

**EVALUATION OF THE SCHOOL MILK
MEASURE**

FINAL REPORT

For

DGVI European Commission

Submitted by

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Contents

S1. Executive summary.....	v
S1.1. Purpose of the evaluation	v
S1.2. Evaluation goals, methods and data used	v
S1.3. Evaluation findings	v
S1.4. Recommendations.....	ix
Part 1: Evaluation objectives and methodology	1
1. Introduction	1
1.1. Policy intervention logic.....	2
1.2. Delivery systems.....	3
1.3. Purpose of the evaluation	3
1.4. Methods recommended	5
1.5. Research methodology	5
1.5.1. Underlying assumptions, causal links and hypotheses to be examined	5
1.5.2. Design of research.....	6
1.5.3. Methodology (evaluation instruments) used	8
Part 2: Findings	11
2. Scheme mechanisms, arrangements, distribution, management costs and monitoring methods....	11
3. Impact of school milk subsidy on prices paid for milk products by students	14
3.1. Member State case studies	14
3.1.1. UK.....	14
3.1.2. France.....	17
3.1.3. Germany	20
3.1.4. Finland	23
3.1.5. Sweden	24
3.1.6. Spain.....	26
3.2. Comparison across the member states	28
3.3. Overall impact of measure on price paid by beneficiaries	30
4. Availability of scheme milk products in school.....	33
4.1. Member State case studies	33
4.1.1. The UK.....	33
4.1.2. France.....	34
4.1.3. Germany	36
4.1.4. Finland	36
4.1.5. Sweden	37
4.1.6. Spain.....	38
4.2. Comparison across the member states	40
4.3. Impact of scheme on product availability	41
5. Promotional activities.....	45
5.1. Promotional and advertising campaigns and expenditure: general.....	45
5.1.1. The UK.....	45
5.1.2. France.....	46
5.1.3. Germany	47
5.2. Educational campaigns and their nutritional effects	47
5.2.1. Comparison of national scheme milk campaigns across the Member States	48
5.3. EU school milk scheme promotion	49
5.3.1. UK.....	49

5.3.2. France.....	50
5.3.3. Germany.....	50
5.3.4. Finland.....	51
5.3.5. Sweden.....	51
5.3.6. Spain.....	51
5.4. Overview of the scheme promotional activities and effectiveness in attaining education objectives (improving knowledge of the nutritional qualities of milk products).....	52
6. Number of beneficiaries.....	55
6.1. Estimation of the number of beneficiaries.....	55
6.2. Key factors determining estimated number of beneficiaries and maximum subsidy entitlement up-take.....	56
6.3. Factors influencing coverage (efficiency and effectiveness in reaching target beneficiaries)....	60
7. EU milk consumption: general and scheme specific comparisons.....	62
7.1. Trends in general supply/demand balances for milk products.....	62
7.1.1. EU level.....	62
7.1.2. The UK.....	63
7.1.3. France.....	64
7.1.4. Germany.....	65
7.1.5. Other Member States.....	66
7.2. EU school milk scheme usage: comparison with milk product consumption in general.....	67
7.2.1. EU level.....	67
7.2.2. The UK.....	70
7.2.3. France.....	71
7.2.4. Germany.....	72
7.2.5. Finland and Sweden.....	72
7.2.6. Spain.....	73
7.3. Summary table.....	75
7.4. 'Policy on' versus 'policy off' analysis.....	76
7.4.1. Comparisons between Member States operating different scheme elements.....	76
7.4.2. Comparisons within Member States: before and after changes.....	78
8. Main factors influencing milk consumption levels.....	81
8.1. Price of milk and its impact on milk consumption.....	81
8.1.1. The UK.....	81
8.1.2. France.....	82
8.1.3. Germany.....	83
8.2. Competitiveness of milk versus other drink products.....	84
8.2.1. The UK.....	84
8.2.2. France.....	84
8.2.3. Germany.....	85
8.3. Consumer habits and taste for milk and milk products.....	85
8.3.1. Milk and milk product consumption trends in the EU.....	85
8.3.2. Per capita consumption.....	87
8.4. Consumer habits and taste for milk and milk products in the UK, France and Germany: summary.....	88
8.5. Effectiveness of the impact of the EU School Milk Scheme (price subsidy) on the consumption of milk: assessment of the relative importance of price as a factor affecting consumption.....	90
8.6. Effectiveness of the impact of the EU School Milk Scheme (price subsidy) on the consumption of milk: form of consumption and relevance to tastes and customs.....	91

9. Scheme disposal costs and value for money considerations	95
9.1. Disposal costs of the scheme relative to other forms of disposal using price subsidies	95
9.2. Comparison of the School Milk Measure with promotional measures	97
10. Relevance (pertinence) of the scheme	99
10.1. Intervention logic	99
11. Conclusions and recommendations	101
11.1. Conclusions	101
11.1.1. Methodology used	101
11.1.2. General conclusion	101
11.1.3. Scheme efficiency	101
11.1.4. Scheme effectiveness	107
11.1.5. Scheme relevance	111
11.2. Recommendations	112
Appendix 1: Scheme mechanisms and arrangements	115
A1.1. UK	115
A1.1.1. Milk products provided under the scheme	115
A1.1.2. Eligible educational establishments	116
A1.1.3. Management of the scheme	116
A1.1.4. Administrative procedures for managing/claimant bodies	117
A1.1.5. Monitoring method	118
A1.1.6. Provision and distribution of subsidised milk products	119
A1.1.7. Up-take by schools	120
A1.2. France	121
A1.2.1. Milk products provided under the scheme	121
A1.2.2. Eligible education establishments	122
A1.2.3. Management of the scheme	122
A1.2.4. Administrative procedures for managing bodies	123
A1.2.5. Scheme operation and monitoring method	123
A1.2.6. Provision and distribution of subsidised milk products	124
A1.2.7. Up-take by schools	124
A1.3. Germany	125
A1.3.1. Milk products provided under the scheme	125
A1.3.2. Eligible education establishments	126
A1.3.3. Management of the scheme	126
A1.3.4. Administrative procedures for managing/claimant bodies	126
A1.3.5. Monitoring method	127
A1.3.6. Provision and distribution of subsidised milk products	128
A1.3.7. Up-take by schools	129
A1.4. Finland	130
A1.4.1. Milk products provided under the scheme	130
A1.4.2. Eligible education establishments	131
A1.4.3. Management of the scheme	131
A1.4.4. Administrative procedures for managing bodies	131
A1.4.5. Scheme monitoring method	132
A1.4.6. Provision and distribution of subsidised milk products	132
A1.4.7. Up-take by schools	133
A1.5. Sweden	133
A1.5.1. Milk products provided under scheme	133

A1.5.2. Eligible education establishments.....	133
A1.5.3. Management of the scheme	134
A1.5.4. Administrative procedures for managing/claimant bodies.....	134
A1.5.5. Scheme monitoring method.....	134
A1.5.6. Provision and distribution of subsidised milk products.....	135
A1.5.7. Up-take by schools.....	135
A1.6. Spain.....	136
A1.6.1. Milk products provided under scheme.....	136
A1.6.2. Eligible education establishments.....	136
A1.6.3. Management of the scheme	137
A1.6.4. Administrative procedures for managing bodies.....	137
A1.6.5. Scheme monitoring method.....	138
Appendix 2: EU milk consumption patterns, UK, France and Germany	139
A2.1. The UK.....	139
A2.2. France.....	144
A2.3. Germany	148
Appendix 3: Milk promotion: educational role in improving nutrition.....	153
A3.1. Overview of milk and nutrition amongst the young.....	153
Bibliography	155

S1. Executive summary

S1.1. Purpose of the evaluation

The purpose of this study was to analyse how the mechanisms for implementing the School Milk Measure have performed, to assess the validity of the means implemented to achieve the objectives and to evaluate their efficiency and effectiveness.

The objectives against which the performance was assessed are the extent to which the measure helps expand the market for milk products¹ by maintaining or increasing the consumption of milk products by school children, encouraging the habit of consuming milk products, ensuring that milk products are available in schools at prices that can compete with alternative products and improving the image of and knowledge about milk products by providing information on their nutritional and other properties. The primary delivery mechanism used is the provision of a price subsidy.

S1.2. Evaluation goals, methods and data used

a) Key causal links and hypotheses examined

The hypotheses tested in the evaluation focused on the following:

- that by subsidising the price of milk products sold to schoolchildren, consumption of milk products will increase to a level that is higher than would otherwise have occurred;
- that the consumption of milk products can be positively influenced by encouraging the habit of consumption and that this pattern and level of consumption will continue as people age;
- that there is a positive link between consumption of milk products and the level of information and education about the positive health and nutrition benefits of consuming milk.

b) Methodology and data sources

The evaluation tools used were desk research and analysis supported by limited, qualitative interviews with representatives of managing agents, administering authorities and national government departments. The research focus was across six Member States. Primary data collection, especially amongst scheme beneficiaries was not undertaken.

Identifying clear causality between the scheme and specific outputs and objectives has not been possible for some aspects and the conclusions drawn are, in some instances based on limited data and qualitative perceptions. Whilst this represents a weakness of the evaluation it should be recognised that the limited time period and budget made available for the evaluation was set by the Commission and effectively constrained the evaluation to using these tools. Despite this the methodology used is considered to have been sufficient to enable reasonably robust conclusions (and recommendations) to be drawn. The relatively high degree of similarity in the findings found across the six countries examined also means that these findings are probably reasonably representative of the EU 15 as a whole.

S1.3. Evaluation findings

¹ It should be noted that only the objective relating to increasing consumption is explicitly stated in the founding regulation of the measure.

S1.3.1. General

One of the most important factors influencing take-up and operation of the scheme is Member States' national policies. This encompasses both policies towards the specific implementation of the EU scheme (eg, which options are taken up) and also broader social policies relating to the provision of education and health services. Consequently, in examining the findings and conclusions below it is important to place them within the context of Member States' School Milk Scheme-specific and broader national social policies.

S1.3.2. Scheme efficiency

The main findings relating to the scheme and its efficiency are as follows.

a) Impact of the measure on the prices paid by school children for milk

As a significant proportion of milk provided to schoolchildren is free (eg, liquid milk for drinking to nursery schools) or served as an ingredient or part of a meal (provided free in some countries), there is often no transparent price available for allowing a comparison between the price paid by schoolchildren relative to unsubsidised competing products. Nevertheless:

- where milk is provided as a drink and schoolchildren are required to pay for the drink themselves at time of consumption there is clear evidence of significant differences between the subsidised price and the price of milk available from normal retail channels;
- the price of subsidised liquid milk in schools was significantly lower than the price of competing products (where offered) such as mineral water, soft drinks and fruit juices;
- competition from other drinks tends to be more heavily influenced by non price factors (see below).

b) Impact of the measure on the availability of milk and milk products in schools

Factors external to the scheme are far more important in influencing product availability than the scheme. The most important factor is health and general education policy set at the national and school level. This is especially so at nursery and primary schools where only milk and limited alternatives are made available. Even at secondary schools where the opportunity to consume alternatives is greatest, the same factors determine availability of alternatives although the willingness of companies supplying competing drinks to provide free vending machines and to offer commission to schools on sales has also probably increased the availability of alternatives.

In terms of impact of the scheme on milk product availability there is very limited evidence of impact. For example, in the UK when the country opted out of the secondary school element of the scheme in 1994/95, consumption of milk in secondary schools was reported to have fallen by 20%. However, it is not possible to fully attribute this decline in consumption to the withdrawal of the scheme because of a lack of data. In addition, it is noted that milk product availability in the scheme is greater in some countries than others especially since the changes initiated to the scheme in 1994/95. It has however not been possible to identify empirical data relating to the reasons why some countries take up scheme options and others do not and whether these relate to the scheme. However, it is evident that external factors such as national budgetary savings and perceptions that the scheme has limited and declining take up have probably been important factors influencing scheme option take up at the Member State level. Overall, the School Milk Measure has probably had a very small, positive impact on product availability in schools.

c) Number of beneficiaries relative to target population

Scheme take-up across the EU in 1996/97 was equivalent to only 12% of the maximum subsidy entitlement volume. This compares with 19% in 1992/93. This suggests a relatively poor level of efficiency and effectiveness in reaching the target population especially as the Union expanded from 12 to 15 Member States during this period.

There are variations in take up across the EU which mainly reflect national and local policies on general health education rather than the scheme itself. Hence in relatively high uptake countries such as Finland and Sweden, product provision under in the scheme is wide, products for drinking made available to pupils reflect underlying consumption trends, milk plays a prominent role in health educational programmes, there is often limited/restricted access to alternative drinks (notably at primary and nursery levels), school milk is made freely available to nursery school children and all school children receive free milk products as part of free school meals. In contrast, relatively low uptake (eg, Germany) reflects a combination of limited product option take-up, no provision of additional national scheme aid, a wider availability of alternative drinks, very limited access to school meals (the main focus of consumption) and a common perspective amongst many in the education services that they should play only a limited role in the provision of health/nutritional education and information.

Whilst factors external to the scheme are the primary factors of influence for take up, the scheme itself contributes in a very limited way to increasing product availability and by offering milk at prices that are competitive relative to alternatives (see above). However, the scheme administrative and financial requirements are considered by some to have acted as a disincentive to scheme take up at the school level. This stems mainly from the time commitments required to implement and administer school milk and the requirement for schools to fund the purchase of milk and then wait up to four months before being reimbursed.

Overall, the scheme's efficiency and effectiveness in reaching its target population is poor. It probably makes a small positive contribution to increasing the level of product availability and consumption amongst schoolchildren.

