INTERNATIONAL COMPARISON OF PRODUCER PRICES FOR MILK

2001 MILK PRICES

July 2002

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1. Introduction

For dairy farmers the price received for their milk is the major source of income.

In order to obtain a clear picture of the developments and, thereby, to improve the transparency of the dairy market for farmers, the Dutch farmers union (LTO- Nederland) has commissioned the Dutch Dairy Board (Productschap Zuivel) to monitor and systematically compare the prices of raw milk paid by various dairy companies in the EU. This comparison is realised in co-operation with the European Dairy Farmers (EDF).

Each month the international milk price comparison is published on the website www.milkprices.nl. After the calendar year, when most (co-operative) companies have presented their definitive milk prices, an annual report is presented that includes supplementary payments for end of the year profits. The present report shows the results for calendar year 2001 (chapter 2).

Primarily, the milk prices in this report are based on the milk payment methods of the dairies. All prices are calculated for milk with standard fat and protein content, quality and quantity. The result from these calculations is NOT a comparison of the average prices actually paid by the dairies, but the price each company would have paid for a certain standard quality and quantity of milk based on its own payment system.
Methods and general assumptions regarding the milk price comparison are described in chapter 3.

Compared to the former report two changes must be considered:
- The large French milk processor Sodiaal made its entrance as the 17th company studied in the milk price comparison.
- The standard quality in the milk price comparison has been changed. The reason for the adjustment is the assumption that many European dairy farmers are able to meet more strict quality criteria. These farmers are eligible for quality bonuses on the milk price at a number of dairies. This has consequences for the milk prices in the comparison.

In chapter 4 some characteristics of the payments systems of the individual dairy companies and some basic assumptions are specified. Graphical reviews show the different components that contribute to the monthly milk payments of individual companies throughout the year.

The consequences of the quality adjustment for the milk prices -and the ranking of the dairies in the milk price comparison- is shown in chapter 5.

In chapter 6 some attention is given to the litre-kilogram conversion factor that is used in the milk price comparison to convert litres milk into kg. This factor is under discussion.

Finally we would like to thank all participating dairy farmers of EDF for their co-operation. The monthly contribution of their milk payment receipts forms the solid basis of the comparison which is very much appreciated.

2. **Milk prices 2001**

The milk prices calculated for the calendar year 2001 are shown in the table below.

Table 1. Standardised milk price calculations for 2001 deliveries (euro/100 kg)

(Price per 100 kg standard milk with 4.20 % fat, 3.35 % protein, total bacterial count 24,999/ per ml, somatic cell count 249,999 per ml and a yearly delivery of 350,000 kg, VAT and levies excluded, supplementary payments for end-of-the-year-profit-distributions are included.)

2001	(2000)			milkprice 2001	2001/2000	national currency 2001/2000 5)
1	**(1)**	**Parmalat 4)**	I	38.47	6.2%	
2	**(3)**	**Kymppi**	FIN	35.29	4.0%	
3	**(6)**	**Friesland Coberco Dairy Foods (FCDF)**	NL	33.61	6.5%	
4	**(12)**	**Humana Milch Union eG**	D	33.18	8.8%	
5	**(13)**	**Campina**	NL	32.88	7.9%	
6	**(4)**	**Arla Foods (Denmark)**	DK	32.79	2.7%	0.0%
7	**(8)**	**Lactalis**	F	32.79	4.2%	
8	**(5)**	**Sodiaal**	F	32.78	3.5%	
9	**(14)**	**Nordmilch**	D	32.76	9.6%	
10	**(7)**	**Danone**	F	32.66	3.7%	
11	**(9)**	**Bongrain CLE**	F	32.59	3.6%	
12	**(10)**	**Belgomilk**	B	32.23	2.7%	
13	**(11)**	**Glanbia**	IRL	31.52	2.6%	
14	**(2)**	**Arla Foods (Sweden)**	Se	30.73	-11.1%	-8.7%
15	**(16)**	**Express Dairies**	UK	30.27	13.2%	-2.0%
16	**(15)**	**Golden Vale**	IRL	30.22	3.6%	
17	**(17)**	**First Milk**	UK	28.76	13.6%	-2.0%
		AVERAGE MILK PRICE 1)		32.56	5.0%	
		Other milk prices				
		USA 2)	USA	36.68	38.8%	2.5%
		New Zealand 3)	NZ	18.40	10.2%	-4.9%

Remarks:

Between brackets ranking 2000.

1. Arithmetic mean
2. Own calculation based on USDA monthly publications of Class III prices adjusted for 4.2 % fat, 3.35 % (crude) protein and somatic cell count of 249,999.
3. Based on paid out prices by Fonterra (New Zealand Dairy Group before the merger in June 2001)
4. Milk prices Parmalat 2001/2000 based on different sources (see chap. 4.1)
5. Change in value of national currencies against the euro.

Market situation 2001

In the first half of 2001 world market conditions were prosperous. The oil prices were good, the dollar was up and the demand for dairy products was relatively strong. Prices of dairy commodity products such as skimmed milk powder and butter increased rapidly, reflected in high milk prices. In the second half of 2001 however the world economy was on the way down and demand for dairy commodity products decreased. Nevertheless high milk prices were sustained till the end of the year, supported by the strong demand for cheese.

The average milk price 2001 for 100-kg standard milk was € 32.56. On average milk prices grew 5% compared to the prices of 2000, against an average inflation rate in EU-15 of 2.3%[1].In comparison to 1999 the milk prices have been 7.5% higher in 2001 (Appendix 1).
The average milk price for standard milk includes the price paid by Parmalat. Because the milk prices of Parmalat are based on different sources (chap 4.1), the growth of 6.2% of the milk price of Parmalat compared to 2000 is probably an overestimation. Excluding Parmalat of the comparison, the average milk price 2001 would have been 32.19 € /100 kg (+4.9%).

In 2001 the price gap between the highest and the lowest milk price - Parmalat excluded - was reduced from € 9.26 in 2000 to € 6.53 in 2001. This is mainly due to a recovery of the milk prices of Express Dairies and First Milk in 2001. The milk prices of these companies reached bottom levels in 1999 and 2000, but they improved to end up 13% higher in 2001.

Good milk price developments can also be recorded for Germany. In 2001 Nordmilch and Humana Milch Union have paid about 9% more. After the summer the milk price of Nordmilch and Humana peaked, supported by the strong German cheese market. At the root of the (internal) cheese market lies increased consumption of cheese at the expense of meat prompted by fear for BSE.
Like in Germany, the main growth of the Dutch dairy giants took place in the second half of the year. The milk prices of Campina and FCDF grew by 7.9% and 6.5% respectively. In particular the protein component of the milk gained value. This is not unique for the Dutch companies. In general, milk payment methods are developing in favour of a higher protein/fat price ratio.

Exceptional costs/ Food-and-Mouth disease

Despite the impressive growth of their milk prices, Express Dairies and First Milk were not able to catch up with the other companies in 2001. Improvement of the milk prices of the British companies was important, since many dairy farmers experience serious cash flow problems because of the very low milk prices in 1999 and 2000 in combination with reduced stock sales and unplanned extra feed costs. In 2001 the British dairies managed to pay a milk price that was 15% higher (in euro 13 % after adjustment for currency devaluation (-2%)).
Because of the Food-and-Mouth disease, the UK, as well as the Netherlands and Ireland, had to deal with exceptional costs in 2001. The income of the farmers diminished for instance and logistics and processing costs were higher than usual. Some farmers had to deal with extra (expensive) feeding because the cows were indoors for a longer period. It has been said that the cost of feeding, animal health and fertiliser have been up +7.5% compared to the normal situation.
From 1 July onwards Dutch farmers had to pay an extra levy of 0.61 € /100 kg milk in order to share the cost involved in the suppression of the Food-and-Mouth disease. This levy has not been taken into account for the milk price comparison.

[1] The rate of inflation in the EU - 15 as measured by the European Index of Consumer Prices (EICP), source Eurostat Statistics in Focus, theme 2- 16/2002

Top milk price

Parmalat pays the best price for 100-kg standard milk in the milk price comparison, which is hardly a surprise. Italy is primarily an import country for dairy products. In general Italian dairy farmers produce milk with relatively low fat and protein contents, like other producers in more southern regions of Europe. Therefore milk price actually received by Italian farmers may be 5% less than the standardised milk price. The second best milk price is paid by the Finnish dairy Kymppi. The Kymppi Dairies Group consists of a number of dairies that are the (shared) owner of Valio. Stronger price levels in Finland, favourable export prices especially during the first half of the year, and higher capacity utilisation made it possible to raise the milk price paid to the owner co-operatives and, consequently, to the dairy farmers. Additional income and cost savings compared with the previous year were passed on almost in full to the producer price.

Currency declination

Unlike previous years, Arla Foods Sweden cannot be found among the top payers in the milk price comparison of 2001. The milk price of Arla was relatively modest, mainly because of the strong devaluation of the Swedish Krone in 2001 compared with 2000 (minus 8.7% change against the euro). Without this change the milk price of Arla Foods Sweden would have been € 33.40 per 100 kg!
The milk price for the Danish farmers of Arla Foods is not influenced by currency fluctuations, because the Danish Krone is tied to the euro in terms of foreign exchange. The milk price of Arla Foods Denmark was 2.7% above the milk price of 2000. From October 1st 2003 onwards Arla Foods will harmonise the payment systems for Swedish and Danish dairy farmers.

USA

The class III producer price of the United States increased rapidly in the first months of 2001, outreaching the European milk prices. The good milk price was a consequence of the market situation in combination with a strong dollar. Further the summer was long and hot, therefore the milk production was suppressed. The relatively low milk production supported the milk price at the end of the summer. With the world economy on its way down after September 2001, the milk price dropped in November(minus12 €/100 kg compared to September!).These strong ties of the USA milk price with the market situation are expressed in huge fluctuations over the longer term, certainly in comparison with European milk price development (see chapter 4.18).

New Zealand

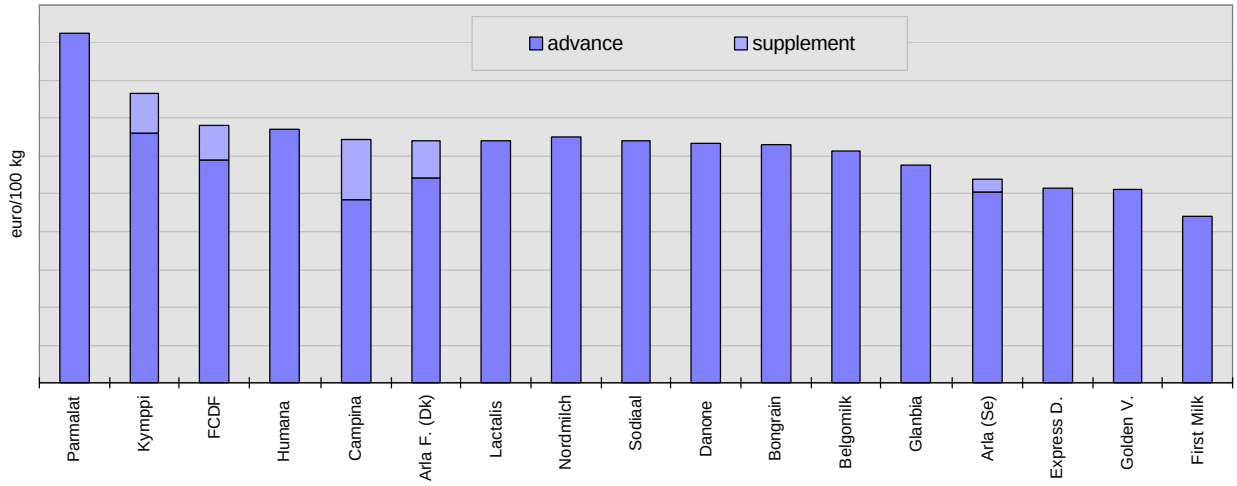
Fonterra is the successor of the New Zealand Dairy Group after the merger with Kiwi Co-op Dairies in June 2001. Fonterra had a very good dairy season although the milk prices did not reach the same price levels like in Europe and the USA. The dairy season in New Zealand starts in June ending in May. At the beginning of the season the milk price is modest, but the 'advance rate' increases during the season. The so-called end-of-season price for '00/'01 was 5 NZ$ per kg milk solids[2]. (about 18 € /100 kg standard milk). This is probably an underestimation of the actual payout of many farmers, because the average fat and protein content of milk are above the standard contents in the milk price comparison. The NZ$ devaluated against the euro (minus 5% in 2001), which had a negative impact for the New Zealand milk price expressed in euro in this comparison.

