33.54	29.60	3.95	13.3%	
Dairy Crest (Davidstow)	UK	32.63	27.03	5.60	20.7%	27.7%
Average		35.42	28.51	6.91	24.2%	
Emmi	CH	49.24	50.02	-0.79	-1.6%	0.4%
Fonterra	NZ	32.02	27.62	4.40	15.9%	15.9%
USA class III	US	36.22	33.99	2.22	6.5%	8.6%

Annex IV Milk prices 2017 and 2016 1,500,000 kg standard milk per year

Company	Country	2017	2016	2017-2016	2017/2016	National currency
Granarolo (North)	IT	39.89	37.03	2.86	7.7%	
FrieslandCampina	NL	38.67	31.43	7.24	23.0%	
Royal A-ware	NL	38.36	27.60	10.76	39.0%	
Valio	FI	36.64	35.21	1.43	4.1%	
Arla Foods DK	DK	36.51	28.49	8.02	28.2%	28.1%
Milcobel	BE	35.99	27.48	8.52	31.0%	
DMK	DE	35.75	25.10	10.66	42.5%	
Müller(Leppersdorf)	DE	35.36	26.20	9.15	34.9%	
Danone (Pas de Calais)	FR	34.46	31.57	2.89	9.2%	
Sodiaal (Pas de Calais)	FR	34.33	30.48	3.85	12.6%	
Kerry Agribusiness	IE	34.27	24.84	9.44	38.0%	
Glanbia	IE	34.27	22.99	11.29	49.1%	
Dairygold	IE	34.25	24.62	9.63	39.1%	
Hochwald Milch eG	DE	34.15	26.14	8.01	30.6%	
Savencia (Basse Normandië)	FR	33.92	29.78	4.14	13.9%	
Lactalis (Pays de la Loire)	FR	33.54	29.60	3.95	13.3%	
Dairy Crest (Davidstow)	UK	32.85	27.27	5.58	20.5%	27.5%
Average		35.48	28.58	6.91	24.2%	
Emmi	CH	49.41	50.20	-0.79	-1.6%	0.4%
Fonterra	NZ	32.02	27.62	4.40	15.9%	15.9%
USA class III	US	36.22	33.99	2.22	6.5%	8.6%