S1.3.3. Scheme effectiveness

a) Impact of the scheme on the market for milk products

The volume of milk and milk products supplied under the scheme is extremely small relative to the size of the EU market (0.3% of total milk delivered to EU dairies in 1996/97). It is also declining in relative importance. This suggests that any net positive impact of the scheme on consumption levels identified in the study (see below) should be seen within this broader context of total EU consumption. At best, any impact of the scheme has been very small relative to the context of the total market and the scheme's primary objective.

b) Effectiveness in increasing consumption of milk products

Assessment of the relative importance of price as a factor affecting consumption

Price does not appear to be a major factor influencing take-up of milk and milk products by consumers including school children. This is clearly apparent given that in countries such as the UK, France and Germany, over the last five years:

- the price (real and nominal) of liquid milk has fallen yet consumption of liquid milk over the same period also fell;

- the price competitive position of liquid milk relative to soft drink has improved (ie, milk prices fell relative to soft drink prices) yet consumption of liquid milk decreased whilst consumption of alternative drinks such as fruit juices, soft drinks and mineral water increased.

This suggests that the main delivery mechanism of the School Milk Measure (price subsidy) is targeted at a factor of minor influence in determining consumption of milk and milk products. Not surprisingly, this means that its net impact on consumption is likely to be very small.

c) Effectiveness on consumption: the form of consumption and relevance to tastes and customs

Form of consumption and presentation

The majority of liquid milk consumed in countries such as France, Germany and the UK is with other products. For these forms of 'complementary product consumption', price of the milk is considered to be of negligible importance to the consumption level (eg, of breakfast cereals or hot drinks). Given that price has been shown above to be of minor importance to influencing consumption of milk *per se*, in cases where milk is consumed as a complementary product, the effectiveness of the subsidy scheme is even further diminished.

In relation to the form of consumption of other milk products, research identified from France only shows that a significant proportion of total cheese and yoghurt consumed tends to be with the mid day meal. This suggests that the scheme is reasonably effective in targeting this point of consumption for schoolchildren where yoghurts and cheese are provided within the scheme.

Relevance of product availability to underlying tastes and preferences

The eligible list of products available within the scheme leaves out some products for which there are underlying upward changes in consumption within the EU (notably semi-skimmed yoghurts, skimmed milk and low fat cheeses). Whilst this suggests that the scheme conditions relating to product eligibility may be contributing to reducing the effectiveness of the scheme in providing products for which there is increasing demand amongst schoolchildren, it should be recognised that factors external to the scheme are far more important in influencing product availability (see above). This factor has therefore had a marginal impact on effectiveness of the measure.

d) Contribution to encouraging the habit of consumption (after children leave school)

Limited evidence (from France) shows that the frequency of liquid milk consumption per week declines with age, especially after the age of 20 whilst the frequency of cheese consumption per week tends to increase with age. This suggests (if applicable across the EU) that these underlying consumption habit changes with age constrain the effectiveness of the measure in seeking to encourage the habit of liquid milk consumption but may assist in developing the habit of consuming cheese.

e) Effectiveness in improving knowledge of the nutritional qualities of milk products

The main finding of the research shows that the School Milk Measure has hardly figured in any milk product promotions across the EU. Consequently, the measure has probably had negligible effect on improving knowledge of the nutritional qualities of milk products. This is, however not surprising given that the School Milk Measure has no funding provision for promotional activities and is essentially a price subsidy measure only. The only way in which the scheme may make a positive contribution towards improving nutritional knowledge is by increasing product availability to school children and hence increasing the opportunity to consume. As indicated above the scheme has probably only made a very limited positive impact on product availability.

f) Value for money considerations

Examined strictly from the stated objectives of the School Milk Scheme *Regulation* 'as a measure to help expand the market for milk products' and as a 'surplus disposal mechanism', the scheme has been poor value for money. Its costs of disposal per tonne have been significantly higher than costs per tonne of disposal via other mechanisms such as subsidised use of skimmed milk in animal feed and casein and the use of butter and butterfat. In relation to making a possible value for money comparison between the School Milk Measure and other EU funded measures to promote consumption of milk and milk products this has not been possible because of data limitations (about the impact of promotional measures on consumption).

S1.3.4. Scheme relevance

The School Milk Measure mainly seeks to address a need to contribute to milk and milk product market stabilisation by encouraging consumption. This pre-supposes that there is an underlying position of surplus supply in the EU market. Examination of recent and future, forecast² EU dairy sector supply balances shows the EU has been in a position of surplus supply of milk and milk products throughout the last five year period and is likely to continue in such a position over the next few years. Hence, the underlying rationale for the measure appears to be relevant both now and in the next few years.

In respect of the second logic for the scheme intervention (contributing to the positive educational and nutritional development of children), evidence from various Member States (eg, issuing of dietary guidelines for a healthy diet and surveys of dairy product consumption levels relative to these) shows that in most Member States some children fail to meet such targets. This suggests that there is a continuing logic to initiating measures that aim to encourage consumption of milk and milk products in children on health and nutrition grounds.

Overall, the underlying rationale or relevance of the scheme remains both currently and for the foreseeable future.

S1.4. Recommendations

The following recommendations for consideration by the Commission are made. These are presented in order of priority with the most important recommendations presented first.

Judged purely against the current, stated documented objectives of the measure (maintaining and increasing consumption of milk products), the measure has had a marginal, positive impact and represents poor value for money. This suggests that the Commission should give serious consideration to withdrawing the measure. The main implications of such action would be to place the onus for continuing to provide any form of subsidised milk to schoolchildren on Member State governments. Whilst it is impossible to predict the outcome of such an action it is likely that the net effect of such action would undoubtedly lead to decreased availability of milk products and decreased consumption in schools. However, the evidence presented in this report suggests that the impact would probably be very limited.

Given that the underlying rationale for the School Milk Scheme continues to be valid (see above), it is recommended that the financial resources currently allocated to the measure might be re-deployed. This re-allocation should be to other measures that aim to meet the key objectives set for the School

² Made by DG VI.

Milk Measure and that can demonstrate reasonable effectiveness and are better value for money than the School Milk Measure. These fall into two main areas:

Measures to increase consumption of milk and milk products

One such measure of note is the provision of funding for promotional measures to encourage consumption. However, due to the inherent difficulty in identifying and attributing causality for changes in milk consumption to any promotional activities undertaken it is recommended that before any such diversion of funds might be considered, the effectiveness of promotional activities is fully established³.

Measures to contribute to the positive educational and nutritional development of children

As indicated above the School Milk Measure plays a role within broader general and health/nutritional policy objectives set and operated at the Member State level. However its contribution to achieving this objective has to date probably been extremely limited. Bearing these factors in mind, it is recommended that if consideration is given to diverting resources to Member State level measures that can be demonstrated to be more effective in educating schoolchildren about the positive health and nutritional benefits of milk product consumption. Assessing the effectiveness of measures that target health and nutritional objectives is however difficult and hence if such a course of action were to be taken, careful preparation into how the effectiveness of such measures might be measured should be undertaken.

Scheme specific issues

As the main recommendations given above focus on dis-continuation of the measure and use of resources for alternative, more effective measures, no further recommendations relating to improving the efficiency of the existing measure are made. The authors consider that the focus of any change should seek to address the fundamental weaknesses of the measure in achieving its objectives. Whilst making recommendations for improving the efficiency of the existing measure could be offered these would not significantly address the issues contributing to the very limited effectiveness of the measure.

³ The authors are not aware of any published data that fully assesses the effectiveness of such measures in the EU.

Part 1: Evaluation objectives and methodology

1. Introduction

As part of requirements to periodically assess measures financed from the European Union's budget, this study, commissioned by Directorate-General VI of the European Commission, requested an evaluation of the School Milk Measure.

The main aims of the evaluation exercise were to analyse how the mechanisms for implementing this measure have performed, to assess the validity of the means implemented to achieve the objectives and to evaluate their efficiency and effectiveness. Specifically:

- the effectiveness of the school milk measure should be evaluated, to determine in particular whether the means implemented are sufficient to attain the objectives set out in the Regulations;
- recommendations are sought for a possible proposal to review the measure.

The report presents this evaluation and is structured in two parts. Part 1 provides the conceptual framework and methodology. It starts by discussing the policy intervention logic for the measure and the purpose of the evaluation. It then discusses the methodology used. Part 2 presents the evaluation findings, including conclusions and recommendations.

Part 2 is structured as follows:

- Section 2: Summarises key features of scheme administration and management in six case study countries, highlighting similarities and differences.
- Section 3: Examines the impact of the measure on the prices paid for milk by students and compares these with prices paid for competing products.
- Section 4: Assesses the availability of milk products in schools and how the scheme affects product availability.
- Section 5: Discusses the nature and role of milk and milk product promotion including educational campaigns focusing on the nutritional benefits of milk consumption. The role of the school milk measures within these activities is then examined.
- Section 6: Estimates the number of scheme beneficiaries and explores the effectiveness of the measure in reaching its target beneficiaries.
- Section 7: Focuses on the impact of the measure on the EU market for milk products and its effectiveness in attaining the scheme's primary objective of increasing consumption.
- Section 8: Assesses the main factors influencing milk consumption. It covers price and other factors affecting consumption in order to then place in context the effectiveness of the school milk measure in attaining its primary objective.
- Section 9: Covers scheme disposal costs and value for money considerations for the scheme relative to some alternatives.
- Section 10: Examines the current relevance of the measure and its objectives.
- Section 11: Presents the study conclusions and recommendations.

Three appendices are presented covering further details on scheme administration and management (Appendix 1), details of milk consumption patterns, trends and influences in selected Member States (Appendix 2), and an overview of the educational role of milk in improving nutrition (Appendix 3).

1.1. Policy intervention logic

The intervention logic and hierarchy of objectives for the School Milk Measure are presented in Figure 1.1. Its origins stem from Articles 38 and 39 of the Treaty of Rome which established the principle of a common market for agriculture and trade in agricultural products and the objectives for the Common Agricultural Policy (CAP). Of particular relevance is the (ultimate) objective to stabilise markets (Article 39).

Secondly the Treaty provided for provisions to achieve the objectives of Article 39 such as use of measures to aid the marketing of products (Article 40) and to promote the consumption of products (Article 41). Whilst these were later incorporated in Regulation 804/68 which established the common organisation of the market for milk and milk products, the formal introduction of the School Milk Measure stems from 1977 (Regulation 1080/77).

The principle general objective or outcome of the School Milk Measure is to help expand the market for milk products with more specific objectives⁴ to:

- maintain or increase the consumption of milk products by school children;
- encourage the habit of consuming milk products, hopefully also after children leave school;
- ensure that milk products are available in schools at prices that can compete with alternative products;
- improve the image of and knowledge about milk products by providing information on their nutritional and other properties.

At an operational objective level, the aim is to increase the volume of milk consumed amongst the target population of children and young people aged 3 to 18 attending non university educational establishments.

From a needs perspective, the measure seeks to address a need to contribute to milk and milk product market stabilisation and to the positive educational and nutritional development of children and young people in the Community (encouraging the habit of consumption of products that have positive health benefits).

⁴ The contractors note that only the objective relating to increasing consumption is explicitly stated in the founding regulations of the measure and for the establishment of the milk CMO.

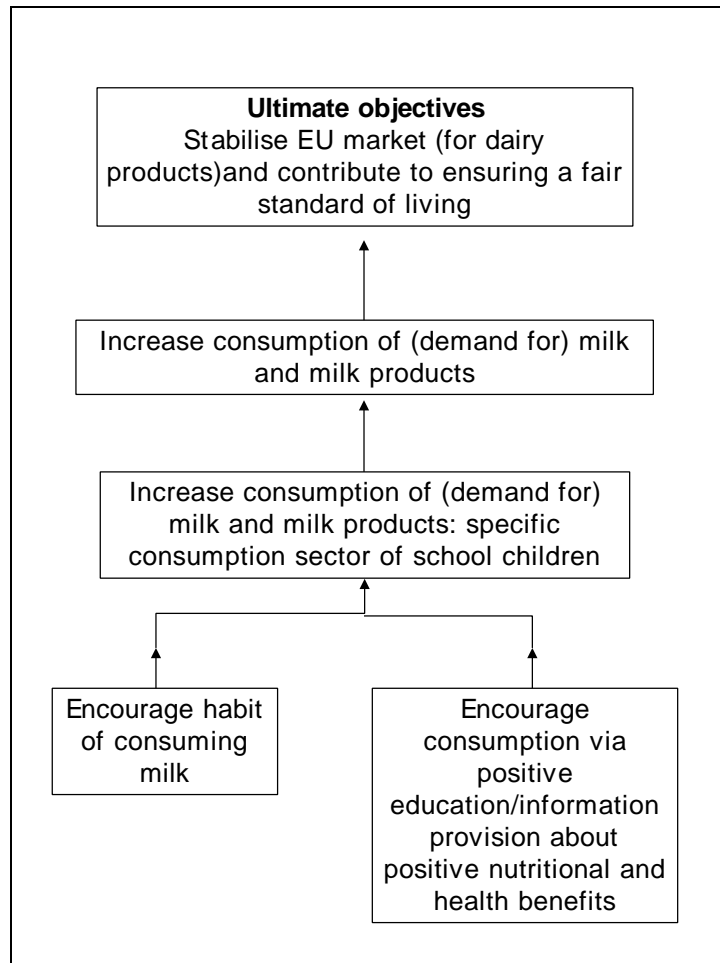


Figure 1.1: Hierarchy of objectives for the EU School Milk Measure

1.2. Delivery systems

The primary delivery mechanism is the provision of a subsidy to reduce the selling price of milk products distributed in schools. These may be supplemented by national Member State aids with the result that in some cases milk products are distributed free to some scheme beneficiaries. Management, administration and implementation of the scheme is undertaken by national bodies designated by each Member State. The mechanisms, arrangements, distribution and management varies by Member State and are discussed in detail in Appendix 1 and summarised in section 2.