[2] Total milk solids is protein plus fat contents.

Supplementary payments

The Dutch and Scandinavian co-operatives generally pay out substantial supplementary payments. Graph 1 shows which part of the definitive milk prices is paid on account (monthly advance payments) and which part is supplementary paid after the financial year by the companies.

Graph 1. Standardised milk price calculations for 2001 deliveries (euro/ 100 kg)



In 2001 Campina has paid 90% of the definitive milk price in advance and 10% as a supplementary payment, which is conform the target. Campina announced to adjust this target (to 95% and 5% respectively) as a consequence of the merger with the German company Milchwerke Köln Wuppertal. FCDF has -like usually- paid 95% of the milk price in advance and 5% as supplementary payment. Unlike 2000 there have been no supplementary payments from Belgomilk over 2001. Because the German co-operatives Nordmilch and Humana eG have made additional payments during the year these payments were retrospectively added to the monthly milk prices (and not taken into account as supplementary payments).

3. Method and assumptions

3.1. Method

Milk payments receipts (one per dairy company) are collected by the European Dairy Farmers (EDF) from various members. These receipts constitute the main input of the project. The milk payment systems adopted by each company were analysed by means of these receipts. Together with additional information a calculation model is developed.

This model is able to calculate the monthly milk price using:
1. Monthly data from milk payment receipts, such as fat and protein prices, bonuses or deductions etc.
2. External data, such as exchange rates etc.

Using these data, the model can calculate the monthly milk prices for different:
a) fat and protein contents;
b) somatic cell counts and total bacterial counts;
c) quantity of milk delivered per year.

The values of these parameters built into the calculation model are chosen in such a way that a certain standard of quality and scale of deliveries is represented.

The monthly milk prices are weighted on the basis of the national seasonal pattern of deliveries to get a rolling 12 - month average.

It must be emphasised that the result of these calculations is NOT a comparison of the average prices actually paid by the dairies, but the price each company would have paid for a certain standard quality and quantity of milk based on its own payment system.

3.2. Chosen standards for fat and protein contents, quality and annual delivery

a) Fat and protein contents

The chosen fat and (crude) protein contents of 4.20 % and 3.35 % (weight percentages) correspond to European averages.

b) Annual delivery

A total annual delivery of 350,000 kg has been chosen.

c) Quality

Standard total bacterial count (tbc) is 24,999 per ml and somatic cell count (scc) 249,999 per ml.

It is assumed that the majority of the milk produced in European countries that are part of the comparison is able to meet total bacterial counts and somatic cell counts of 24.999/ 249.999 or less. For this reason the standard quality has been changed compared to earlier publications! The former quality standards were tbc 50,000 per ml and scc 300,000 per ml. For a number of companies the present quality standard has a positive effect on the milk price. The consequences of the adjustment of standard quality for the milk prices are shown in chapter 5.

3.3. Milk price per calendar year

The milk prices for a calendar year are the weighted averages of the monthly milk prices from January to December. The monthly weights are derived from the national seasonal pattern of deliveries.

3.4. Supplementary payments for end of the year profits

For a number of dairies, mainly coops, the monthly milk price is not the final price, but an advance payment. In these cases the final or definitive milk price can be defined as the advance payment plus the supplementary payments depending on which part of the end of year profits of the dairy company are distributed to the member - suppliers. The end of the year profits can also be added to the general reserves or be added to registered capital.

These supplementary payments are included in the definitive milk prices insofar as they are clearly linked to the quantity of milk delivered and actually distributed to the members. Dividend on shares not linked to the milk delivered and/or additions to the general reserves (these reserves are not allocated to the members but 'in dead hand') are excluded from the supplementary payments.

Supplementary payments are adjusted if the remuneration for the capital invested in the company by the member suppliers is below the market rate (lower than the interest paid on 10 year government bonds)[3].

Adjustment of supplementary payments according to the date of payment has been made[4].

3.5. Other assumptions

Prices have been converted to Euro's by using the fixed rates (Euro zone) or the monthly average of the daily exchange rates.

Volume is converted to weight by using a conversion rate of 1 litre equals 1.03 kg. Other conversion rates used are:

- 1 gallon equals 4.5461 litre
- 1 cwt (USA) equals 45.36 kg.

In Denmark, Sweden and Germany payment of milk is based on kilograms, but the conversion factor used for deliveries is fixed at 1.02. To make the prices comparable one conversion factor is chosen, namely 1 litre equals 1.03. As a consequence the prices in Denmark, Sweden and Germany are corrected (reduced) by multiplying with a factor 1.02/1.03 (is about minus 1 %, see chapter 6).

Prices are farm gate prices.

If collection costs are deducted or a bonus is paid if fewer collections are made, the comparable milk price is based on collection every other day.

Payment dates have yet not been taken into account in the monthly milk price calculations (contrary to the supplementary payments that have been adjusted for date of payment). A correction for date of payment of monthly milk prices has little impact on the level of milk prices, because dates of payment do not vary a lot between the companies.
Prices are exclusive of Value Added Tax (VAT) and before deductions of any levies.

[3] In that case the supplementary payment has been adjusted for an interest loss based on the long-term (10- year) government bond yields.
[4] Payment has been adjusted by an interest loss based on the number of days between the date of payment and the date in the middle of the delivering period and an interest rate (yearly average of 3- month interest rates for the different EU member states as published by the European Central Bank).

4. Dairies and milk payment systems, specific assumptions and milk price composition

The dairies in the milk price comparison were selected because of their size and location within the EU. Some dairies adopt different payment systems for different regions. In such cases the region to which the milk price in the comparison applies is specified.

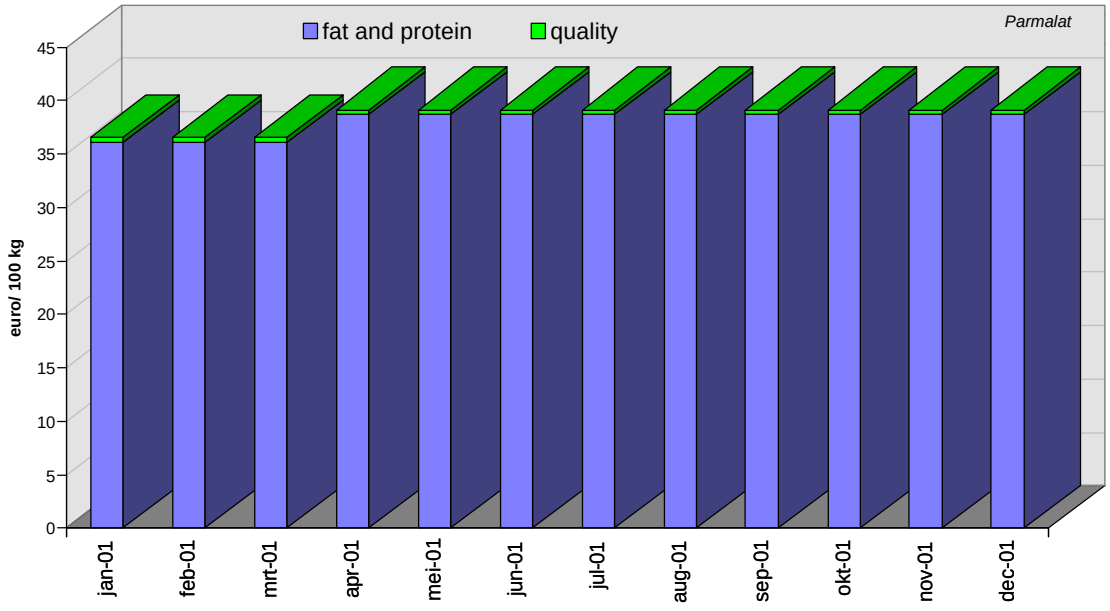
For each company information is added to show how the (advance!) milk prices of the individual companies were built up from January to December 2001.

4.1. Parmalat

In Italy there are national agreements about the industrial milk price and payment systems in the different regions. In the milk price comparison the milk price calculation of Parmalat is based on the contracts for 1998/99 and 1999/00 (from 1 April to 31 March) between Parmalat and dairy farmers in the province of Parma in the region Emilia- Romagna (represented by AIPLE[5]). The year following March 2000 however, the contract was not prolonged. Therefore the milk price for the year April 2000 to March 2001 is based on a National Agreement. The calculated milk prices according to the National Agreement are about 5% below the milk price based on the Parmalat contract.
Because of these different sources the calculated Parmalat milk price for 2001 is not fully comparable with 2000 or 1999 even more so because of individual agreements that probably have been made between milk producers and Parmalat during the year ending March 2001.

The Parmalat milk price in this comparison is based on the so-called industrial milk, which has a different price from milk that is destined to special cheeses. The price of milk destined for Parmesan cheese, for example, is about one third higher than industrial milk.

Graph 4.1 Milk price composition of Parmalat



- Milk price is based on contracts running from April to March. Milk prices from January until March are based on a National Agreement, from April onwards on a Parmalat contract.
- The milk price of Parmalat is fixed throughout the year and for 99% dependent on fat and protein.

[5] AIPLE = Associatione Interprovinciale Produttore Latte van de province Parma.

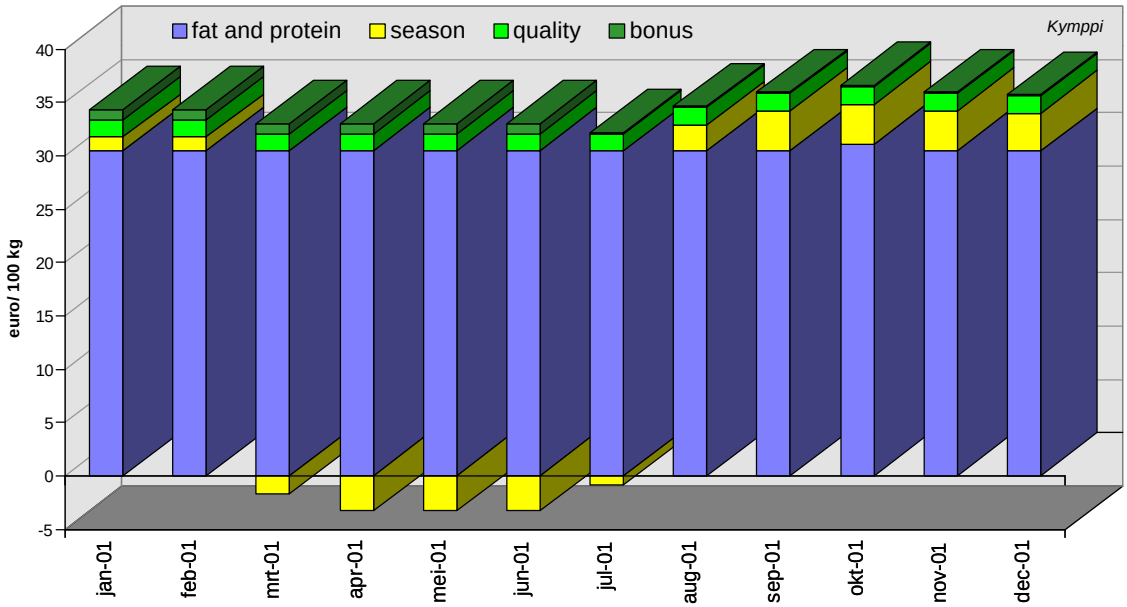
- There is a (low) quality bonus for milk with tbc < 100,000 and scc < 300,000.