1.3. Purpose of the evaluation

a) Aims

The main aims of the evaluation exercise are to analyse how the mechanisms for implementing this measure have performed, to assess the validity of the means implemented to achieve the objectives and to evaluate their efficiency and effectiveness. Specifically:

- the effectiveness of the school milk measure should be evaluated, particularly to determine whether the means implemented are sufficient to attain the objectives set out in the Regulations;

- recommendations are needed for a possible proposal to review the measure.

The evaluation was required to focus on the period between 1992-1997, targeting primarily the Community dimension but also examine how the measure has been applied in the Member States where the measures involve significant use of funds.

b) *Evaluation questions*

The following evaluations were required to be addressed in the study:

Evaluation of the management methods and their efficiency:

- Describe and analyse the mechanisms and arrangements for implementing the measure, the management costs and monitoring methods. What are the strengths and weaknesses of these mechanisms?
- Analyse the impact of the measure on the prices paid by the beneficiaries and compare them with:
 1. the prices of the same product unsubsidised (for example, purchases direct from wholesalers or supermarkets)
 2. the prices of competing products
- What impact has the measure had on the availability of this type of product in schools? And on competing products?
- What information activities are promoted by Member States in the context of the distribution of subsidised dairy products in schools? If possible, identify examples of good practice.
- Estimate the real number of beneficiaries per Member State and per age group. Identify the factors influencing the actual rate of coverage of this measure in relation to the population that could potentially benefit.

Evaluation of the measure's effectiveness

- What impact has this measure had on the market in milk products?
- How effective has the measure been in attaining the objective of increasing the consumption of milk products?:
 1. How significant is the price to be paid by potential beneficiaries for this type of product as a factor in determining demand? More specifically, to what extent does the impact of Community aid on the price actually paid serve to stimulate demand for milk products? (Note: this refers to **demand** in the age group targeted by the measure).
 2. Are there other factors that have greater impact on demand for this type of product than their price?
- Does the list of dairy products eligible for subsidy suit the tastes and customs of the public concerned?
- Are the distribution and presentation methods appropriate?
- How effective is the measure in attaining its educational objective (to improve knowledge of the nutritional qualities of milk products)?

1.4. Methods recommended

The evaluation was to use as its primary methodology⁵:

- an analysis of the Commission's information on the measure in question and of the information provided by those responsible for administering the programmes in the Member States;
- a detailed study of how the measure is being implemented in three Member States using different implementing means with a reasonably large budget.

In undertaking the evaluation, the terms of reference made specific reference to the availability of the following reference data and material:

- Court of Auditors report, following the evaluation of the effectiveness of the measure (OJ of 16.11.93);
- Professor Wendelmair's study of the application of the measure in Germany;
- Information forwarded annually by Member States to DG VI covering:
 - number of schools and pupils taking part in the measure each year;
 - the quantity of products distributed during the school year;
 - the maximum prices to be paid by school children for the various products and the factors on which they are based;
 - where, applicable, a summary of the information measures implemented on their territory;
 - the application methods chosen.

1.5. Research methodology

1.5.1. Underlying assumptions, causal links and hypotheses to be examined

Based on the objectives and evaluation questions referred to above, the key causal links and hypotheses to be examined can be summarised as follows:

- by subsidising the price of milk and dairy products sold to schoolchildren, consumption of milk and dairy products will increase to a level that is higher than would have occurred in the absence of the subsidy. In turn this assumes that price is an important factor influencing consumption and that the responsiveness of demand for milk and milk products amongst the target beneficiaries to changes in price is relatively elastic⁶. Thus if the price of liquid milk fell by 5%, demand would be considered to be elastic if the change in demand was greater than 5%;
- the consumption of milk and dairy products can be positively influenced by encouraging the habit of consumption amongst the young and that this pattern and level of consumption will continue as people age (ie, consumption levels amongst post school age people would be higher than otherwise would have occurred if milk products had not been more readily made available at schools);
- there is a positive link between consumption of milk and milk products and the level of information and education about the positive health and nutrition benefits of consuming milk (ie, consumption levels amongst schoolchildren would have been lower than otherwise would have occurred if milk

⁵ As indicated in the evaluation terms of reference.

⁶ Elasticity of demand refers to the responsiveness of demand to price changes. An elasticity of demand is generally referred to as either elastic or inelastic. It is elastic if the % change in demand for a given % change in price is greater than the % change in price. It is inelastic if the % change in demand is less than the % change in price.

and milk products had not been more readily made available and the level of education/information had been lower at schools).

1.5.2. Design of research

The underlying approach used was based on the causal approach. This aims to identify changes in milk product consumption levels amongst the target group of beneficiaries and to attribute these changes to the School Milk Measure and other factors (the counterfactual situation). To achieve this the 'ideal' design would be to use the quasi-experimental design of random control groups which examine both a before and after scenario (ie, consumption levels amongst groups of beneficiaries before and after significant changes in the measure) and an interrupted time series scenario (ie, extending the before and after analysis across a period of several years). Nevertheless, the 'ideal' design for conducting such an evaluation would necessitate a considerable input of resources to conduct monitoring, observation and surveying of schoolchildren beneficiaries across the Community. The time and budgetary limits made available for this evaluation precluded such a research design being proposed. Hence the design and methodologies used (see below) reflect these constraints.

The research design undertaken and presented below is structured largely in line with the order of the evaluation questions referred to above in sub-section 1.3 although the relevance of the policy measure is also examined.

1.5.2.1. Relevance of the scheme

This was examined from the following perspectives:

- Has there been a continuing requirement to encourage milk and milk product consumption in the EU during the 1992-97 period? In other words has the EU milk and milk and milk product sector remained in a position of structural surplus necessitating measures on both the supply side (eg, intervention, use of export subsidies, changes in the level of support) and demand side (measures to increase internal EU consumption) to contribute to market stability?;
- Is there still a perceived requirement to encourage schoolchildren to consume milk and milk products for positive health and nutritional reasons?.

The approach used was to examine these perspectives by:

- a) Examination of the supply balances for milk and milk products in the EU to assess if a position of structural surplus has continued since 1992.
- b) Assessment of whether there is reasonable evidence linking positive health and nutrition amongst citizens (especially schoolchildren) with milk and milk product consumption and whether there is reasonable evidence of a perceived 'need' to provide such information via educational establishments.

1.5.2.2. Evaluation of the management methods and their efficiency

For this aspect of the project, the following were examined:

- a) Efficiency of scheme mechanisms, arrangements, management costs and monitoring methods. This included assessment and comparisons of the following across a cross section of Member States:

-
- determination of who manages the scheme in each country and why such procedures were chosen;
 - comparing and identifying the relative advantages and disadvantages of school milk delivery and distribution systems across some Member States;
 - determining management, administrative and operation costs and handicaps in each country (at the dairy and school level), where data permitted;
 - establishing why some eligible schools do not participate in the scheme;
 - assessing the perceived success of monitoring methods used.
- b) Assessing the impact of the scheme on prices paid for milk products by beneficiaries by:
- establishing the maximum ceiling price in different Member States for each milk product within the scheme, comparing these across countries and with 'unsubsidised' milk and milk product prices;
 - identifying the impact of any additional provision of national aid on the final price paid by the beneficiaries;
 - comparing prices of the same (unsubsidised) products with scheme products;
 - comparing liquid milk prices paid by beneficiaries since 1992 with those of competing non-milk products (such as carbonated drinks, fruit juices, mineral water), and examining the trend in the relative competitiveness of liquid milk versus competing products.
- c) Assessing the impact the measure has had on the availability of products in school (where data availability permitted) by:
- establishing the volumes (in milk equivalent) provided under the scheme between 1992 and 1997, according to milk product groups, scheme categories, age group, type of packaging and mode of distribution;
 - identifying the relative importance of other (national) schemes of relevance such as specific school milk and school meal schemes.
- d) Examining the extent to which promotional information about the scheme and the positive health/nutrition attributes of milk have been used via the scheme by reviewing relevant promotional activities, comparing these across some countries and if possible, identifying examples of promotional activities which have enabled a positive image built up amongst consumers about milk and hence led to increased consumption.
- e) Identifying the efficiency of the scheme to reach its target beneficiaries by estimating the real number of beneficiaries, comparing this to the potential target population of eligible schoolchildren and then assessing the key factors determining the rate of coverage across Member States.

1.5.2.3. Evaluation of the measure's effectiveness

This aspect, and in particular the consideration of value for money of the measure was examined by:

- a) Assessing the impact of the measure on the market for milk products by:
- comparing the volume of products supplied under the measure (in milk equivalent) against total consumption of milk in the EU as a whole and in some Member States;
 - undertaking 'policy on' versus 'policy off' comparisons. These focused on comparing milk and milk product consumption (by target group, where possible):

- (i) between a Member State which is carrying out a scheme element (such as provision of milk to secondary schools) and one which is not;
 - (ii) within some Member States, between a period when a scheme element was in place (such as providing cheese) and one where it was not, and;
 - (iii) between the period 1992 and 1993 (before the scheme adjustment under Regulation 3392/93) and the period 1994-1997.
- b) Identifying the main factors influencing milk consumption levels and trends. Where data and information permitted this covered:
- assessing the relative importance of price in influencing milk consumption by using price elasticities (where possible), ascertaining the influence of how liquid milk is consumed (ie, on its own or with something else on consumption levels). In other words if consumption is mainly with something else (eg, tea or cereals), then the importance of the price of milk is likely to be limited;
 - identifying relative price competitiveness of milk versus other drink products: by comparing milk price trends/indices to consumption of milk compared to retail price indices with similar changes for some competing products (eg, carbonated soft drinks);
 - analysing milk product consumption patterns and trends comparing these to quantities of milk and milk products distributed under the scheme per capita (so as to see whether scheme allocation reflects consumer product consumption habits for milk products) and consumption trends for other drink products (fruit juices, sodas);
 - reviewing advertising and promotional expenditure (where relevant) for milk and milk products and comparing these with similar expenditure levels for competing drink products, such as carbonated sodas, mineral water and fruit juices.
- c) Establishing the attainment of the educational objective by:
- reviewing analysis and research undertaken on the benefits and effectiveness of educational campaigns for milk and milk products;
 - determining the nutritional messages targeted under the scheme and their impact.
- d) Determining value for money. This was mainly assessed by comparing trends in expenditure on the scheme for the EU as a whole relative to quantities supplied, establishing cost per tonne milk equivalent. In addition, comparisons were made between the disposal cost per tonne of whole milk equivalent under the scheme with disposal costs per tonne under other relevant measures such as using export refunds and other domestic (EU) disposal schemes for milk products.

1.5.3. Methodology (evaluation instruments) used

The methods used to conduct the evaluation reflect the time and budgetary constraints set for the evaluation by the Commission. In essence the method is founded on the desk research methods suggested by the Commission in the evaluation terms of reference namely:

- an analysis of the Commission's information on the measures in question and of the information provided by those responsible for administering the programmes in the Member States;
- a detailed study of how the measures are being implemented in three Member States using different implementing means with a reasonably large budget.

In addition, we used the following:

- holding discussions with relevant officials within relevant departments of DGVI and with members of the steering group to obtain qualitative information about the scheme;
- a desk research review of a wide range of additional documents and reports to those mentioned in the terms of reference (see bibliography);
- desk research analysis of data and information about advertising expenditure on milk products and competing products (such as carbonated soft drinks);
- desk research analysis of existing studies on scheme operation;
- telephone discussions (to obtain qualitative views) with a some key organisations in the relevant programme sectors in some key Member States such as bodies affected by the school milk measure, those operating and managing the schemes (such as dairy co-operatives) and dairy promotional bodies (see bibliography and list of contacts).

It should be noted that a substantial amount of the data concerning operation of the measure at the Member State level, that was indicated in the original terms of reference as being held by the Commission, and available to the contractors, as a major source of data was not made available. This was due to a combination of reasons notably limited provision of information by Member States to the Commission and confidentiality. We therefore sought to overcome this deficiency by obtaining the necessary information, where available from the relevant authorities in key Member States.

In addition, it should be noted the original terms of reference indicated that a major component of the study should be based on a detailed study of how the measures are being implemented in **three** Member States using different implementing means with a reasonably large budget. Whilst the contractors complied with this and proposed to focus on the three Member States where expenditure under the scheme was highest (France, Germany and the UK), the contractors subsequently agreed to include⁷ additional examination (where data could be obtained) of scheme operation in Finland, Sweden and Spain.

The main weakness of the methodology stems from its inability to collect quantitative and statistically representative primary data amongst scheme beneficiaries, schools and managing agents. Hence, it relied on desk research of existing literature and data and on the provision of some qualitative views (eg, from schools, managing agents and administrators). It should however be recorded that this weakness was externally imposed by the Commission Services commissioning the evaluation via the limited budget and time period allowed for the evaluation. In addition, once the study began, a considerable tranche of relevant data that was indicated as being held by the Commission (in the study terms of reference) was not made available to the contractors. Despite this weakness the contractors consider that the study conclusions and recommendations (section 11) are based on a reasonably sound basis given the external (ie, outside the control of the contractors) constraints placed on the evaluation by the Commission, and therefore represent an objective assessment of the available information.

⁷ At no additional cost.

Part 2: Findings

2. Scheme mechanisms, arrangements, distribution, management costs and monitoring methods

In this section the school milk management mechanisms and arrangements are discussed in brief. The analysis focuses primarily on the three main Member States of the UK, France and Germany⁸ but also includes consideration of the management mechanisms and arrangements for Sweden, Finland and Spain. It was based on desk research and examination of literature provided by respective bodies involved in administering the scheme in different Member States (see bibliography) and some telephone discussions with officials in administering and beneficiary bodies. A more detailed presentation and discussion of the scheme arrangements and management mechanisms in each country is presented in Appendix 1. The section provides only an overview of key scheme features and comparisons between Member States and is presented here to inform the reader of key, relevant background information that will assist understanding of the analysis presented in later sections.