4.2. Kymppi group

Kymppi is a group of dairy companies. The Kymppi group is the fifth largest dairy organisation in Finland and receives about 6% of the total Finish milk production (1998). Kymppi is chosen in this milk price comparison as an alternative for the large co-operative Valio. The milk price of Kymppi generally follows the payments of Valio.
The calculated milk prices are exclusive of subsidy. When Finland joined the European Union a transitional subsidy per unit of milk was negotiated. The level of this subsidy differs between the regions but can be more than 20% of the milk price.

Half of the supplementary payments of 2001 is not paid in cash, but added to the registered capital. Because market conform interest is paid on this registered capital this payment is part of the supplementary payment in the comparison.
Because Kymppi also gives additional compensation for interest loss, the supplementary payments in the milk price comparison are not corrected for date of payment.

Graph 4.2: Milk price composition of the Kymppi Group



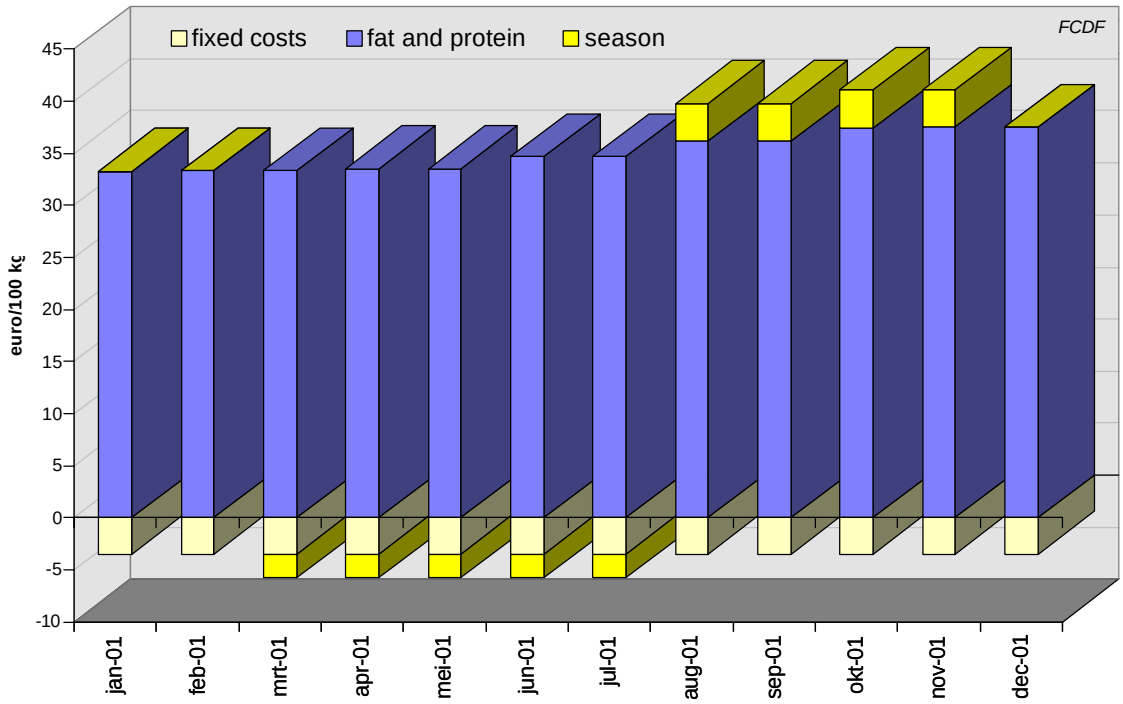
- Seasonal adjustments (bonuses and deductions) are applied throughout the year
- Relatively large quality premium for milk with scc < 250,000.
- Bonus: temporary extra payment from January until June

4.3 Friesland Coberco Dairy Foods

The milk price paid by Friesland Coberco Dairy Foods (FCDF) is based on the percentage change (index) of the milk prices of 2001 in relation to the milk prices of 1999 of five European companies, namely Campina, Belgomilk, MD Foods, Nordmilch and Humana Milchunion eG. The milk price of Friesland is not definitive before November 2002, when the results of all index companies are published. However information from earlier years show the provisional milk price - on which the supplementary payments for 2001 are based- mostly equals the definitive milk price.
The milk price is not linked to the results of FCDF. Profit distribution is based on dividend on A- and B-shares. The number of A- shares owned by the member suppliers is directly linked to the milk supplied. This is not the case for the so called B- shares, which can be exchanged by the members on an internal stock exchange.
The supplementary payments in this comparison in respect of end-of-the year profits includes dividend A. This dividend is in fact a percentage of the milk price paid in advance. Dividend paid on B- shares is excluded from the supplementary payment in the milk price comparison, because B-shares are not linked to the milk delivered.

Unlike most other payment systems, fat and protein values are not fixed by the Dutch companies, but vary during the year depending on market developments and/or expectations for product sales. During 2001 the protein price/fat price ratio of FCDF increased from 1.34 in January to 1.90 in December.
The quality payment of FCDF is based on a pooling system. This means the sum of deductions for farmers who do not meet the quality criteria, is distributed to farmers who deliver first class milk.

Graph 4.3: Milk price composition FCDF



- Fat and protein: protein price and fat price are variable.
- Significant seasonal premiums (autumn/winter) and deductions (summer)
- Fixed costs: monthly charges and deductions per kg
- Quality payment is based on a pooling system

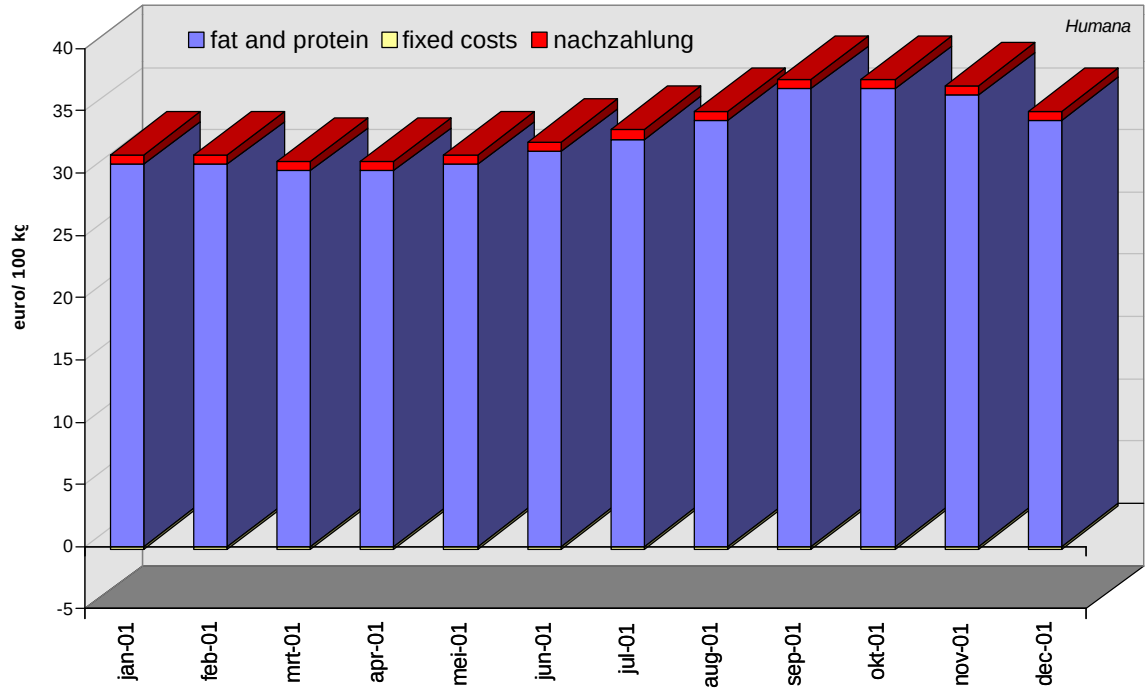
4.4. Humana Milchunion eG

In Germany milk payment is based on a monthly basic price for 3.7% fat and 3.4% protein and quality class I. This basic price ("Grundpreis"), is adjusted for actual fat and protein levels, using fixed fat and protein values.

From January to December 2001 Humana Milchunion eG has paid extra bonuses on the milk price. These additional payments ("Nachzahlungen") are not regarded as supplementary payments, but retrospectively added to the milk prices paid in these months (see graph 4.4).

Because member suppliers have to invest in member participating units, without receiving interest in return, the (rolling average) milk price of 2001 for Humana Milchunion eG is corrected for the interest loss (not shown in graph 4.4). In other words the supplementary payments are negative.

Graph 4.4: Milk price composition of Humana



- The milk price is largely dependent on fat and protein (98%); the basic price can vary form month to month.
- Fixed costs: small deduction per kg of milk delivered (hardly visible in graph 4.4)
- Nachzahlung: additional payments, which are included in monthly milk prices
- There is no seasonal bonus or a premium for quantity

4.5. Campina

The main price determining factors - fat and protein value- are based on market returns for dairy products sold by Campina.

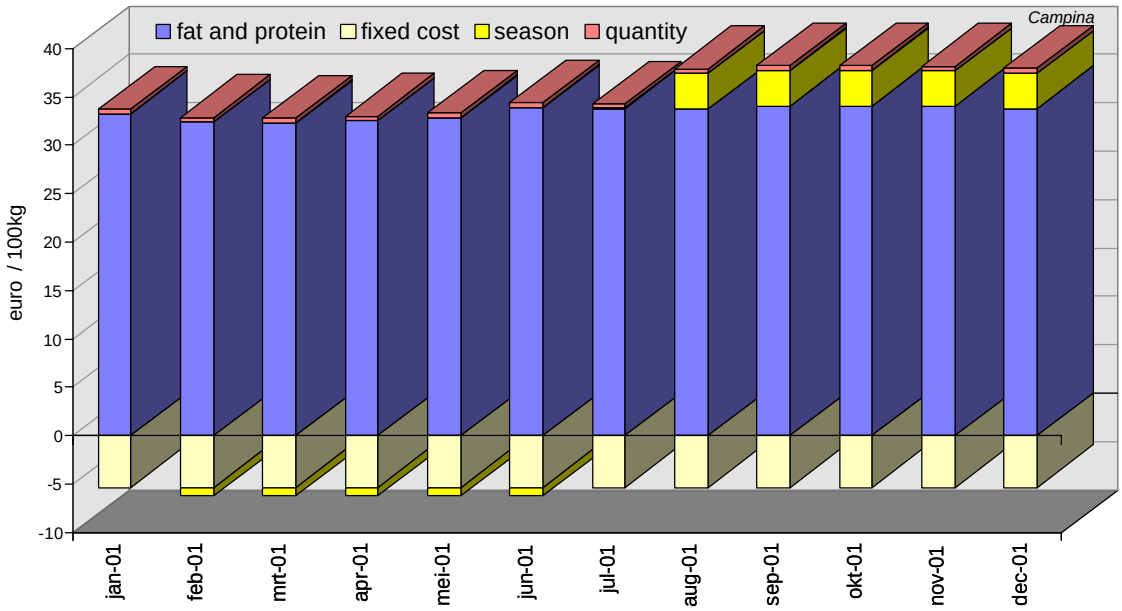
Part of the calculated milk price for Campina is a quantity bonus of Euro 0,45/100 kg (corresponding with an annual delivery of 350,000 kg)

The quality payment of Campina is -like FCDF- based on a pooling system (see 4.3), so the sum of deductions for lower quality is distributed to farmers who deliver first class milk.