There are a number of key features, some of which are common and some different across the Member States examined. These are summarised in Table 2.1 and include the following.

a) *Products provided under the scheme.*

These vary across Member States from the minimum compulsory product categories (I and II, whole and semi-skimmed milk), for example, in the UK and Germany, to much wider option take-up in countries such as Finland and Sweden. For example in Finland, the eligible product categories are whole milk, semi-skimmed milk, fresh and processed cheese and other cheeses (Categories I to IV). In addition, it should be noted that product availability is often further limited within the national take-up options at the school or sometimes local authority/municipality level. For example, in the UK the vast majority of local authorities only make available whole milk rather than offering both whole and semi-skimmed milk.

b) *Eligible establishments.*

These also vary across Member States from nursery and primary school ages only in the UK to the inclusion of secondary schools in all five of the other countries examined.

c) *Claimant bodies*

These vary across Member States. Hence, in the UK and France for example, the focus is on municipalities, local education authorities and schools (no supplier involvement) whereas in the other Member States reviewed, dairies are more heavily involved, especially in Finland, Germany and Spain. The number of claimant bodies also varies significantly across Member States. For example, in France there are about 16,500 claimant bodies compared to under 50 in Finland and Sweden respectively.

d) *Linkages with national schemes*

There are considerable linkages of the scheme with nationally operated and funded schemes. Of particular note are in France and the UK where free liquid milk is provided to nursery school children (part funded by the EU scheme and part funded from national sources) and the provision of free school meals to all schoolchildren up to the age of 18 in Finland and Sweden (again part funded by

⁸ The countries indicated to be the focus of the research in the consultants' proposal.

the EU scheme (in respect of dairy product content) and partly from national/local sources). Only Germany of the countries examined does not operate any additional national scheme⁹.

e) *Voluntary nature of participation*

Across all of the Member States examined scheme participation is voluntary. Additionally participation in the national schemes for providing free school milk to nursery school children in France and the UK is voluntary. However, in respect of the national scheme provision of free school meals in Finland and Sweden, this is a compulsory requirement for schools. Given these conditions of participation, there are significant differences in take-up across Member States. Take-up¹⁰ by schools tends to be highest in countries which provide the largest amounts of (additional) national funding assistance, the most scheme product options and where the provision of milk and dairy products may fall within a compulsory educational requirement. Hence, take up is highest in Finland and Sweden and lowest where national funds and scheme take-up of options are limited and where participation is totally voluntary (eg, Germany).

f) *Use of national or regional ceiling prices*

National or regional maximum prices for the milk and milk products sold to school children via the scheme are set in Germany, Ireland, Netherlands, Denmark and Spain (set differently at a regional level in Spain and Germany). In the other Member States maximum selling prices at the school level only are set according to product purchase prices by schools net of EU subsidy.

g) *Administrative and distribution costs*

These tend to be borne by the claimant bodies and schools. As indicated above, in countries such as the UK and France these fall on local authorities and municipalities whilst in countries such as Germany and Finland, dairies bear some of the burden. It should also be noted that in the UK there is also specific provision for claimants offsetting the costs of administration and distribution through the claiming of an administrative allowance (ie, this is claimed and taken out of the subsidy provided by the scheme).

h) *Administrative procedures and control*

All of the Member States examined operate detailed and fairly stringent procedures for registering managing bodies. These are widely perceived to be stringent and thorough and implemented in order to meet the requirements of the Regulations implementing the scheme. This issue is discussed further in section 6.

⁹ Information concerning Spain was not made available.

¹⁰ Further discussion of take up is presented in sections 4 and 6.

Table 2.1: Summary of key findings analysed

Elements	Scheme rules	UK	France	Germany	Sweden	Finland	Spain
1. Products provided under the scheme	Categories I and II compulsory; Categories III, IV, V, VI, and VII optional.	Category I and II only. Use as an ingredient in meal preparation is not permitted.	Category I, II, III, IV, VII. Use as an ingredient in meal preparation is not permitted.	Category I and II only. Use as an ingredient in meal preparation is not permitted.	Category I, II, III, IV. Use as an ingredient in meal preparation is permitted.	Category I, II, III, IV, and milk at 1% fat. Use as an ingredient in meal preparation is permitted.	Category I, II, III, IV. Use as an ingredient in meal preparation is not permitted.
2. Eligible establishments	Nursery, primary and secondary (optional).	Nursery and primary schools only.	Nursery, primary and secondary.	Nursery, primary and secondary.	Nursery, primary and secondary.	Nursery, primary and secondary.	Nursery, primary and secondary.
3. Approved managing/claimant bodies	This can be: 1. School/ school association 2. Education authority 3. Milk supplier	Local education authorities and three school associations. About 150 bodies in total. No suppliers take part.	A combination of schools, school associations and municipalities – about 16,500 bodies in total. No suppliers take part.	Claimant bodies approved by each Länder. In all but one state milk and milk product suppliers only chosen.	Combination of suppliers/recipients. Main claimants are municipalities/councils (308 in total). 45 milk suppliers also approved	Combination of suppliers/recipients. Main bodies are dairies (10 approved). In remote areas, bodies are schools and central municipal kitchens.	Claimant bodies are suppliers and approved by each Autonomous Community.
4. Administrative procedures and scheme control	As detailed in Regulation 306/29 Article 10(2).	Stringent, and thorough. Inspection of all LEAs and some schools each year.	Sufficient, but less thorough and detailed than in UK and Germany. 300 random inspections carried out annually.	Stringent and thorough. Inspects suppliers and some schools each year.	Requirements are sufficient. Random inspection of 10% of bodies and schools each year.	Requirements are sufficient. Random inspection of 10% of schools each year.	In line with regulation. Spot checks of a certain number of suppliers and schools.
5. Provision of subsidised milk products	Not applicable.	Built into free whole milk provision in nursery schools. In most cases only available as an element in paid school meals in primary schools. Choice of products not usually offered.	As part of free whole milk provision to nursery students at break time. In primary and secondary schools, only available with paid school meals. Choice of cheese and milk usually offered post-nursery.	Milk is mainly provided at break time at nursery level. In primary and secondary schools, milk is provided during break times only. This is paid periodically in the former and daily in the latter.	In nursery schools, provided to all children and built into overall nursery fees. Provided as part of free school meals to all primary and secondary students. Choice of milk/milk products provided.	In nursery schools, provided to all children attending and built into overall nursery fees. Provided as part of free school meals to all primary and secondary students. At least two milk types offered	Information not made available to contractors.
6. Up-take by schools	Not applicable.	LEAs and schools not obliged to participate in EU scheme, or provide school meals. Many do not, for various reasons. No precise school up-take figures, due to lack of LEA participation. Primary school up-take = 50% in <i>participating</i> LEAs.	Municipalities and schools not obliged to participate in EU scheme or provide school meals. Many do not, for various reasons. Up-take unknown, but lower in primary and secondary schools, partly as many do not offer school meals.	Schools not obliged to provide milk products or participate in EU scheme, neither are suppliers. Many do not, for various reasons. School up-take figures unknown and vary substantially from one state to another.	Up-take very high, as all schools offer milk and meals. Up-take 85% amongst nursery schools and nearly 100% in primary and secondary schools.	Up-take very high, as all schools offer milk and meals. Up-take 80% amongst nursery schools and 95% in primary and secondary schools.	Information not made available to contractors.

3. Impact of school milk subsidy on prices paid for milk products by students

In this section the impact of the School Milk subsidy on the price paid for milk products by the scheme beneficiaries (students) is examined. The section is structured as follows:

- descriptions are presented, by Member State (six in total), of the ways in which maximum prices are calculated, the role and influence of any national school milk or meals scheme, the effect on prices paid by schoolchildren and the degree of competition faced by milk from competing products;
- key features and comparisons of the above are summarised;
- analysis and conclusions are drawn concerning the effectiveness of the measure to impact on the price paid by beneficiaries.

3.1. Member State case studies

3.1.1. UK

a) Establishment of maximum price

No national or regional maximum ceiling price(s) are set which would limit the price that can be charged for the subsidised milk product by an education establishment to children. There are also no maximum national/regional purchase price(s) set for each product from which the subsidy should be discounted. This reflects regional and seasonal differences in milk prices, variation in milk types (whole, semi, UHT, pasteurised), and differences in price by packaging type which would make the setting of maximum ceiling prices a complex procedure.

In the UK, the maximum selling price for subsidised products is calculated using the following procedure:

- i) the milk product purchase price from a dairy (it is up to each school/LEA to get the best purchase price possible for each milk product from the dairy)
less
- ii) EU subsidy for that product
plus
- iii) up to 5p administration/distribution allowance per eligible volume (eg, 1/3 of a pint).

To calculate the selling price, each claimant uses the administration/distribution costs from the previous term, subsidy rates, and average purchase price for that product. The purchase price is that paid by school or school caterer to suppliers (dairy, milk rounds person, retail outlet) net of any discount. It should not include overheads or other incidental costs.

The national subsidy discount for each product (for example whole milk) is equal to the set ecu rate multiplied by the relevant green rate (table 3.1).

Table 3.1: Recent UK subsidy rates

School term	Whole milk	Semi-skimmed milk	Plain whole milk yoghurt
	pence per pint	pence per pint	pence per 100g
Summer 1995	14.30	9.03	2.44
Autumn 1995	14.54	9.18	2.48
Spring 1996	14.76	9.32	2.52
Autumn 1996	14.37	9.07	2.45
Spring 1997	13.96	8.81	2.38
Summer 1997	12.79	8.07	2.19
Autumn 1997 ¹	12.42	7.84	2.12
Spring 1998	11.99	7.57	2.05

Notes:

1. If the school term started in August

Source: IBAP

The UK is the only EU Member State to have introduced an administrative allowance within the maximum price calculation. This allowance was implemented in 1995 after thorough consultation with all those concerned. It was decided that an allowance was required to help LEAs and schools cover the cost of administering, promoting and operating the scheme by charging for it in the price of the subsidised milk sold to students. It was set at a maximum 5 pence per serving to each pupil.

The allowance is not an entitlement and must be justified. Sample records must be available to show how the allowance was calculated, and each claimant must show that they are reasonable and clearly defined. In particular the allowance must not be more than the mark-up on a similar product. For example, the allowance on a glass of milk *must not exceed* the mark up on a glass of fruit juice, squash or fizzy drink.

The following costs can be covered by the allowance:

- staff time (local authority staff, school staff);
- administrative costs including those incurred in promoting the scheme (paper, photocopying, envelopes, postage, telephone costs);
- refrigeration costs (purchase, maintenance, running costs);
- cleaning materials, washing up liquid;
- beakers, cups, straws.

It should be noted that the allowance, at the maximum of 5 pence per serving, is higher than the EU subsidy granted to whole milk and semi-skimmed milk per 1/3 pint serving.

b) National school milk schemes

National aid for milk in schools has been provided since the 1930s. At present, local authority claimants and independent/non-maintained and grant maintained schools are also eligible to claim for children under the age of 5 under the Nursery School Milk element of the nationally funded Welfare Food Scheme, which is administered by Health Departments. Under the Welfare Food Scheme children under 5 attending approved day care facilities for two hours or more are entitled to receive, free of charge, one third of a pint (189ml) of milk per day. This has to be either whole or semi-skimmed plain milk.

It is assumed that those claiming for Nursery School children under the Welfare Food Scheme have also claimed the EU School Milk Subsidy where they are allowed to, and Nursery subsidy payments

will be made net of the EU subsidy. Claims for reimbursement are made to the Welfare Food Reimbursement Unit on a four-monthly basis. The cost of this scheme amounts to some £40 million a year.

Families who receive Income Support or income-based Jobseekers' Allowance are also entitled to free milk under the nationally funded Welfare Food Scheme if, within the family, there is: a pregnant woman; a woman who is breast-feeding her baby; or a child aged under 5 years.

The cost of this scheme is about £150 million a year. Expectant or nursing mothers and children under five receiving these benefits are entitled to receive seven pints (or four litres) of cows' milk a week. Bottle-fed babies are entitled to 900g of dried baby milk (specified brands) a week. Families receiving Family Credit are entitled to subsidised, as opposed to free, baby milk for babies under one year. Either whole or semi-skimmed liquid milk can be obtained from milkmen or at certain shops and supermarkets in exchange for tokens which are issued by the Post Office. The tokens cannot be exchanged for cash or other goods. Dried baby milk tokens can be exchanged at local maternity or child health clinics, or at a special welfare food distribution centre.

c) Effect of EU subsidy on price of product paid by school children

The payment of the EU subsidy is conditional on the full benefit of subsidy being passed on to eligible school children, in the form of reduced prices. Managing bodies have to provide the Intervention Board with:

- records of purchase prices paid for each product from dairies;
- an explanation of the method used for passing on the benefit of subsidy to students;
- the administrative charge level.

Based on this information provided to the IBAP in Great Britain, the average maximum price recently (1997) charged in schools for plain whole milk was around 10 pence per 1/3 pint carton (189ml). This figure is estimated as shown below:

For a 1/3 pint of whole milk, maximum price = 10.5 pence (average purchase price) – 4 pence (EU subsidy for 1/3 pint) + 3.5 pence (average claimed administrative allowance) = 10 pence per serving

The administrative charges vary from the purely nominal to those necessary to recover costs in full net of subsidy. Purchase prices also vary for 1/3 pint of whole milk, depending on the volume bought and the proximity of dairies. Hence, the maximum selling price varies between 6 and 14 pence per 1/3 pint of whole milk. This compares with a retail (supermarket) average price equivalent for whole milk of about 17.6 pence per 1/3 pints (assumed to be purchased in 1 litre containers).