The target for Campina is to pay 90 % of the milk price on account and 10 % as a supplementary payment. The supplementary payments have - besides a correction for date of payment - been corrected for capital invested through the members by participating units. No interest is paid on these units.

Part of the profits is not distributed in cash, but as subordinated bonds. The value of these subordinated bonds to the members has been included in the supplementary payments, because a market conform interest is paid.

Graph 4.5: Milk price composition of Campina



- Fat price and protein prices are variable.
- Significant seasonal premiums (autumn/winter) and deductions (summer).
- Fixed costs: relatively large monthly charges and deductions per kg milk delivered.
- Campina gives a quantity bonus for annual delivery > 100,000 kg.
- Quality payment is based on a pooling system.

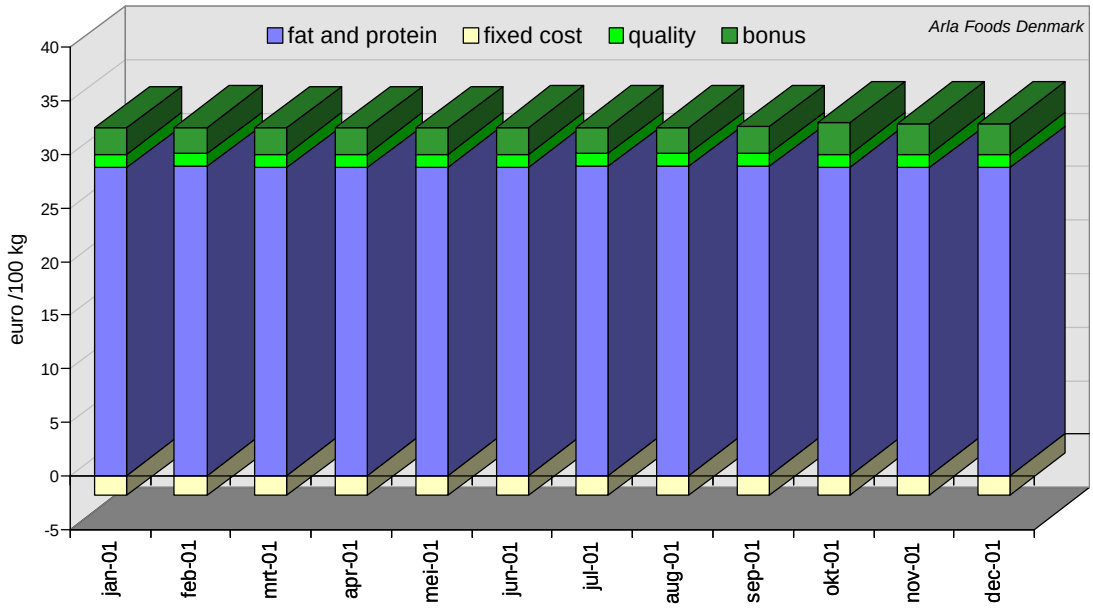
4.6. Arla Foods Denmark

Some characteristics of the payment system of Arla Foods Denmark, the former MD Foods, are the two weekly payments and the seasonal price differentiation. All seasonal bonuses and deductions are not added or deducted from the two weekly milk cheques but are paid/ received as a lump sum after the end of the financial year.
The milk price determining factors (fat and protein value, costs etc.) do not change during the year, only the market bonus (= percentage of the so-called basic price) can vary.

The former MD Foods used to pay relatively large supplementary payments. The end of year profit distribution was applied by means of a percentage of the basic price. Part of this was paid in advance in April.

The financing system by the members of the co-operative is not based on capital investments, but based on guarantee certificates. These certificates are not taken into. Therefore the supplementary payments are only corrected for date of payment.
Because the financial year of Arla Foods started in October and has ended 30 September, the most recent supplementary payment over 2000/2001 has also been applied to the last three months of 2001.

Graph 4.4: Milk price composition of Arla Foods (Denmark)



- Monthly payments are fixed.
- Large market bonus (8- 9.5% of basic price)
- Quality bonus for tbc < 30,000 and scc < 300,000
- Fixed cost: monthly deductions (administration, transport)

4.7 Lactalis (Pays de la Loire)

Development of the milk prices in France is depending on quarterly national recommendations. These recommendations are based on an agreement between representatives of the dairy industry and farmers. In fact the recommendations are absolute price increases or decreases per litre compared with the same trimester a year ago. In general the dairies follow these recommendations.

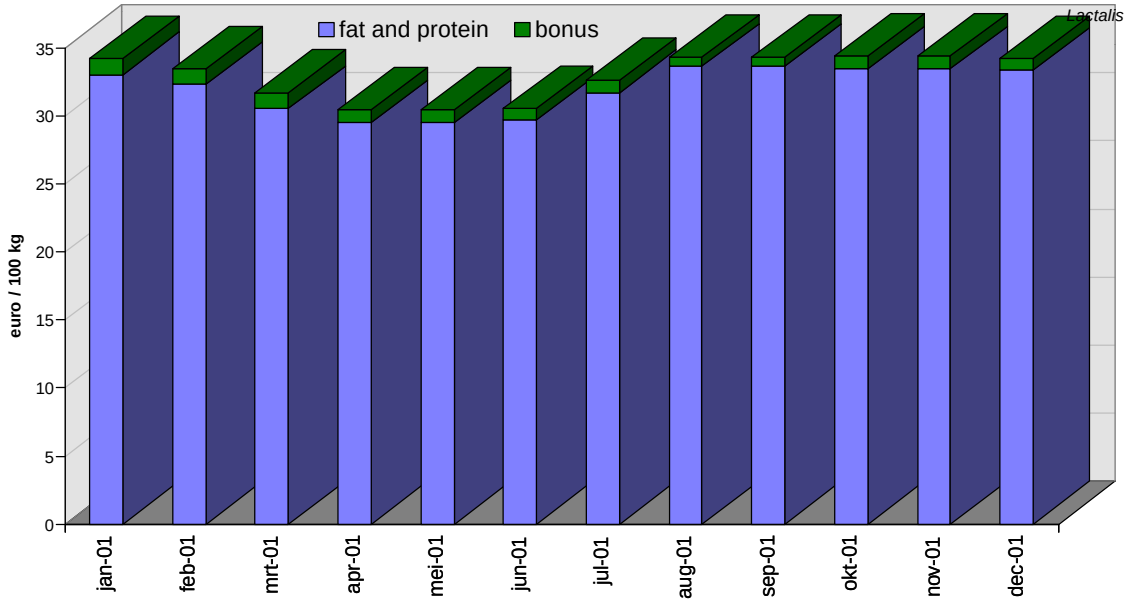
Further, the precise payment systems are dependent on the location of the dairy company. Different regions have their own Interprofessional regional agreements depending on contents and quality. For this reason the name of the region concerned has been added to the name of the company between brackets.

In general all the regional payments systems are based on a reference price for a litre of milk which contains 38 grams fat and 32 grams of true protein[6]. The French true protein contents are converted to crude protein by multiplying them with a factor 100/95. The milk price paid is the reference price adjusted for actual fat and protein contents and actual quality.

Besides variation in the reference price Lactalis -like the other French companies- does not have separate seasonal bonuses or deductions and does not pay supplementary payments.

Pays de la Loire is the most important milk producing region with about 15 % of the national milk deliveries in France. In the comparable milk price for Lactalis the premium for milk control and the so-called specialisation premium are included.

Graph 4.4: Milk price composition of Lactalis



- The major part of the milk price forms the 'reference price' adjusted for actual fat and protein The reference price generally follows the national recommendations
- Quality deductions for milk with tbc > 50,000 or scc > 250,000 per ml;
- There is a bonus for milk control and a premium for specialised farmers ('prime de specialisation').
- There are no seasonal bonuses or deductions.

[6] All the other countries - except United States of America- express their protein level in crude protein. Crude protein includes also non-protein sources. True protein is about 95% of crude protein (or crude protein is about 100/95xtrue protein).

4.8. Nordmilch

The milk payment of Nordmilch is -like Humana Milchunion- based on a basic price ('Grundpreis') adjusted for actual fat and protein. The basic price can vary monthly.

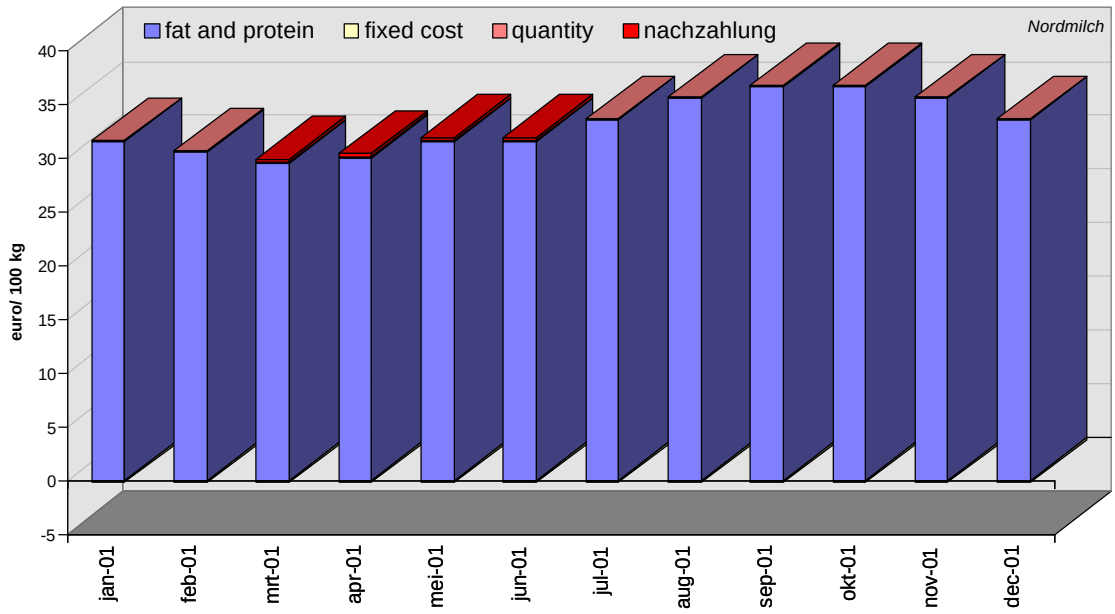
Fixed costs per month and per collection are deducted.

Nordmilch made retrospective payments for deliveries from March to June 2001. These additional payments ("Nachzahlungen") are included in the milk prices of these months.

Since January 2001 Nordmilch gives a quantity bonus for annual deliveries > 200,000 kg.

A correction is made for invested capital based on member participating units. This correction is integrated in the rolling average milk price of Nordmilch (in the milk price publications this is the negative figure for supplementary payment).
(Because underlying graph, like the other graphs in this chapter, only shows advance payments, the adjustment for interest loss can not be found in graph 4.8).

Graph 4.8: Milk price composition of Nordmilch



- The basic price (grundpreis) for 3.7% fat and 3.4% protein is the main contribution to the milk price; this basic price is variable
- There is a quantity bonus for annual deliveries > 200,000 kg
- Nachzahlung: additional payments for milk deliveries from March to June
- Fixed costs: small monthly deductions per kg of milk delivered (hardly visible in graph 4.8)
- There are no seasonal bonuses or deductions.