Semi-skimmed milk in 1/3 pint milk cartons tends to be sold by dairies at a slightly lower price level to that of whole milk. As administrative charges are the same, but the EU subsidy much lower (2.52 pence per 1/3 pint), the average maximum selling price for semi-skimmed milk is generally about 1.5 pence higher than whole milk per 1/3 pint carton (ie, within a range of about 7.5 and 15.5 pence per 1/3 pint). This compares with a retail (supermarket) average price equivalent for semi-skimmed milk of about 17.2 pence per 1/3 pint (assumed to be purchased in 1 litre containers).

In both examples above, the comparison of retail liquid milk prices with the maximum selling prices shows that the price of milk supplied to school children in the scheme is lower than the price of the same product unsubsidised.

A significant proportion of EU subsidised milk provided at the primary school level is sold as individual servings to school children during meal times. In such cases, the impact of the subsidy on the price is fairly transparent. A good example of the direct impact on milk prices paid by students occurred when the UK opted out of the secondary school element of the EU scheme. The price paid by students for 1/3 pint cartons of milk rose immediately by some 50% to an average of about 16-17 pence (as a result, consumption of milk in secondary schools was reported to have fallen by some 20%).

However, in most circumstances the impact of the EU subsidy element and hence its impact on consumption of these products, is less transparent and more difficult to disaggregate because:

- the EU subsidy is often built into the price paid by parents for school meals (in which subsidised milk products are served), or in the case of private schools, built into the overall school fees (which cover school meals). Hence, when school children make their menu choices at school meal time (eg, yoghurt and milk drink) they tend to have little if any awareness of the milk product costs mainly because they are not required to pay for the food at time of consumption. The price impact can also be further diluted or lost in cases where LEAs provide school meals at a subsidised rate;
- in the majority of nursery schools, milk is provided free with part of the aid element being EU subsidy and part national subsidy. The price/consumption impact of this measure and of its components (EU and national subsidy elements) is therefore difficult to quantify.

d) Competition versus soft drinks in schools

The level of competition that subsidised milk faces from alternatives such as soft drinks varies by educational institution:

- *nursery schools*. Those taking up free milk (the majority), do not usually provide any other drink except water to children. Where free milk is not taken up by nurseries (and in some cases where it is), most nurseries usually provide a squash alternative to milk (both are usually incorporated within the nursery fees paid by parents);
- *primary schools*. Children having school meals are generally offered a choice of (subsidised) milk or soft drinks (fruit juice, squash or carbonated). However, the children do not have to pay for these directly at the time of consumption as the cost is built into the school meal fees paid by parents. Also, some primary schools have vending machines selling soft drinks, but few, if any of these, vend milk.

Secondary schools are not part of the subsidy scheme in the EU, and so there is no competition with subsidised milk in these establishments. Nevertheless, many secondary schools do provide milk to students as part of school meals. This milk has to compete with a choice of soft drinks offered to students during school meals. Most secondary schools also have vending machines selling soft drinks, but rarely milk. Vending machines are often considered by many schools to be a good source of revenue generation.

3.1.2. France

a) Establishment of maximum price

France does not set any national or regional maximum ceiling prices which limit the price that can be charged for subsidised milk products by an education establishment to children. This is because there are no maximum national/regional purchase prices set for each product from which the subsidy should be discounted.

It is up to each managing/claimant body to obtain the best purchase price possible for the milk products. The maximum selling price essentially equals:

- i) the purchase price of the eligible product (as detailed in invoices provided to Onilait); minus
- ii) the EU subsidy, in national currency, for that product (eg, semi-skimmed milk).

There is no pre-fixed administrative allowance offered to the management bodies from the subsidy element towards the cost of administration, distribution and refrigeration. These services are provided by the municipalities and/or undertaken voluntarily by teachers.

Table 3.2 and Table 3.3 below show recent EU school milk subsidy (which is equal to the set ecu rate multiplied by the green rate and national aid levels) for each milk product sector (as detailed in 1.1.5, see also sub-section 2.2.2).

Table 3.2: Aid levels for liquid milk and yoghurts

Date	M ¹			A ²			B ³		
	EU aid FFr/20cl	Nation- al aid FFr/20cl	Total aid FFr/20cl	EU aid (FFr/l)	Nation- al aid (FFr/l)	Total aid (FFr/l)	EU aid (FFr/l)	Nation- al aid (FFr/l)	Total aid (FFr/l)
01/01/1991	0.5450	0.1350	0.6800	2.7252		2.7252	1.7200	0.3300	2.0500
01/08/1991	0.5450	0.1150	0.6600	2.7252		2.7252	1.7200	0.3300	2.0500
01/08/1992	0.5450	0.0450	0.5900	2.7252		2.7252	1.7200	0.2000	1.9200
01/09/1993	0.5355	0.0445	0.5800	2.6777		2.6777	1.6903	0.1897	1.8800
01/01/1994	0.4071	0.0429	0.4500	2.0356		2.0356	1.2850	0.2050	1.4900
01/08/1994	0.4009	0.0391	0.4400	2.0044		2.0044	1.2653	0.2247	1.4900
01/05/1995	0.4009	0.0391	0.4400	2.0044		2.0044	1.2650	0.2250	1.4900
01/09/1995	0.4009	0.0591	0.4600	2.0044	0.0956	2.1000	1.2650	0.2250	1.4900
01/09/1996	0.4009	0.0491	0.4500	2.0044	0.1456	2.1500	1.2650	0.1350	1.4000

Notes:

M = whole milk, either natural or flavoured, in 20cl cartons, to nursery schools

A = whole milk and whole milk yoghurt other than nursery schools

B = semi-skimmed milk

Source: Onilait

Table 3.3: Aid levels for cheese

Date	C ¹			D ²		
	EU aid (FFr/kg)	National aid (FFr/kg)	Total (FFr/kg)	EU aid (FFr/kg)	National aid (FFr/kg)	Total (FFr/kg)
01/01/1991	9.2604		9.2604	23.8124		23.8124
01/08/1991	9.2604		9.2604	23.8124		23.8124
01/08/1992	9.2604		9.2604	23.8124		23.8124
01/09/1993	9.0990		9.0990	23.3974		23.3974
01/01/1994	5.9290		5.9290	15.1189		15.1189
01/08/1994	5.8380		5.8380	14.8868		14.8868
01/05/1995	5.8382		5.8382	14.8873		14.8873
01/09/1995	5.8382	0.1018	5.9400	14.8873	0.1027	14.9900
01/09/1996	5.8382		5.8382	14.8873		14.8873

Notes:

1. C = Fresh and melted cheese >40% fat

2. D = other cheese >45% fat

Source: Onilait

b) National aid for milk in schools

As indicated in Table 3.2 and Table 3.3 the French government provides national aid in addition to the EU subsidy. The national aid has mostly been provided for whole and semi-skimmed milk, which are considered the most important milk products in France. The main objective of this national policy is to reduce the cost of these products to school children and to lower the local cost burden on municipalities required to provide free school milk to nursery schools.

It should, however, be noted that the level of national aid provided fell sharply in 1992 with the removal of the co-responsibility levy. In 1996, the national aid accounted for between 5% and 10% of the total cost of school milk subsidies (5% for cheese, 10% for whole and semi-skimmed milk).

From 1998/99 (school year), this national aid is now no longer targeted to specific milk products. Instead, it is being used to subsidise the distribution of whole milk, in cartons, to students in 'education priority zones' and 'urban zones that are socially deprived'. The change in policy took place to better target the subsidies at those most in need of help and those on lowest income levels. The likely real effect of this policy change will be to lower the average subsidy available for school milk and raise the cost to municipalities of providing free school milk.

An additional important national milk subsidy policy existing in France is the provision of free milk to nursery school children. In effect, once the EU subsidy and national subsidy elements are discounted from the purchase price of milk paid by municipalities, the balance is taken up as local municipality subsidy.

c) Effect of EU subsidy on price of product paid by school children

The average 1997 price (wholesale) per litre of pasteurised whole milk in France was approximately 5.3 FFrs and for long-life (UHT) semi-skimmed it was about 3.6 FFrs/litre. After subtracting the EU subsidy, the respective post-subsidy prices were 3.3 FFrs/litre for pasteurised whole milk and 2.3 FFrs for long-life semi-skimmed milk.

However, identifying the extent to which these average net prices may reflect the real prices charged to school children (and hence estimating the full contribution of the EU subsidy on the price paid) is difficult to measure. This reflects the following reasons:

- Onilait did not require managing bodies to provide information about the average price at which each product was purchased, or the price at which each milk product was costed (post subsidy) for inclusion in school meals until the 1997/98 school year. Hence, until this year, it has not been possible to identify the price at which subsidised milk products were provided to children at school via school meals. The recent changes should allow some better assessment to be made in the future because managing bodies are now required to provide Onilait with information on:
 - the cost of meals in canteens with and without the milk product subsidy;
 - average purchase prices paid for milk products used per term;
- whole milk in 20cl cartons is available free of charge to nursery school pupils in France. The subsidy required to provide this comes from three sources: EU, national and local municipalities. Disaggregating the impact of each on actual consumption levels is therefore difficult to do;
- for milk products provided during school meals, the EU subsidy element is built into the overall price of school meals paid for by parents. Hence, when school children make their menu choices (eg, do they eat cheese, yoghurt and drink milk) they have little, if any awareness of milk product costs as they do not have to pay for the products at the time of consumption. The

price/consumption impact of the subsidy measure is also complicated by the provision of some subsidies to source school meals by the state.

Nevertheless, most participants in the delivery of school milk in France strongly perceive that the EU subsidy scheme is an important factor influencing the positive consumption of cheese and milk products in schools. Products such as cheese tend to be relatively more expensive meal products than many other products, hence any form of subsidy improves the relative cost position of cheese as a product and hence has probably encouraged its use, especially as French schools provide school meals based on a raw material cost of about 8-9 francs per meal.

d) Competition with soft drinks in schools

The level of competition that subsidised milk faces from alternatives such as soft drinks varies by educational institution:

- *nursery schools*. Water is generally the only alternative to the free (subsidised) milk provided during break-time. Those children that also have lunch at school may be offered a choice of milk, water and sometimes squash;
- *primary schools*. Children having school meals are usually offered a choice of (subsidised) milk or water, for which the children do not pay for at the time of consumption (ie, the cost of the milk is paid for via parental fees for meals). Many primary schools also offer fruit juice during the school meal but this has to be paid for at the time by children;
- *secondary schools*. Children having school meals are often offered a choice of (subsidised) milk or water, for which they do not pay at the time of consumption (paid via school meal fees). The majority of secondary schools also offer fruit juice during the school meal, and a few offer carbonated drinks. Both have to be paid for at the time of consumption. A small but growing number of secondary schools have also introduced vending machines for sales of soft drinks, although milk does not tend to be included in this form of sale.

3.1.3. Germany

a) Establishment of maximum price

Maximum ceiling prices are used in Germany to set the level at which subsidised milk and milk products can be sold to children in schools. These are fixed at a level that aims to ensure that the full benefit of the subsidy is passed on to children.

The maximum ceiling prices are determined by the respective State (Länder) Ministries of Agriculture and therefore vary by State. In each State, maximum ceiling prices are based on dairy product prices plus delivery costs (for each product type) and type of packaging. Several maximum ceiling prices are therefore set, according to:

- the type of milk (plain or flavoured whole/semi-skimmed milk and yoghurt). The purchase price for semi-skimmed milk and whole milk are the same in all States;
- type of packaging (eg, carton, returnable). The price for school milk in returnable bottles is higher per unit than for milk in disposable packages (cartons), and milk prices per 0.2 litre or 0.25 litre served from 1.0 litre bottles/cartons or from milk dispensers holding 20 litre milk boxes/plastic sacks are lower than those for the 0.2 or 0.25 litres units offered in bottles/cartons, by some 5-10pfs per 25cl serving.

The State maximum ceiling prices set for the different school milk products and packages in 1997 are presented in Table 3.4.

Table 3.4: Maximum ceiling prices for school milk (in Pfennig per 0.2 l or 0.25 l unit serving) in 1997

State	Whole/semi-skimmed plain milk, pasteurised or UHT - carton	Whole/semi-skimmed flavoured milk, pasteurised, sterilised or UHT –carton	Whole milk, pasteurised or given UHT treatment – returnable bottle	Whole milk yoghurt
Baden-Württemberg	45	50	50	45
Freistaat Bayern	40	50	45	45
Berlin	35	50	30	30
Brandenburg	45	50	45	45
Hansestadt Bremen	40	50	45	Not offered
Hansestadt Hamburg	40	50	45	43
Hessen	40	50	45	40
Mecklenburg-Vorpommern	40 (0.2 l)	45 (0.2 l)	45	45/55 ¹
Niedersachsen	40	50	45	40
Nordrhein-Westfalen	40	50	45	45
Rheinland-Pfalz	40	50	45	Not offered
Saarland	40	50	45	Not offered
Sachsen	35/40 ¹	40/45 ¹	40 (1998)	35/40 ¹
Sachsen-Anhalt	40	45	45	Not offered
Schleswig-Holstein	45	55	50	45
Freistaat Thüringen	35	45	40	40 (1998)

Notes:

1. The lower price is paid for 0.2 units, the higher price for 0.25 l units

Source: Milchwirtschaftliche Landesvereinigungen and State Technical Boards in charge of school milk and subsidy claims

b) National aid for milk in schools

National aid for milk in schools was provided until the end of 1983 (ie, until the start of the EU school milk scheme). Since then, only children of parents who receive Income Support have been able to obtain milk at a further subsidised price. However, this programme was recently ended primarily because the consumption of subsidised milk by this group of beneficiaries was steadily decreasing.