4.9. Sodiaal

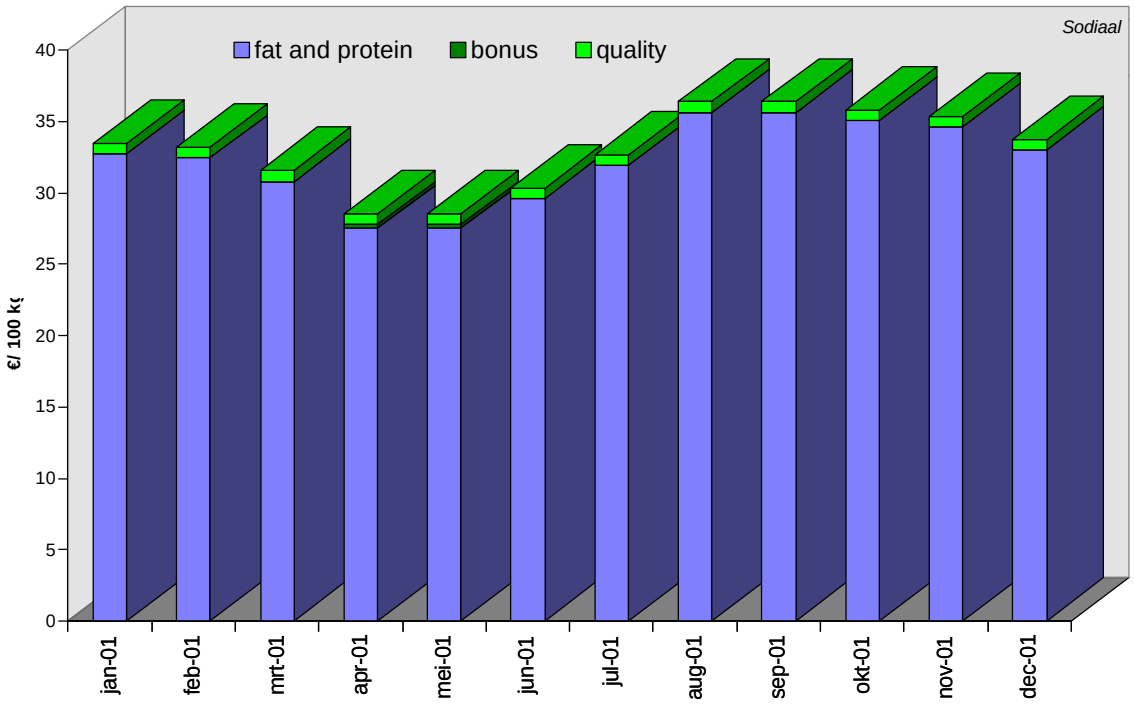
This is a new company for the milk price comparison. Sodiaal is one of the largest milk processors in France collecting more than 10% of French milk. The total number of producers of Sodiaal is 13,000. The average output per producer is 155,000 litre.

The milk payment system studied in this comparison belongs to the northern Pas de Calais.
Like the other French dairies, Sodiaal follows the national recommendations about price indexes (see 4.7).

Sodiaal supports high quality milk with a 'superior quality premium', so first class milk has a good target price since January 2001. Standard milk quality in the comparison is qualified for this premium.

No information is available yet about supplementary payments or investments of capital in the co-operation by the members. In the calculations a supplementary payments of zero is taken.

Graph 4.9: Milk price composition of Sodiaal



- The major part of the milk price forms the 'reference price' adjusted for actual fat and protein
- First class quality (tbc < 30,000 and scc < 300,000 and butyric acid < 1000 milk is rewarded with a bonus since January 2001
- An extra bonus is received in April and May
- There are no seasonal bonuses or deductions.

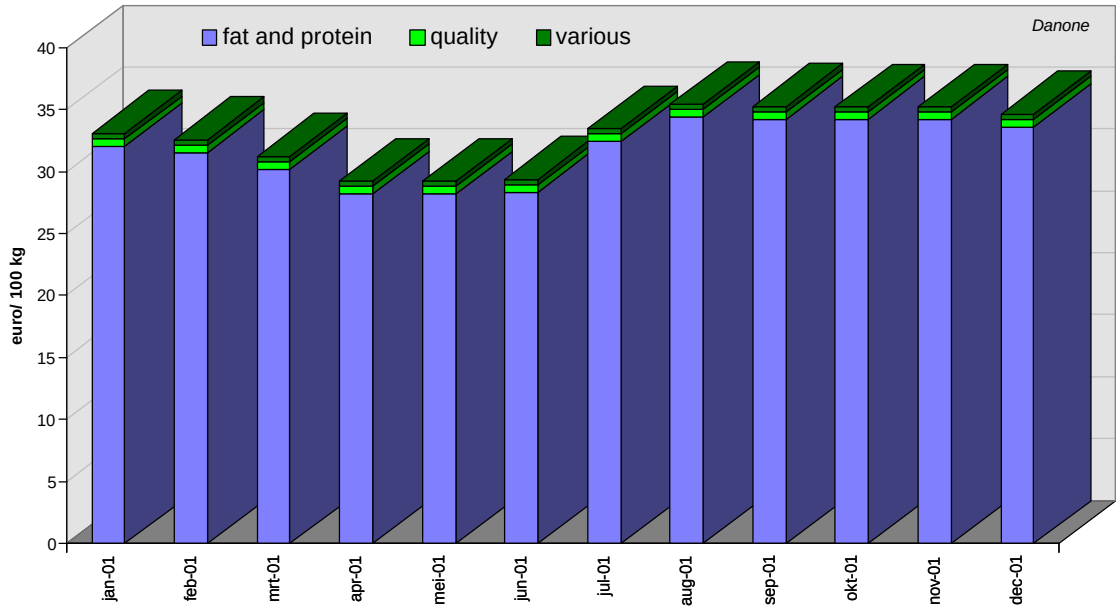
4.10. Danone (Pas de Calais)

The payment systems in France are based on Interprofessional regional agreements (see chap. 4.7).

The calculated Danone milk price is bound to the region Pas de Calais.

Danone is a private company.

Graph 4.10: Milk price composition of Danone



- The major part of the milk price forms the 'reference price' adjusted for actual fat and protein The reference price generally follows the national recommendations
- High quality milk (tbc < 50,000 and scc < 250,000 per ml) is rewarded with a bonus
- Various small deductions and premiums

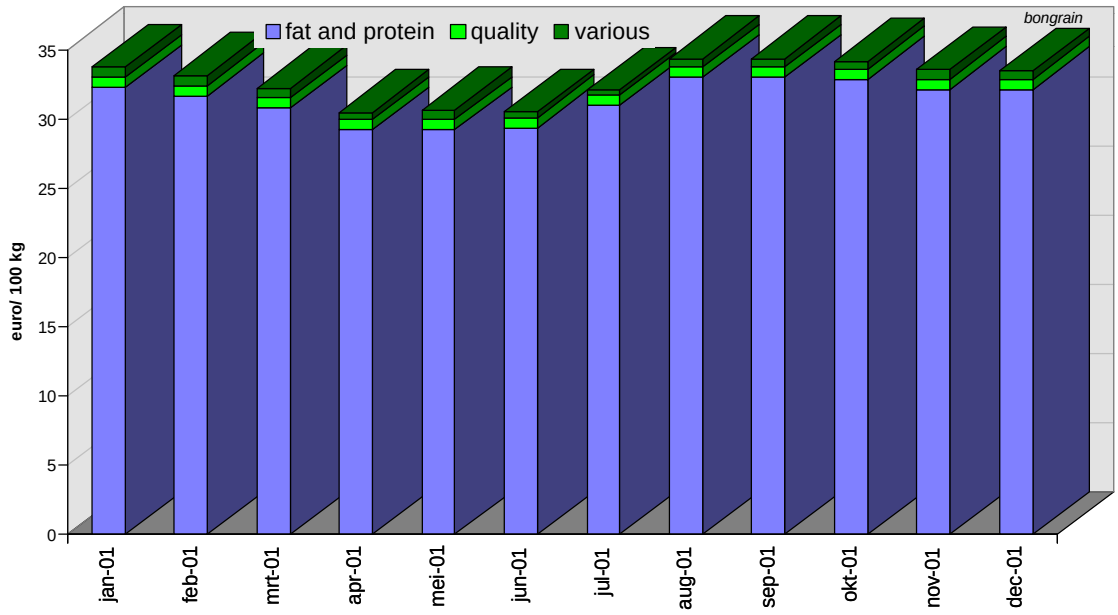
4.11. Bongrain CLE (Basse Normandie)

Like other dairy companies in France the milk price paid by Bongrain is the reference price adjusted for actual fat and protein contents and actual quality (see 4.7).

The milk price of Bongrain refers to the region Basse Normandie.

In the comparable milk price calculation for Bongrain, costs for milk analyses are deducted and a premium for milk control is included.

Graph 4.10: Milk price composition of Bongrain



- The major part of the milk price forms the 'reference price' adjusted for actual fat and protein The reference price generally follows the national recommendations
- High quality milk (tbc < 50,000 per ml and scc < 250,000 per ml) is rewarded with a bonus
- Various: small deductions and premiums

4.12. Belgomilk

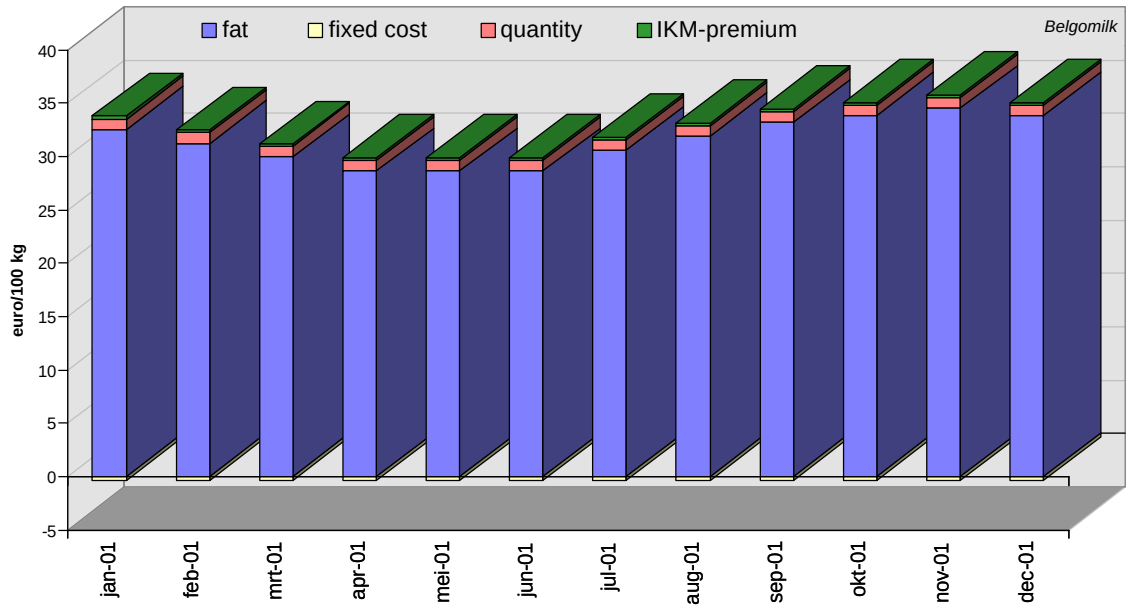
One of the characteristics of the Belgomilk payment system is the relatively high volume bonus from a yearly delivery of 170,000 litres and more. In the calculated milk price a significant quantity bonus is included, which corresponds with an annual delivery of 350,000 kg. The average delivery per supplier for Belgomilk however is about 160,000 kg/year.

Since January 2001 farmers of Belgomilk receive an IKM-premium (0.10 BEF/l or 0.25 eurocent/l). IKM is an integral quality system for dairy farming in Belgium. The IKM-certificate guarantees a safe product. Most of the farmers of Belgomilk qualify for this premium.

Though the qualifying criteria for the so-called AA- premium comply with the standards of 24,999 and 249,999 for the total bacterial count and somatic cell count respectively, the AA-premium (0.74 euro/ 100-kg) has not been included in the calculated milk price. The reason is that other qualifying criteria for this premium (e.g. animal health) mean that only about 30% of the milk is qualified.

Belgomilk had no supplementary payments for 2001.

Graph 4.12: Milk price composition of Belgomilk



- Fat prices and protein prices are variable
- Fixed cost: monthly deductions per kg and per delivery
- The quantity bonus is relatively large
- Farmers receive an IKM-premium since 2001

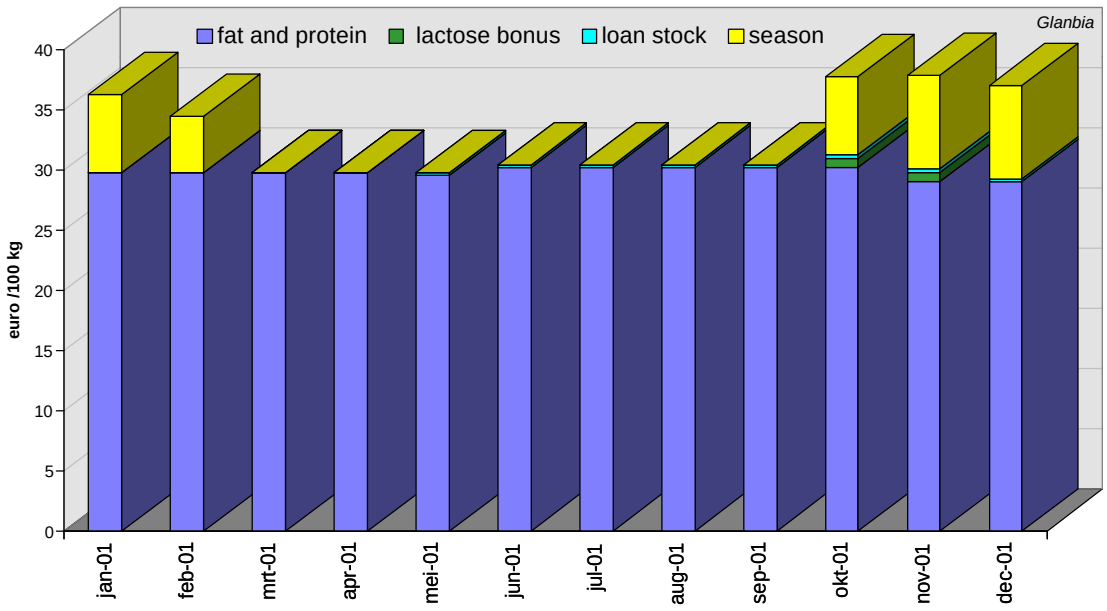
4.13. Glanbia

The price of Glanbia is based on manufacturing milk only. About 90% of Irish milk production is used for manufacturing milk, only 10 % for liquid milk. Liquid milk suppliers have a separate price schedule. The weighted average price for all Irish milk would add about 3% to the price for manufacturing milk in this publication. Because liquid milk is relatively very important for Glanbia their weighted average for all milk will be a about 3,5% more than prices paid for manufacturing milk.

The main characteristic of the Irish milk production is the high seasonal fluctuation. As a consequence Glanbia pays very high winter milk bonuses.

Since April 2001 Glanbia milk suppliers get one unit of convertible loan stock (1 pence per gallon (ppg) or 0.28 eurocent/litre) as part of the milk price. In five years, the accumulated loan stock will be converted to a special class of shares where they will get a one-for-two bonus. Effectively this is a 50 percent return. For this reason the payment of these units are part of the milk price.

Graph 4.13: Milk price composition of Glanbia



- The winter bonuses from October to February cause large seasonal fluctuations in the milk price.
- A lactose bonus was received in October and November
- A convertible loan stock is part of the milk price since April 2001

4.14. Arla Foods Sweden

Since the merger (April 2000) between Arla and the Danish MD Foods, Arla Foods is working on harmonisation process of the milk pricing system, that will be definite in October 2003. As long as different prices are paid to Danish and Swedish producers, both milk prices are calculated in this milk price comparison.
The financial year of Arla Foods starts in October and ending September 30. Because the basic milk price is only adjusted at the start of the financial year, the milk price of Arla Foods is generally fixed troughout the year.Since January 2001, Arla has stopped paying seasonal bonuses and deductions as part of the monthly milk payment. The fact that seasonal adjustments are no longer part of the milk payment has major consequences for the monthly milk price of Arla Foods Sweden. Like in Denmark from January 2001 onwards all seasonal bonuses and deductions are paid/received as a lump sum after the end of the financial year.

Before the merger with MD Foods there were no supplementary payments, because Arla aimed at maximising account payments. This has changed since Arla Foods did pay supplementary payments for the 15-month period from July 2000 until September 2001. These payments are corrected for invested capital and date of payment. The most recent supplementary payment has been applied to the last three months of 2001, that is the (same) supplementary payment that has been paid out over the financial year '00/'01.
Currency fluctuations have a substantial impact on the milk prices of Arla Foods. On average the Swedish Krona declined by 8.7% in 2001 against the euro compared to 2000. This caused a similar reduction of the milk prices expressed in euro!

Graph 4.14: Milk price composition of Arla Foods (Sweden)

- The basic price for 4.2% fat and 3.4% protein is the main contribution to the milk price.
- No seasonal adjustment since January 2001
- Fixed cost: small deduction per delivery (hardly visible in graph 4.14).
- High quality milk (tbc < 100,000 and scc < 250,000 per ml) is rewarded with a premium
- Currency devaluation (-8.7%) has had a substantial impact on the milk prices of Arla Foods in 2001.

4.15. Express Dairies

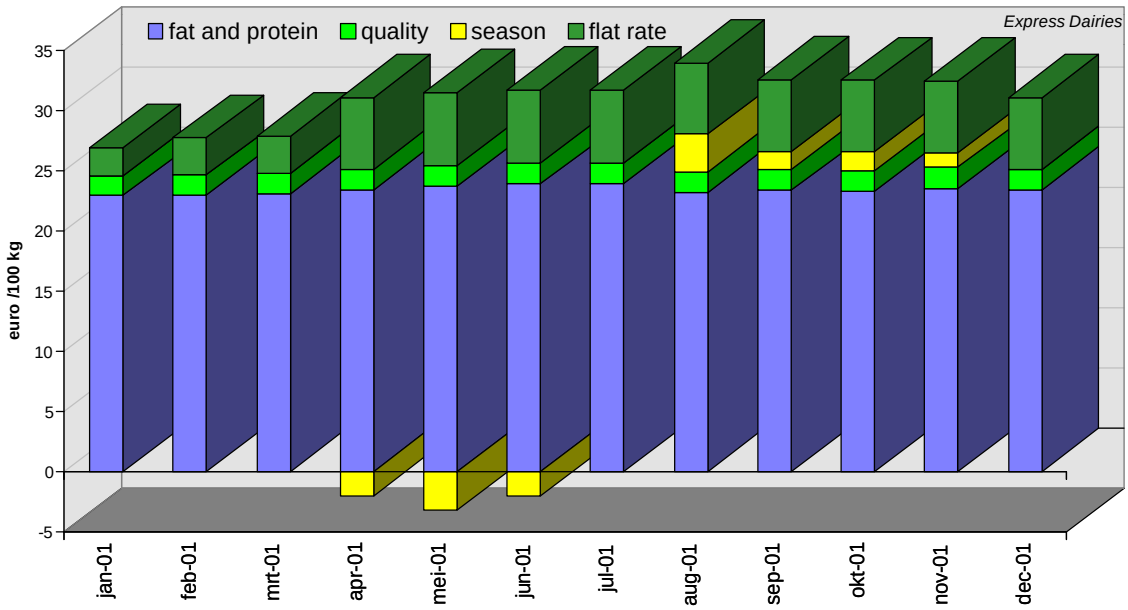
Express Dairies is a plc (public limited company). Notwithstanding the fact that most shares are held by farmer suppliers, shares are quoted at an external stock exchange. No correction is made for invested capital (and paid dividend is also not included).

Express Dairies limits milk payment for protein to a maximum of 3.30%. This is due to their high liquid milk sales, which makes it difficult to earn a return on higher protein contents.

The milk price calculation of Express Dairies is based on input from South England. Depending on the distance to the factory different milk pricing is possible.

Since October 2000, the farmers of Express Dairies receive huge 'flat rates' as part of the milk price. From April 2001 onwards they have also received another (smaller) bonus, the 'direct supplier supplement'. These bonuses were meant as a direct support of the milk price paid to the producers. These extra payments resulted in a bonus of almost 6 €/100 kg, about one fifth of the milk price.

Graph 4.16: Milk price composition of Express Dairies



- The fat and protein prices (max. 3.30%) are constant during the year
- Seasonal adjustments: spring deduction and winter bonus
- High quality milk (tbc < 55,000 and scc < 250,000 per ml) is rewarded relatively large premiums
- Huge flat rate bonus (including direct supplier supplement) as direct support of the milk price

4.15. Golden Vale (Southern Ireland)

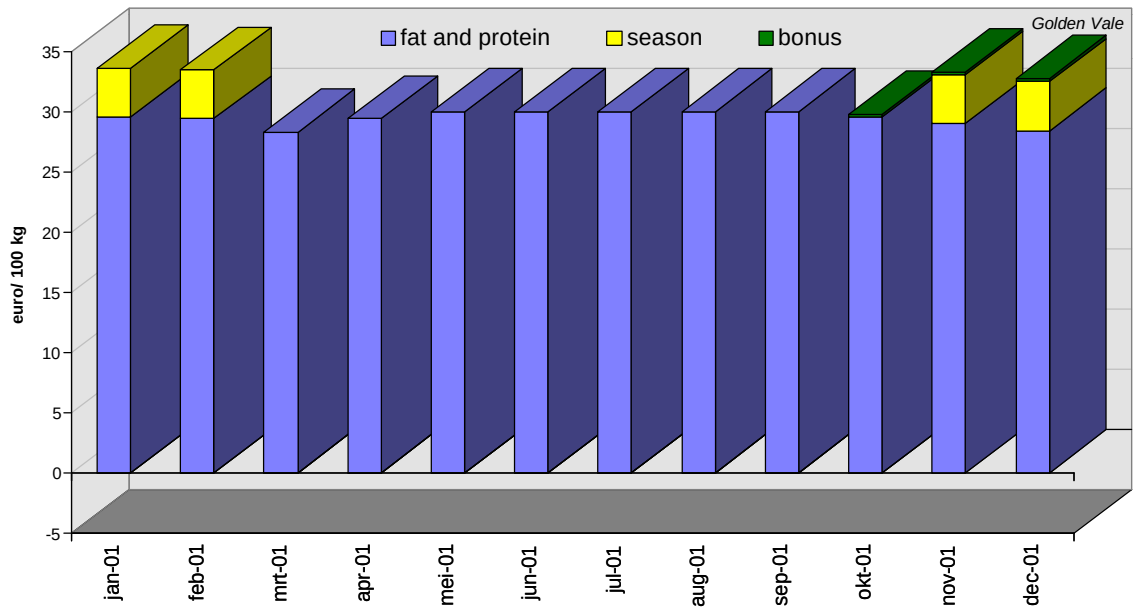
Since September 20021 Golden Vale has been acquired by the Kerry Group. The first payout by Kerry was for deliveries of October. Because the main part of the year the payouts were independent of Kerry, is chosen to refer to the company as 'Golden Vale' in this report.

The Golden Vale milk price is based on manufacturing milk.

The winter milk bonus from November until February of 20 pence per gallon does not apply to all milk delivered in this period but to a quantity corresponding with 4 X December or January delivery. Based on the national seasonal pattern this quantity is estimated at 75% of total milk delivered in that period. For this reason the bonus calculated in the milk price is 15 (= 0,75 x 20) pence per gallon from November until February.