No national aid is currently provided towards the consumption of milk or milk products in schools, and no States provide any additional aid towards the consumption of milk by children.

c) Effect of EU subsidy on price of product paid by school children

Schools obtain milk and milk products from suppliers at a price net of subsidy, which cannot be greater than the maximum ceiling price. The milk and milk products are then sold to pupils who wish to consume them at no more than the set maximum ceiling price.

In order to prove that the benefit of subsidy is passed on to eligible school children, dairies and wholesalers as well as the schools have to keep details and records of the selling price or purchase price of each milk product. The respective State Technical Boards are provided with these details at regular intervals (or on demand). Dairies/wholesalers also have to explain the method they use to pass on the benefit of the subsidy to schools. This explanation is either asked for once a year, at the beginning of the school term, or when first approved as a claimant.

In primary and secondary schools, the milk subsidy is apparent to beneficiaries (ie, students) and the impact of the subsidy direct because:

- in primary schools, children pay for school milk once a week or every two weeks;
- in most secondary schools, students buy subsidised milk from school shops as and when needed.

In nurseries, where milk is served either with breakfast or with lunch, the subsidy impact is diluted, as parents pay once a week or once a month an amount which covers the cost of milk and other food their children consume.

A comparison of the maximum ceiling prices for school milk (see Table 3.4) with retail liquid milk prices in Germany for 1997, shows that the prices paid by beneficiaries (assuming that the ceiling is the price used) at between 0.35 and 0.5 Dm/0.2 or 0.25 litre serving are significantly lower than the unsubsidised equivalent prices of 0.9 Dm/litre and 1.18 Dm/litre respectively for semi-skimmed and whole milk.

d) Competition with soft drink in schools

The level of competition that subsidised milk faces from alternatives like soft drinks varies by educational institution:

- *nursery schools*. Only milk is provided during break-time;
- *primary schools*. Only a limited proportion offer children access to soft drinks, and generally this tends to be fruit juice, squash or mineral water;
- *secondary schools*. In the vast majority, soft drinks (carbonated, juices and mineral water) are available to students, either from the same source as milk (ie, school shop) and/or from vending machines.

The typical range of prices that children pay for soft drinks in secondary schools in 1997 is shown in Table 3.5. Comparing these soft drink prices to those paid for milk shows that carbonated drinks are sold at a price that is significantly higher than subsidised whole and skimmed milk. The price at which fruit juice and mineral water is sold however, is much more competitive, and is often set at the same price as that of subsidised milk.

Table 3.5: Price ranges for carbonated drinks, fruit juices and mineral water sold in schools in 1997 (in DM per unit)

Soft drinks	Carbonated	Fruit juices	Mineral water
0.2 l, 0.25 l carton	N/a	0.50 – 0.80	N/a
0.2 l, 0.25 l bottle	0.80 – 1.00	0.50 – 1.00	0.50 – 0.80
0.25 l, 0.33 l tin	1.00 – 1.20	N/a	0.50 – 0.80
0.33 l bottle	1.00 – 1.20	0.80 – 1.00	0.50 – 0.80

Notes: N/a = not available

Source: Information from wholesalers and school shops

Price though only explains part of the competition faced by milk in secondary schools. Of equal importance is access to soft drinks and the influence of commission earnings that can be made by those responsible (usually caretakers) in schools for selling (via school shops) subsidised milk and soft drinks.

In most German secondary schools, the provision and sale of drinks to children is organised by school caretakers who sell products via school shops and vending machines. They invariably receive commission from suppliers of drinks (including dairies) for selling their products and these commission levels can be as high as 20 pf per 0.33 litre bottle or can of carbonated drinks, and only about 5 pf per milk portion. In addition, many suppliers of soft drinks provide refrigerators and vending machines for their products for which the supplier undertakes all maintenance. This low level of maintenance relative to the labour time and effort required to sell milk (sold via school shops only) means that, coupled with the commission levels that can be earned on soft drinks, caretakers tend to promote soft drinks more than milk.

3.1.4. Finland

a) Establishment of maximum price

Finland does not set either a national or regional maximum ceiling prices for each milk product supplied under the EU measure. This is because there are no maximum national/regional purchase prices set for each product from which the subsidy should be discounted.

The maximum selling price for each product is calculated as follows:

- where schools are supplied directly by managing dairies, the selling price is the wholesale dairy price for the product minus the EU subsidy;
- where schools have to buy the milk products from their local shop, the maximum selling price is the retail price minus the subsidy.

No administrative allowance is offered to the managing/claimant bodies from the subsidy element towards the cost of administration, distribution and refrigeration. These services are undertaken by dairies and schools.

b) National school milk schemes

As mentioned in section 1.2.6, Finnish law guarantees that all pupils between the age of 7 and 19 (ie, from primary school upwards) receive free school lunch, which includes milk and milk products. The nutritional target is set that one-third of the daily nutrient needs of children should be supplied at school. The right to free access to school meals and milk was first introduced for primary school children in 1943.

The EU subsidy for milk products contributes towards the provision of free school meals with the balance of the cost (the vast majority) being covered by the Finnish Exchequer.

c) Effect of EU subsidy on price of product paid by school children

The selling price per unit of semi-skimmed milk, net of the EU subsidy in 1997, varies between 3 FMk and 4 FMk per litre, depending on pack size.

As indicated in earlier sub-sections for other Member States, estimating the precise impact of the EU subsidy element on the price of the product charged to school children, and hence its impact on consumption of these products, is difficult to measure because of the following reasons:

- children in Finland have school meals and receive milk and milk products as part of these meals. Disaggregating the role and impact of the EU subsidy element from national subsidies within the school meal provision is not possible because no relevant data is collected (ie, the Intervention

Board does not request data from schools on how the EU subsidy has impacted on school meal costs);

- in nursery schools, parents pay fees for tuition and meals, and neither they nor their children pay directly for milk or milk products. The impact of the subsidy element is built into the meal through a price discount, and is therefore not known to parents. Furthermore, nursery school children have unlimited access to milk, and hence consume some milk that is covered by the EU subsidy (25cl per pupil per day) and some additional milk provided by national subsidy;
- children in primary and secondary schools receive free meals. The impact of the EU subsidy element, which is built into the meal cost, is of no relevance to children and parents (who do not pay towards the cost). The main 'interest' lies with the Finnish government as the provision of EU subsidy is effectively a partial contribution towards the provision of free school meals.

d) Competition with soft drinks in schools

Milk and milk product are provided at no cost to children in nursery schools (but at a cost to parents) and for free in primary and secondary establishments during break time and/or school meals. Competition from soft drinks tends to be very limited, but varies by educational establishment. Specifically:

- *Nursery schools.* Only milk is provided as a drink;
- *Primary schools.* Many schools offer free water and fruit juice as an alternative to milk during school meals;
- *Secondary schools.* Many schools offer free water and fruit juice as an alternative to milk during school meals. Some secondary schools also sell carbonated drinks (5 Fmk per 1/3 litre), though these are only available from vending machines outside the school meal area. The provision of vending machines for carbonated drinks depends on individual school policies.

Hence, milk remains by far the most consumed drink at schools, though fruit juices and carbonated drinks are increasing in popularity as they are now increasingly available and promoted by suppliers of these products (including provision of vending machines and refrigerators).

3.1.5. Sweden

a) Establishment of maximum price

Sweden does not set either a national or regional maximum ceiling price for each milk product supplied under the EU measure. This is because there are no maximum national/regional purchase prices set for each product from which the subsidy should be discounted.

The maximum selling price is usually calculated by deducting the relevant amount of subsidy from the purchase price of each product. Hence, selling prices for each product are calculated as follows:

- where schools are supplied directly by managing dairies, the selling price is the wholesale dairy/supplier price for the product minus the EU subsidy;
- where schools have to buy the milk products from a local shop, the selling price is the retail price minus the subsidy.

There is no administrative allowance offered to the management bodies from the subsidy element towards the cost of administration, distribution and refrigeration. These services are undertaken by claimant bodies and schools.

b) National school milk schemes

As indicated in sub-section 1.3.6, Swedish law guarantees that all pupils between the age of 7 and 19 (ie, from primary school to upper secondary) receive free school lunch, which includes milk and milk products.

The city councils/municipalities finance the school meal service, and the EU subsidy for milk products contributes towards the provision of free school meals. The remainder of the cost (the vast majority) is covered by the council/municipality.

c) Effect of the EU subsidy on price of product paid by school children

A survey undertaken by the Swedish Dairy Federation in 1998 amongst the organising bodies showed that the general wholesale price of whole milk paid for by schools was on average 5.11 SEK/litre (excluding taxes). After deducting the EU subsidy of 2.31 SEK/litre for whole milk, this resulted in a net price of 2.8 SEK/litre. As a comparison, the current retail price (ie, sold without subsidy) for the same pack size is 5.36 SEK (excluding taxes).

The full impact of the EU subsidy element on the price paid by school children, and hence its impact on consumption of products, is more difficult to measure because:

- *in nursery schools*, where consumption is via school meals, children do not pay directly for milk and milk products at the time of consumption and the subsidy element is subsumed within the cost of meals charged to parents (ie, parents do not know what the impact of the subsidy is on the cost of meals). Furthermore, nursery school children have unlimited access to free milk for drinking. This means that some children consume some milk which is subsidised by the EU scheme (25cl per pupil per day) and some milk subsidised from national funding;
- *children between the age of 7 and 19* receive free school meals and milk and milk products tend to be part of these meals. Hence for this element of consumption there is no price paid by parents or children – the EU subsidy element simply acts as a contributory source of finance towards the provision of school meals for councils/municipalities effectively offsetting some of the cost that otherwise would have fallen on these local bodies.

However, some indications of possible impact of the EU subsidy scheme on the availability of milk in eligible Swedish schools can be drawn from a 1996 survey conducted by the Swedish Dairy Federation. In this survey, a postal questionnaire was sent to 144 schools and nurseries from 77 councils and 125 replied. The main findings from the research were that 38% of nurseries and 54% of schools indicated that they had changed their milk product provision behaviour since Sweden joined the EU (ie, they had increased their level of purchases of (subsidised) products). Of these the majority (about 60% of nurseries and three-quarters of schools) indicated that the subsidy element had been the most important factor influencing increased up-take of these milk products.

d) Competition with soft drinks in schools

Competition from soft drinks is very limited, but varies by educational establishment. Hence in:

- *nursery schools*. The only alternative to milk (if any) is water;
- *primary schools*. Schools usually offer water and sometimes squash (free) as an alternative to milk during school meals;

- *secondary schools*. Most schools offer water and squash (free) as an alternative to milk during school meals. Fruit juice can also often be purchased in school canteens. Many secondary schools now also sell carbonated drinks, though these are only available from vending machines located outside school meals areas.

Milk is still the main drink consumed in Swedish schools, although the most popular alternative is squash. There has also been an increase in the availability of carbonated drinks in secondary schools in recent years, in response to:

- increasing levels of advertising and promotion by suppliers of these products;
- the provision of refrigerators and vending machines (by suppliers of the products);
- student/pupil bodies often being allowed to retain half the profits made from the sale of carbonated drinks for funding communal school activities.

3.1.6. Spain

a) Establishment of maximum prices

Maximum ceiling prices in Spain are set for the different products subsidised under the scheme. These are set by the competent authorities in each Autonomous Community (AC).

The maximum ceiling prices are calculated on the basis of the average retail price for each product (average of sale price in supermarkets and small shops), plus delivery costs (the cost of delivering the product to remote areas is taken into account), less the EU subsidy (converted in national currency at the prevailing green rate of exchange).

Each maximum ceiling price is fixed in pesetas per kilogram of product with variants according to:

- whether milk is supplied in 0.2 or 1 litre packs (reflecting the different supply costs);
- whether milk is pasteurised or UHT (both milk types have different market prices).

An indication of maximum ceiling prices for Category I, II and III products in the 17 different ACs for 1994¹¹ are shown in Table 3.6. The maximum prices vary significantly across the ACs, in particular for whole milk. These differences largely reflect product availability and pack size used.

Table 3.6: Maximum ceiling price for selected products (1994)

AC:	Plain whole milk (CAT I)			Plain semi-skimmed milk (CAT II)		Yoghurt (CAT I)	Cheese (CAT III)
	Pasteurised Pta/kg (1litre pack)	UHT Pta/kg (1litre pack)	UHT Pta/kg (0.2l pack)	Pta/kg (1l pack)	Pta/kg (0.2l pack)	Pta/kg	Pta/kg
Andalucia	60.53	70.83	132.60	70.83	xxx	163.26	573.58
Aragon	49.48	59.19	156.29	76.75	xxx	168.39	511.40
Asturias	41.38	61.38	112.38	78.94	129.94	155.90	229.14
Baleares	78.26	78.26	136.31	96.35	xxx	164.38	605.00
Canarias	32.00	49.00	60.00	80.00	xxx	200.00	925.00
Cantabria	xxx	70.00	120.00	79.46	126.55	165.00	312.50
C. La Mancha	56.39	63.39	109.00	79.00	xxx	190.88	600.00
Cast y Leon	46.00	51.00	111.00	83.24	139.89	167.00	557.15
Cataluna	81.13	65.98	122.33	82.00	135.00	176.38	573.15

¹¹ The latest data made available to the contractors.