Golden Vale is a private company with no supplementary payments.

Graph 4.15: Milk price composition of Golden Vale (October onwards Kerry Group)



- Fat and protein prices are relatively stable
- Large winter bonuses for deliveries of November to February
- Since October a temperature bonus is part of the milk price
- Quality deductions are applied to milk with a tbc > 50,000 per ml.

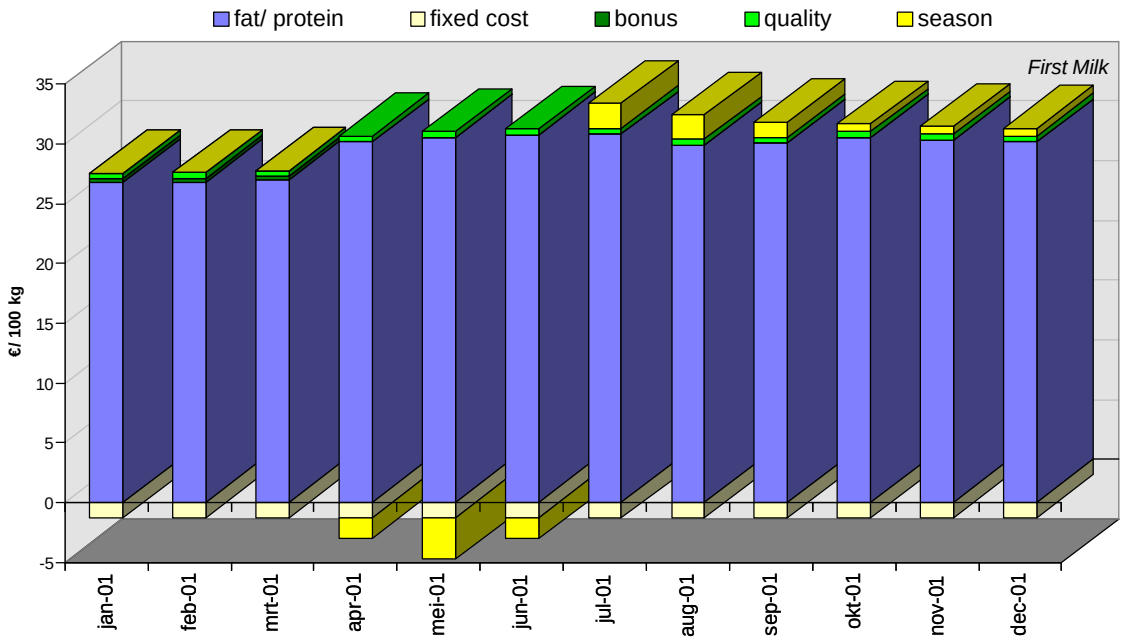
4.17. First Milk

First Milk is the result of a merger of 'Axis' and 'Scottish Milk' in 2001. Milk prices before April 2001 are based on the payment system of Axis[7].
With the merger some changes were applied in the payment system, among which increased prices for fat and protein, and another method to allocate standing charges. These charges are unfavourable for small companies (< 110 000 litre-year) since the constant cost is calculated on the first 300 litres a day.

Because members receive remuneration in line with market rates in respect of invested capital no correction has been made to take account of capital investments by members.

There has been no supplementary payment for 2001.

Graph 4.17: Milk price composition of First Milk



- First Milk has increased the fat price and protein price since April (since the merger). Fat and protein prices are generally stable.
- Seasonal adjustments: summer deductions and winter bonuses
- Fixed cost: volume deduction on the first 300 litre a day
- A “level delivery bonus” is part of the milk price from January to March
- Quality: there are premiums for milk with tbc < 65,000 and deductions if scc > 250,000 per ml.

[7] April 1st 2000 Milk Marque split into 3 regional co-operatives, i.e. Zenith (North) , Axis (Mid) and Milk Link (South). Before this date milk Axis prices are based on Milk Marque.

4.18. Milk prices USA and New Zealand

The milk prices of the United States and New Zealand give an impression of the milk price development and the price level outside the European Union.

USA

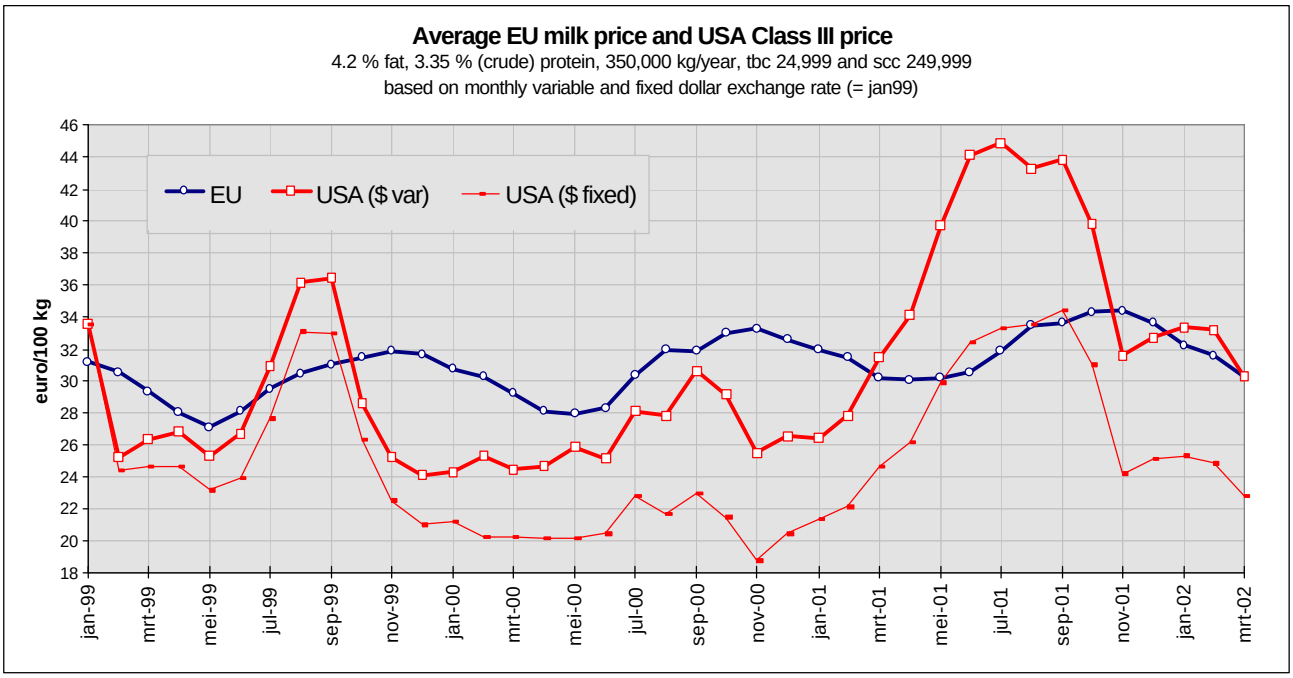
The milk price calculated for the USA is based on the USDA announcement of monthly Class III and component prices and is adjusted to take account of the standards adopted for fat, protein and somatic cell count.

The Class III price can be seen as a kind of minimum milk price paid to producers. The class III price is based on milk that is processed into cheese. Because part of the milk is also processed into higher value added dairy products, the actual paid out prices to producers will be higher.

Average Class III milk price in the USA of 36.68 euro per 100 kg is about 13 % higher as average EU milk price.

The Class III milk price has a relatively close relationship to the market resulting in large fluctuations in comparison to the European milk prices (see Graph 4.18.1).

Graph 4.18.1 USA class III price developments versus average EU milk prices based on variable US$ and fixed US$ exchange rate. The average EU milk prices are based on the international milk price comparison.

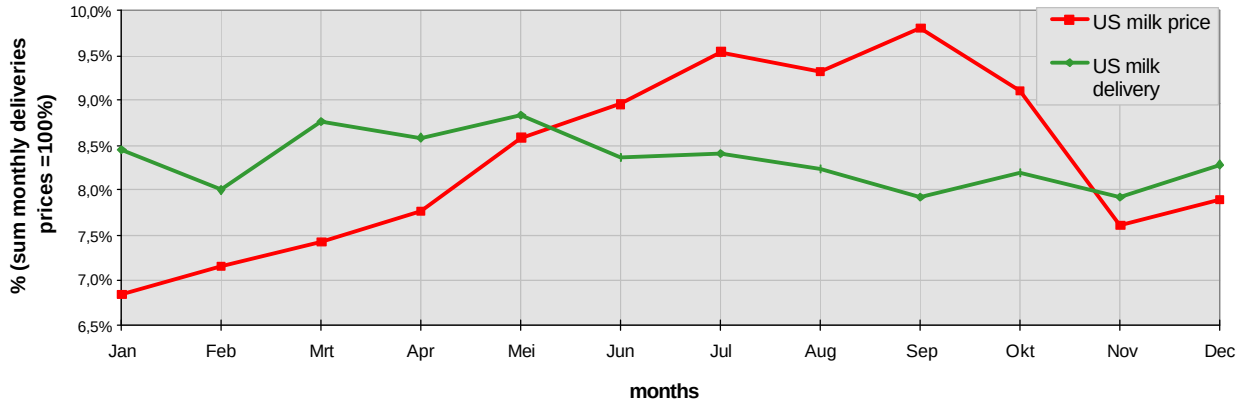


- There is a large impact of exchange rate on class III milk price (in €/100kg)
- The class III price peaks at the end of the summer in 2001, supported by a strong dollar.
- Average European milk prices show a more regular seasonal pattern
- The class III producer price has narrow ties with the market in comparison with European milk prices, causing (more) volatile price development.

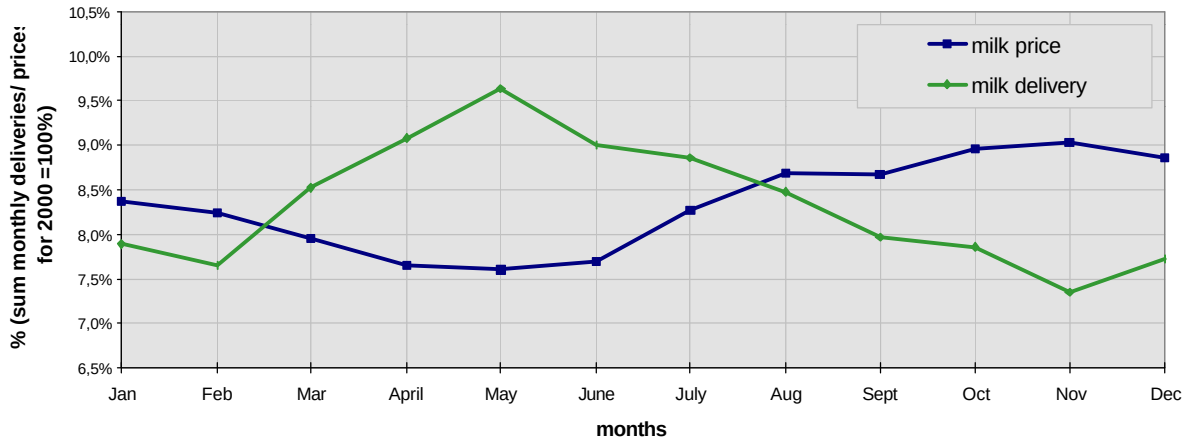
- From January 1999 until March 2002 average EU milk price and average Class III producer price are expressed in euro almost the same. If the Class III price is based on a fixed exchange rate (January 1999) average EU milk price is about 19 higher for the same period

Class III milk price generally peaks at the end of the summer (September). In Europe the highest milk price of the season are (on average) paid for deliveries in the last 3 months of the year. The relationship between milk supply and the milk price is shown in graph 4.18.2 (USA class III) and 4.18.3 (EU).

Graph 4.18.2 Seasonal pattern of milk deliveries and the class III producer price (USA).
Milk deliveries are based on the monthly supply of 20 states ('00/'01); class III milk price according International Milk price Comparison '00/'01.



Graph 4.18.3 Seasonal pattern of milk deliveries and milk price in the European Union.
Based on national milk deliveries 2000 (Be, De, Dk, Fr, Fin, GB, Ie, It, Nl, Se) and average monthly milk prices of 2000 according the International Milk price Comparison.



The seasonal pattern shows an (inverse) sinusoid for milk deliveries and prices. For the EU this pattern is more regular compared to the USA.

New Zealand

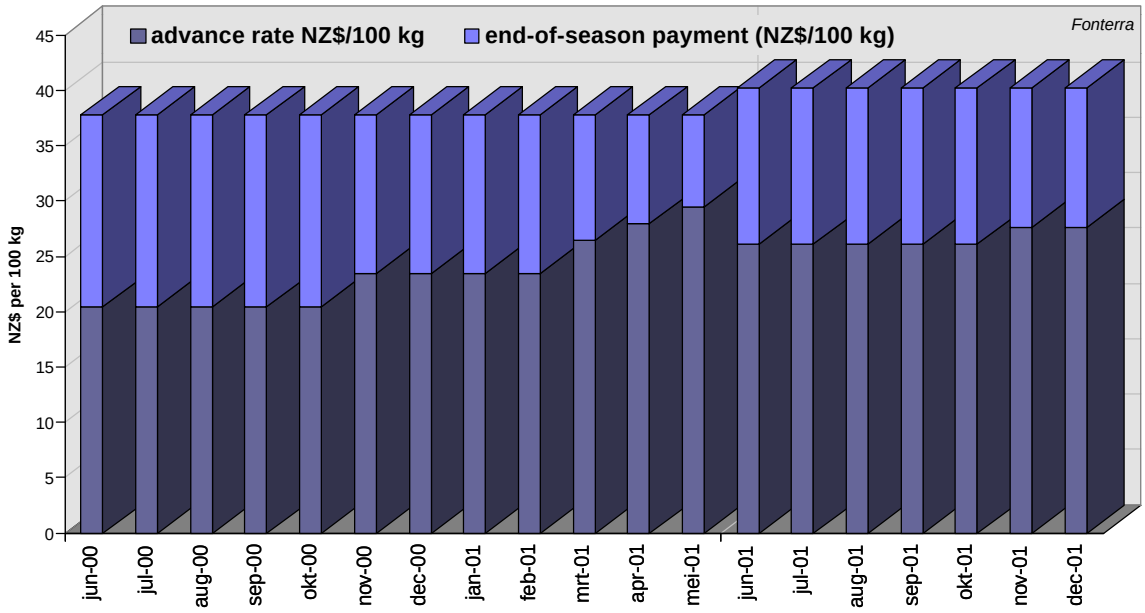
New Zealand milk prices are based on prices paid by the Fonterra Co-operative Group Ltd (Fonterra). Fonterra is the result of the merger in June 2001 of New Zealand Dairy Group (NZDG) and Kiwi Co-operative Dairies Ltd (Kiwi), including the operations of the New Zealand Dairy Board. Before the merger milk prices in the comparison were based on payments of the NZDG.

Because of the dominant position that Fonterra would initially have in the markets for raw milk and processed dairy products, Fonterra has an open entry and exit available to all farmers and sharemilkers wishing to supply milk to it or any other processor.

The monthly (advance) milk prices of New Zealand is based on the 'advance payments' of Fonterra that are published in the monthly bulletin 'Farmlink'. The advance milk price starts modest in June but increases during the season that continues until May. The end-of-the-season payment is the definitive milk price for the dairy season (see graph 4.18.3). In the milk price comparison, the rolling average milk price of Fonterra is based on the (most recent forecast) of the end-of-season payout. The end-of-season payout for season 1999/2000 was 3.75 NZ$/ kg milksolids [8], for season 2000/2001 this was 5.00 NZ$/ kg milksolids and for season 2001/2002 this is 5.33 NZ$/kg milk solids.

Milk prices have been adjusted for 4.2% fat and 3.35 % protein. The prices have not been adjusted for invested capital. Dairy farmers who supply to Fonterra have to buy shares related to the quantity of milk delivered.

Graph 4.18.3. The milk price of Fonterra during the dairy season (June to May) '00/'01 and season '01/'02 until the end of calendar year 2001.



- The dairy season in New Zealand runs from June to May
- The advance payment increases during the season
- The end-of-season price is the definite milk price for the dairy season. Forecasts of the end-of-season price are adjusted during the season depending on the market situation.

[8] Milk solids is the sum of fat and protein contents.

5. Milk quality adjustment

The present publications of the milk price comparison are based on a standard quality with total bacterial counts of 24,999 and somatic cell counts of 249,999. Former publications have been based on a quality standard of tbc 50,000 and scc of 300,000.

The consequences of the quality adjustment are shown in table 5.1.

Table 5.1 Rewards/ incentives as part of the milk price 2001 received for the quality standard of tbc/scc 24,999/ 249,999 compared to (the former standard counts of) 50,000/ 300,000; and consequences for ranking (last column). The quality adjustments are based on normal standard conditions (with the exception of quality).

		Quality adjustment (€/100 kg)			
	tbc **scc**	24,999 249,999	50,000 300,000	Net difference (€/100 kg)	Ranking (50'/300,000)
1	**Parmalat**				1
2	**Kymppi**	1.65	0	+ 1.65	2
3	**Friesland Coberco Dairy Foods**				3
4	**Humana Milch Union eG**				4
5	**Campina**				5
6	**Arla Foods (Denmark)**	1.21	0.54	+ 0.77	**8**
7	**Lactalis**		-1.18	+ 1.18	**12**
8	**Nordmilch**				**6**
9	**Sodiaal**	0.74	0	+ 0.74	**10**
10	**Danone**	0.59	0	+ 0.59	**9**
11	**Bongrain CLE**	0.74	0	+ 0.74	11
12	**Belgomilk**				**7**
13	**Glanbia**				13
14	**Arla Foods (Sweden)**				14
15	**Express Dairies**	1.72	0.63	+ 1.09	16
16	**Golden Vale**				15
17	**First Milk**	0.47	-0.31	+ 0.78	17

- Although the adjustment of standard tbc and scc has not changed the ranking of the upper five, nor the last five places, the absolute consequence for the individual milk prices is substantial.

- The net effect of the adjustment on the milk price is between + 0.59 € /100 kg and + 1.65 €/100 kg for respectively Danone, Sodiaal, Bongrain, Arla Foods (DK), First Milk, Express Dairies, Lactalis and Kymppi (in increasing order of net effect).

- The present standard milk with tbc 24,999 and scc 249,999 qualified for quality premiums as part of the milk price of First Milk, Danone, Bongrain, Sodiaal, Arla Foods (DK), Express Dairies and Kymmpi. There are no deductions for the present quality standard.

6. Conversion factor litre-kilogram

There is no (international) agreement whether the right factor to convert a volume milk to weight is 1.03 or 1.02.

Standard assumption of the milk price comparison is that 1 litre of milk corresponds to 1.03 kilogram (see 3.5)

In order to make all milk prices comparable Danish, Swedish and German milk prices are multiplied with a factor of 1.02/1.03.

The underlying table shows the consequences of the adjustment of the litre-kilogram conversion factor for the milk prices of Humana Milch Union, Nordmilch and Arla Foods and the consequences for the ranking of the companies based on (standardised) milk price.

Table 6.1 Milk prices 2001 of Humana, Nordmilch and Arla based on a litre-kilogram conversion factor of 1.03 compared to milk prices based on their national litre-kilogram conversion factor of 1.02, and consequence for the ranking.

		adjustment to standard 1ltr =1.03 kg	Se/ DK/ De: 1ltr = 1.02 kg	Net difference (€/ 100 kg)	Ranking
1	**Parmalat**	38.47			1
2	**Kymppi**	35.29			2
3	**Friesland Coberco Dairy Foods**	33.61			3
4	**Humana Milch Union eG**	33.18	33.50	+0.32	4
5	**Campina**	32.88			**7**
6	**Arla Foods (Denmark)**	32.79	33.11	**+0.32**	**5**
7	**Lactalis**	32.79			**8**
8	**Nordmilch**	32.76	33.08	**+0.32**	**6**
9	**Sodiaal**	32.76			9
10	**Danone**	32.66			10
11	**Bongrain CLE**	32.59			11
12	**Belgomilk**	32.23			12
13	**Glanbia**	31.52			13
14	**Arla Foods (Sweden)**	30.73	31.03	+0.30	14
15	**Golden Vale**	30.22			15
16	**Express Dairies**	30.21			16
17	**First Milk**	28.76			17

- Based on their national conversion factor the milk prices of Humana, Nordmilch and Arla Foods would have been 30 or 32 eurocent higher, that is 1% of the milk price.

- The consequence for the ranking in 2001 is that Arla Foods (DK) would take the 5th position (now 6) and Nordmilch would be in the 6th position (now 8).

Appendix 1 Milk prices 1999, 2000 and 2001

Table A1. Standardised milk price calculations for 2001, 2000 and 1999 deliveries (euro/100 kg)
(Price per 100 kg standard milk with 4.20 % fat, 3.35 % protein, total bacterial count 24,999/ per ml, somatic cell count 249,999 per ml and a yearly delivery of 350,000 kg, VAT and levies excluded, supplementary payments for end-of-the-year-profit-distributions are included.)

		2001	2000	1999	2001/ 2000	2001/ 1999
Parmalat 4)	It	38.47	36.24	37.26	6.2%	3.2%
Kymppi	Fin	35.29	33.94	33.61	4.0%	5.0%
Friesland Coberco Dairy Foods	Nl	33.61	31.55	30.26	6.5%	11.1%
Humana Milch Union eG	De	33.18	30.51	29.24	8.8%	13.5%
Campina	Nl	32.88	30.48	30.46	7.9%	7.9%
Arla Foods (Denmark)	Dk	32.79	31.93	31.47	2.7%	4.2%
Lactalis	F	32.79	31.46	30.73	4.2%	6.7%
Sodiaal	F	32.78	31.66	30.15	3.5%	8.7%
Nordmilch	De	32.76	29.89	29.13	9.6%	12.5%
Danone	F	32.66	31.50	30.73	3.7%	6.3%
Bongrain CLE	F	32.59	31.45	30.70	3.6%	6.2%
Belgomilk	B	32.23	31.39	28.17	2.7%	14.4%
Glanbia	Ie	31.52	30.72	30.00	2.6%	5.1%
Arla Foods (Sweden)	Se	31.73	34.58	33.00	-11.1%	-6.9%
Express Dairies	UK	30.27	26.74	27.76	13.2%	9.0%
Golden Vale	Ie	30.22	29.17	28.44	3.6%	6.3%
First Milk	UK	28.76	25.32	25.33	13.6%	13.5%
AVERAGE MILK PRICE 1)		32.56	31.09	30.38	5.0%	7.5%
Other milk prices						
USA 2)	USA	36.68	26.43	28.75	38.8%	27.6%
New Zealand 3)	NZ	18.40	16.64	13.65	10.6%	-4.9%

Remarks:

1. Arithmetic mean
2. Own calculation based on USDA monthly publications of Class III prices adjusted for 4.2 % fat, 3.35 % (crude) protein and somatic cell count of 249,999.
3. Based on paid out prices by Fonterra (New Zealand Dairy Group before the merger in June 2001)
4. Milk prices Parmalat 2001/2000 based on different sources (see chap. 4.1)

Graph A1. Milk prices (€/100 kg) for 2001, 2000 and 1999 deliveries (based on table A1).