EVALUATION OF SCHOOL MILK SCHEME

Extremadura	32.00	64.00	117.00	80.00	xxx	192.00	260.00
Galicia	60.00	60.00	111.00	84.00	xxx	176.00	269.00
Madrid	60.00	72.00	134.00	86.80	xxx	176.00	248.76
Murcia	52.54	69.24	115.90	xxx	xxx	167.28	301.58
Navarra	45.08	50.23	96.58	90.00	xxx	177.00	275.00
La Rioja	70.00	70.00	120.00	78.94	xxx	190.00	241.67
Valencia	55.79	61.39	108.45	xxx	xxx	163.28	xxx
Pais Vasco	34.38	34.38	xxx	xxx	xxx	xxx	557.00

Note: xxx = products have not been supplied by those communities

Source: DG VI European Commission

Information about any additional national subsidy schemes, prices paid by beneficiaries and the extent of competition from other competing drinks in Spain is not presented. This reflects the limited information provided to the contractors by the Commission and relevant Spanish authorities within the short time period of the evaluation.

3.2. Comparison across the member states

Table 3.7: Summary of key section findings

Elements	Scheme rules	UK	France	Germany	Sweden	Finland	Spain
Establishing the maximum price	Member states to set maximum price to be paid by student for each product.	No national or regional product maximum ceiling prices set. Maximum selling price set at school/LEA level based on calculation = price at which product purchased less subsidy plus an administrative allowance. UK is only member state that has built in this allowance. Milk products <u>not</u> obtained net of subsidy from supplier by recipient.	No national or regional product maximum ceiling prices set. Maximum selling price set at school/municipality level based on calculation = price at which product purchased less subsidy. Milk products <u>not</u> obtained net of subsidy from supplier by recipient (ie, recipient has to bear cost of subsidy during claimant period).	Maximum ceiling prices are set. These are done for each region by state, and according to flavoured/non-flavoured milk, yoghurt and packaging. Milk products obtained net of subsidy from supplier.	No national or regional product maximum ceiling prices set. Maximum selling price at dairy level based on price at which product supplied by dairy less subsidy. Milk products obtained net of subsidy from supplier.	No national or regional product maximum ceiling prices set. Maximum selling price at dairy level based on price at which product purchased less subsidy. Milk products obtained net of subsidy from supplier.	Maximum ceiling prices are set. These are done for each region, and according to product category, type and packaging. Milk products obtained net of subsidy from supplier.
National aid for milk and milk products in schools	N/A	LEAs can provide milk free to nursery school and 'low income' children. Government pay for difference after deduction of EU subsidy.	Until recently, government provided small contribution to top up EU subsidy. Majority of municipalities provide milk free to nursery school children. State partly subsidises school meals.	None provided.	All primary and secondary school pupils receive free school meals. The EU subsidy contributes towards the provision of this service.	All primary and secondary school pupils receive free school meals. The EU subsidy contributes towards the provision of this service.	Unknown.
Effect of EU subsidy on price of milk product	N/A	Direct and transparent when milk is sold as individual item at school meals (not often). 1997 average price per 1/3 pint of whole milk to school children was 6 to 14 pence compared to 17.5 pence equivalent price at retail level. Limited and difficult to establish when part of free milk in nursery schools or set school meal (most of the time).	Limited and difficult to establish as part of free milk in nursery schools and built into state subsidised school meals in primary and secondary schools. No specific price comparison data available.	Direct and transparent in primary and secondary schools as milk is sold as individual item. 1997 price comparisons show scheme price to school children for liquid milk was 0.35 to 0.5 Dm/0.2 or 0.25 litre equivalent compared to 0.9 to 1.18 Dm/litre at retail level. Effect diluted at nursery level.	Limited and difficult to establish, as it is part of meal provided in paid nursery schools and built into free school meals in primary and secondary schools. 1998 average liquid milk price to schoolchildren estimated to be 2.8 SEK/litre compared to unsubsidised retail equivalent of 5.36 SEK/litre.	Limited and difficult to establish, as it is part of meal provided in paid nursery schools and built into free school meals in primary and secondary schools.	Unknown.

Elements	Scheme rules	UK	France	Germany	Sweden	Finland	Spain
Competition versus soft drinks	N/A	Very little competition at nursery level (main alternative is water). At primary school, milk has to compete with fruit juice, squash or carbonated drink also offered as part of fee paid for school meals.	Very little competition at nursery level (main alternative is water). At primary and secondary level, fruit juice and sometimes carbonated drink also offered during school meal, but has to be paid for extra (unlike milk). Some secondary schools have introduced soft-drink vending machines.	No competition at nursery level (only alternative is water). At some primary schools, soft drinks may be offered as alternatives to milk. In secondary schools, competition from soft drinks very intensive. Subsidised milk sold from same shop outlet as soft drinks. Commission paid to vendor (caretakers) plays important role in influencing which products are promoted actively (ie, in favour of soft drinks).	No competition at nursery level (only alternative is water). A few primary schools and many secondary schools offer squash as an alternative to milk. Some secondary schools have soft drink vending machines outside meal area. Milk is main drink consumed.	No competition at nursery level (only alternative is water). Only a few primary schools and many secondary schools offer juice as an alternative to milk. Some secondary schools have soft drink vending machines outside meal area. Milk is main drink consumed.	Unknown.

Note: unknown for Spain = no information provided to contractors by the Commission or relevant national authorities

3.3. Overall impact of measure on price paid by beneficiaries

On *a priori* grounds, the aspect of causality to be examined in the study is the link between the scheme subsidy and the extent to which this results in changes to the price paid for milk and milk products consumed by schoolchildren, as beneficiaries. In seeking to evaluate this it is evident from the ways in which the scheme is operated and managed that there are several complicating factors common to the Member States examined in detail¹². These include the following:

- evaluating any causality assumes that the prices paid by schoolchildren are reasonably transparent to schoolchildren. Where liquid milk is provided as a free item, which it is to nursery schoolchildren in many countries or as part of a school meal, the liquid milk either has 'no price' to the school child (ie, is free) relative to competitor products or is part of a complementary good provided to the child (ie, as part of a meal which in Finland and Sweden is also free). Hence for a significant proportion of liquid milk provided to schoolchildren across the EU, there is no transparent price available for comparison at the level or point at which schoolchildren consume the liquid milk;
- for all dairy products other than liquid milk, consumption tends to be as an ingredient or as a specific item selected within a school meal. As discussed above, this means that there is rarely any transparent price at point of consumption. The only instances where this may occur is in circumstances where a dairy product has to be purchased from a choice of main meals or desserts (eg, a plate of cheese). However, the contractors were not able to identify any instances where administering authorities collect such information;
- where milk and milk products supplied via the scheme are provided as part of school meals the price paid for the products tends to be subsumed within the cost of the school meal. In this instance, disaggregating the impact of the milk subsidy on the price of the school meal has not been possible because no such information was made available by the administering authorities in the Member States examined¹³;
- the linkage of the scheme to national schemes for free school milk or meals and consumption of milk and milk products as part of a meal means that the impact of the scheme on price tends to affect the price paid for milk and milk products at the level of the school and in some cases parents (who may be required to pay for school meals). Again the research undertaken identified that there is a lack of data collected by administering authorities concerning prices paid by parents for school meals and the extent to which the scheme milk product subsidy may affect this price;
- in a number of Member States (eg, the UK, France, Sweden and Finland), maximum ceiling selling prices are not set. Instead selling prices can vary by school according to the price paid by an individual school for milk and milk products supplied. This complicates the scope for assessing the extent to which the subsidy is passed on (see below);
- even in the Member States where maximum ceiling prices are set (eg, Germany and Spain), the prices actually paid for milk consumed can be lower.

Given the above complications the following key points can be made:

¹² The contractors perceive that these common factors are also likely to occur in the other Member States and therefore the overall assessments presented are probably reasonably representative of the EU as a whole.

¹³ It is however noted that from 1997/98, in France Onilait now requires managing bodies to collect and provide information that may allow this assessment to be made. Also, in the UK, the regulations for implementing the scheme clearly state that applicants must demonstrate that the subsidy has been passed on. Presumably this implies that relevant data is collected but may not be subsequently aggregated and presented in a form suitable for evaluation purposes.

a) Price paid by schoolchildren

In the majority of cases it is not possible to fully identify the impact of the scheme subsidy on the price paid by schoolchildren. This mainly reflects poor provision of appropriate price information. The only instances where price transmission is possible to track at this level is where milk is provided as a drink and schoolchildren are required to pay for the drink themselves at time of consumption (ie, at break time or lunch time from school canteens, vending machines or shops). However, none of the authorities contacted in the course of the study indicated that they systematically monitor or track these prices and hence there is no data available to assess the extent to which the subsidy for such forms of liquid milk consumption is consequently passed onto schoolchildren. The main example where it is possible to show that the subsidy is passed onto schoolchildren is where, for example in Germany maximum ceiling prices are set annually for each Länder, and schools are required to keep detailed records of the prices at which they purchased and sold milk to children. Hence, the comparison of Germany maximum ceiling prices in 1997 with unsubsidised prices for liquid milk at the retail level shows a significant difference between the two sets of prices (see sub-section 3.1.3), suggesting that the subsidy is clearly being passed on to the beneficiaries. Likewise, evidence from the UK (sub-section 3.1.1) and Sweden (sub-section 3.1.5) also shows a clear difference between the two. In addition, when the UK withdrew from the secondary school part of the scheme, it was reported that the price paid by students for 1/3 pint cartons rose by about 50% (5-6 pence/carton) which was greater than the level of subsidy previously provided within the scheme.

b) Price paid by parents

As indicated above parents are the next level of price recipient in cases where they pay for school milk consumed by children via school meals or the provision of for example, nursery education. However, it has not been possible to track prices paid for such services and the contribution of the school milk subsidy to these prices in any of the Member States examined. This is because no such data is collected in any of the Member States examined.¹⁴

c) Price paid by schools

In the countries where maximum ceiling prices are set (eg, Germany) the maximum prices to be paid by schoolchildren for liquid milk and whole milk yoghurt are clear and transparent. The procedures for setting them in each region are clear and based on assessments of dairy product prices in the past year less allowances for transport and packaging. Schools and dairies are also required to keep detailed records of buying and selling prices which may be subject to inspection. Hence, the administrative and control procedures ensure that the subsidy element is passed onto beneficiaries (a subsidy element net of allowances for packaging and transport: see below) through a combination of setting maximum ceiling prices and through control procedures.

In Member States that do not set a maximum ceiling price the scope for fully assessing the extent to which the subsidy is passed on is more difficult. The administrative and control mechanisms established to determine the distribution of subsidies to claimant bodies are clear and require claimants to show how the subsidy is passed on. Hence, the control procedures are the main mechanism used to ensure that the subsidy (net of any packaging, transport or administrative allowances) is passed on.

However it should be re-iterated that whilst the record keeping and control procedures established (in both countries that operate maximum ceiling prices and countries that allow maximum selling prices to

¹⁴ The contractors perceive this is the case given that no such data was provided by either the Commission or national administering authorities contacted.

vary by school) appear to ensure that the subsidy is passed on, the lack of information on actual prices sold to beneficiaries made available to the contractors means that our conclusions are made on a combination of limited quantitative information (notably the examples cited above for the UK and Germany) and qualitative assessment. Overall, it would appear that across all Member States the administrative and control procedures established appear to ensure that the subsidy is passed on and are reflected in the price paid by beneficiaries (even if in most instances the beneficiary cannot see the impact).

Finally, it is noted that in some Member States the procedures used to set maximum selling prices take into account factors such as transport and packaging (eg, Germany) and administration (eg, the UK). To some extent this negates some of the subsidy received (eg, in the UK 87.5% of the average subsidy in 1997 was re-claimed as an administrative allowance). However, whilst such administrative allowances mean limited transmission of the subsidy through to the price paid for milk (an unforeseen side effect), this loss of some of the subsidy element appears to apply at the school level only. The prices paid by schoolchildren (where apparent) appear to be significantly lower than the unsubsidised alternatives at retail level (see UK and German examples above). The rationale for introducing these allowances (eg, to overcome the dis-incentive associated with the time and cost involved in complying with the administrative requirements in the UK) appears to have reasonable justification and is not adversely affecting the transmission of subsidy to the price paid by school children. In an ideal situation it would be possible to examine and compare the extent to which some schools in the UK currently using the scheme would probably not have joined or remained in the scheme if the provision for offsetting administrative costs had not been introduced.

d) *Milk price to school children compared to prices of competing goods*

The key finding relating to prices of milk compared to prices of competing goods consumed by school children are:

- there is very little information collected in Member States about the prices charged to school children for liquid milk and competing products. Of the Member States examined in detail data was identified only in Germany and Finland. In Germany (sub-section 3.1.3), the price of subsidised liquid milk to school children was 0.35 to 0.5 Dm/0.2 or 0.25 litre serving compared to higher prices for all competing drinks such as carbonated drinks, fruit juices and mineral waters. In the absence of the subsidy, the retail price of milk in Germany is broadly similar to carbonated drinks but more expensive than the price of fruit juices and mineral water. In Finland, the subsidised liquid milk price to school children in 1997 was between 3 and 4 Fmk per litre compared to 15 Fmk per litre equivalent for carbonated drinks;
- comparisons between the price of subsidised milk products (including liquid milk) and competing products consumed with or as part of school meals were not possible. This was due to a lack of suitable data collection in Member States;
- competition for liquid milk from other drinks is heavily influenced by factors other than price (see section 4 for further discussion). In particular, national, regional, and school level decision-making is the key factor of influence because decisions made at these levels determine availability of alternatives to school children. In general, there are very few alternatives made available at nursery and primary school levels. Only at secondary school level does there tend to be significant opportunities for pupils to choose between alternatives.

4. Availability of scheme milk products in school

In this section, the impact of the scheme on the availability of milk and milk products in schools is examined. The section is structured as follows:

- overviews of milk products availability by scheme (product) category and packaging type, for the six Member State case studies;
- summary table of key features and comparisons;
- analysis and conclusions drawn about the scheme impact on product availability in schools.

4.1. Member State case studies

4.1.1. The UK

a) By scheme category classification

The main points relating to volumes supplied under the EU school milk measure in the UK (Table 4.1 and Table 4.2) can be summarised as follows:

- the most important milk product category in volume and milk equivalent terms is Category I (whole milk and whole milk yoghurt). This accounts for 98% of all products supplied under the scheme in the UK (in whole milk equivalent terms), and is virtually all whole milk;
- the volume of semi-skimmed milk supplied under the scheme is currently very small, and since 1991/92 has been less than 10% of the total supplied. This is explained partly by the lower subsidy provided on skimmed milk and the greater availability of whole milk in schools;
- very little flavoured milk is supplied under the scheme – 2% of the total;
- the total volume in whole milk equivalent supplied under the scheme has been falling continuously since 1992/93, and current volumes used are equal to only 36% of the levels used in 1991/92. This decline occurred following changes to the EU school milk regulation and the UK's decision to opt out of all the discretionary elements;
- the product category that has experienced the largest decline is Category II (semi-skimmed milk products). This is due mainly to a combination of the removal of semi-skimmed yoghurts from the EU scheme (from the 1994/95 school year) and opting out of the secondary school element of the scheme by the UK government.

Table 4.1: UK School milk product quantities by category (in tonnes)

School year	Category I	Category II	Category III, IV, V, VI	Total	Total whole milk equivalent
1991/92	83,560	8,337	4,543	99,440	129,701
1992/93	87,382	9,791	3,770	100,943	121,712
1993/94	86,144	9,343	0	95,487	89,839
1994/95	75,281	7,910	0	83,191	80,274
1995/96	63,568	6,461	0	70,029	65,669
1996/97	45,636	1,718	0	47,354	46,718

Source: Intervention Board

Table 4.2: Breakdown of EU school milk supplies in the UK ⁽¹⁾⁽²⁾

Product	Million litres				
	1992/3	1993/4	1994/5	1995/6	1996/7

EVALUATION OF SCHOOL MILK SCHEME

Product	Million litres				
	1992/3	1993/4	1994/5	1995/6	1996/7
Whole milk	83.8	79.6	71.6	59.6	42.3
<i>of which flavoured</i>					0.9
Semi-skimmed milk	7.3	7.5	7.5	5.6	1.7
<i>of which flavoured</i>					0.15
Total milk	91.1	87.1	79.1	65.2	44.0
Whole milk yoghurt	2.1	0.9	0.2	0.1	0.014
Semi-skimmed milk yoghurt	2.2	0.9	-	-	-
Total yoghurt	4.3	1.8	0.2	0.1	0.014
	Tonnes				
Natural cheese	3671.1	-	-	-	-
Fresh and processed cheese	97.2	-	-	-	-
Grana Padano cheese	0.2	-	-	-	-
Parmigiana Reggiano cheese	1.3	-	-	-	-
Total cheese	3769.8	-	-	-	-

Notes:

1. Academic Year
2. Products no longer supplied to secondary school pupils and for use as ingredients in the preparation of meals as from Summer term 1996

Source: Intervention Board

b) Type of packaging

The main pack types in which milk and milk products are distributed to students are:

- principally, in milk cartons of 1/3 pint (189ml) (the easiest way of supplying milk);
- to a minor extent, in larger containers (several pints) from which milk is served in glasses;
- in a few cases, the provision of milk fountains in school canteens and milk bars (mostly in Scotland);
- yoghurts (in 125g containers) during school meals.

4.1.2. France

a) By scheme category classification

The main features relating to the volumes supplied under the EU school milk measure in France (Table 4.3) are:

- the main product category in volume terms is Category I (whole milk and whole milk yoghurt). However, in whole milk equivalent terms, cheese categories (Categories III and IV) are the largest category;
- the total volume in whole milk equivalent supplied under the scheme has been falling continuously since 1992/93. The most significant annual declines occurred in 1993/94 and 1994/95, following changes to the school milk measure;
- the product category most adversely affected by changes has been Category II (semi-skimmed milk products). This is mainly attributed to the removal of semi-skimmed yoghurts from the EU scheme from the 1994/95 school year.

Table 4.3: France school milk product quantities by category (tonnes)

School year	Category I	Category II	Category III	Category IV	Total	Total Whole Milk Equivalent
1991/92	36,130	34,917	6,907	5,571	83,525	127,595
1992/93	34,381	36,771	7,295	6,081	84,528	149,664
1993/94	28,572	26,265	7,466	5,827	68,130	138,334
1994/95	23,587	15,759	6,935	5,159	51,440	93,690
1995/96	22,207	15,656	6,974	5,400	50,237	94,288
1996/97	20,930	15,141	6,856	5,405	48,332	93,520

Source: Onilait

b) By education establishment

The main points relating to supply of EU school milk by education establishments (Table 4.4) are:

- nursery schools are the main recipients of whole milk under the scheme. This is supplied outside school meals (eg, during playtimes). Total usage was 10.2 million litres in 1996/97, accounting for 21% of total milk equivalent volume supplied under the scheme;
- the most important milk product supplied through school meals under the scheme, in whole milk equivalent terms, is cheese;
- semi-skimmed milk is provided in slightly larger quantities than whole milk products during school meals, but has shown a more rapid decline in use than whole milk products since 1991/92;
- since 1991/92 use of all products has declined in volume terms. However, the largest declines have been for semi-skimmed milk/yoghurts and whole milk/yoghurts where usage has fallen by 57% and 51% respectively. Use of whole milk cartons in nursery schools fell by 28% over the same period whilst cheese use in school meals fell by only 2%.

Table 4.4: School milk supplied by establishment: France

School year	Outside meals to nursery schools	During schools meals to children in nursery, primary and secondary schools		
	Whole milk cartons in million 20cl (million litres) Category M	Whole milk and whole milk yoghurt (million litres) Category A	Semi-skimmed milk and yoghurt (until 1994) (million litres) Category B	Cheese Category C and D (tonnes)
1991/92	71.3 (14.3)	20.8	33.9	12.5
1992/93	68.4 (13.7)	19.7	35.7	13.4
1993/94	64.2 (12.8)	14.9	25.5	13.3
1994/95	58.5 (11.7)	11.2	15.3	12.1
1995/96	54.3 (10.9)	10.7	15.2	12.4
1996/97	51.1 (10.2)	10.1	14.7	12.3

Source: Onilait

c) Type of packaging

The main pack types in which milk and milk products are distributed to students in France are:

- principally, in milk cartons of 20cl;
- to a limited extent, the provision of 10 litre containers in milk fountains in school canteens;
- yoghurts in 125g containers during school meals;
- 17.5g processed cheese portion packs during school meals;

- slices of cheese such as camembert during school meals;
- servings of fromage frais during school meals.

4.1.3. Germany

a) By scheme category classification

The main features of EU school milk usage in Germany (table 4.5) are:

- the total volume of school milk has declined significantly (36%) between 1992/3 and 1996/97. This decline occurred following changes to the EU school milk regulation;
- the most important milk product category, both in volume and whole milk equivalent terms, is Category I (whole milk and whole milk yoghurt), which accounted for 98% of all the products supplied under the scheme in 1996/97 in whole milk equivalent terms;
- due mainly to pupils' preferences, two thirds of the Category I volume was sold as flavoured whole milk/whole milk yoghurt, most of which was chocolate milk, flavoured by vanilla and strawberry milk. About one third of milk sold under Category I was plain whole milk/whole milk yoghurt. Plain milk is mainly consumed in nursery schools and flavoured milk in primary and secondary schools;
- semi-skimmed milk volumes under the scheme fell by 50% after the removal of semi-skimmed yoghurt from the scheme at the end of 1993. This category accounted for 1.6% of total volume in 1996/97. It has never represented more than 4.5% within the period under review.

Table 4.5: School milk quantities provided in Germany under the scheme by category (tonnes)

School year	Total tonnes	Category I	Category II	Category III, IV, V, VI, VII	Total whole milk equivalent
1991/2	125,522	120,000	5,382	140 ¹	126,000
1992/3	132,946	128,297	4,509	140 ¹	133,300
1993/4	136,630	130,908	4,749	971 ¹	137,300
1994/5	99,426	96,957	1,661	808 ²	98,666
1995/6	92,457	90,843	1,078	536 ²	91,962
1996/7	86,231	83,831	1,352	1,048 ²	85,540

Notes:

1. 1991/92: 30t buttermilk and 110t cheeses; 1992/93: 20t buttermilk and 120t cheeses; 1993/94: 508t buttermilk and 463t cheeses
2. Only Category VII

Source: EDA, Federal Ministry of Food, Agriculture and Forestry

b) Type of packaging

The main types of packaging in which milk and milk products are offered in Germany are:

- milk cartons of 0.2 litres or 0.25 litres (mainly to primary and secondary schools);
- returnable glass bottles of 0.2 litres or 0.25 litres (mainly to primary and secondary schools);
- in 1 litre containers for serving into glasses in nursery schools;
- in a few cases, milk is provided in dispensers made of stainless steel, containing a 10 litre or 20 litre plastic bag.

4.1.4. Finland

a) By scheme category classification

Table 4.6 and Table 4.7 show the amount of product for which subsidy has been paid under the scheme since Finland joined the EU in 1995. The key points are:

- the most important milk product category in volume and milk equivalent terms is Category II (semi-skimmed milk at 1.5% and milk at 1% fat). This mainly reflects product preference of school children;
- no subsidised flavoured drinks are provided to schools (on health grounds);
- very little cheese is provided under the scheme, as most cheese consumed in schools is of lower fat than permitted under the scheme;
- very little whole milk is supplied under the scheme (it is almost exclusively used as an ingredient in the preparation of school meals);
- the volume of milk supplied under the scheme more than doubled between the 1995/96 and 1996/97 school years. Most of the increase is accounted for by semi-skimmed milk;
- a third of milk consumption in schools is accounted for by milk not subsidised under the scheme (ie, with less than 1% fat).

Table 4.6: Quantities aided under the scheme (tonnes)

School year	Category I	Category II	Category III & IV (cheese)	Total	Total whole milk equivalent
1995/96	466	12,227	239	12,932	9,609
1996/97	1,126	28,096	522	29,744	22,118

Source: Ministry of Agriculture

Table 4.7: Quantities aided under the scheme (tonnes)

Category	Calendar year	1995	1996	1997
I	Whole milk	11	492	925
II	Semi-skimmed milk (1.5%)	294	12,266	20,092
III	Fresh and Processed cheese	1	72	127
IV	Other cheese	2	172	319
	Milk (1%)	0	699	2,969
	Total	308	13,701	24,432

Source: Ministry of Agriculture

b) Type of packaging

20cl cartons of milk are no longer provided to students at schools, primarily on environment and waste reducing grounds. The most commonly used packaging is a 1 litre (or sometimes 1.5 litre) milk carton box, from which the milk is served into glasses. The second most commonly used packaging is 20 litre dispenser boxes. These dispenser boxes are made from cardboard with a plastic bag inside. All carton boxes are returnable.

4.1.5. Sweden

a) By scheme category classification

The volume of products for which subsidy has been paid under the scheme since Sweden joined the EU in 1995 are shown in Table 4.8. Its main features are:

- the main milk product categories supplied in volume and milk equivalent terms are Category II (semi-skimmed milk) and Category I milk with 3% fat content. As in Finland, this reflects product preference of school children;

- very little flavoured milk and full fat whole milk are supplied under the scheme, due in part to limited interest;
- the volume of milk supplied under the scheme has increased by 15% between 1995 and 1997 (most of this increase is accounted for by semi-skimmed milk);
- as in Finland, a significant proportion of milk consumed in schools is not accounted for by products subsidised within the EU scheme. Hence, many schools provide skimmed milk with a fat content of less than 1%, which is not eligible for subsidy under the EU scheme.

Table 4.8: Quantities of school milk supplied by category under the scheme in Sweden (tonnes)

Product Category	Product	Calendar year		
		1995	1996	1997
I	Whole milk	9,465.2	46.2	50.8
I	Whole milk (flavoured)	14.6	0.1	0.1
I	Yoghurt (whole milk)	488.1	28.7	15.3
I	Milk 3%	1	10,703.5	10,829.1
I	Milk 3% (flavoured)	1	4.6	5.9
I	Yoghurt 3%	1	554.7	727.5
II	Milk, semi-skimmed	26,725.5	29,547.1	30,387.8
II	Milk, semi-skimmed (flavoured)	4.3	4.0	13.9
III	Fresh cheese	27.9	31.5	32.3
III	Processed cheese	24.2	55.9	51.3
IV	Other cheese	438.1	523.5	584.8
	Total volume in tonnes	37,188.0	41,499.8	42,698.7
	Total whole milk equivalent	30,400.0	34,500.0	36,340.0

Notes:

1. For 1995 included in whole milk, whole milk flavoured, and yoghurt whole milk as appropriate

Source: Swedish Intervention Agency

b) Type of packaging

Almost all milk in Sweden is sold in large returnable cartons (Tetra-Pak or Elopak). The most commonly used package size is a 20 litre dispenser box with a plastic bag inside. These are available in canteens in primary and secondary schools.

The second most commonly used packaging is 1 litre or 1.5 litre cartons, from which the milk is served into glasses (the main method used in nursery schools and day centres). On environmental grounds, 20cl milk cartons are no longer provided to children at schools.

4.1.6. Spain

a) By scheme category classification

The main points relating to volumes supplied under the EU school milk measure in Spain (Table 4.9) can be summarised as follows:

- the most important milk product category in volume and whole milk equivalent terms is Category I (whole milk and whole milk yoghurt), followed by cheese (in whole milk equivalent terms);
- the total volume in whole milk equivalent supplied under the scheme has been falling continuously since 1993/94. In 1996/97 it was equal to 43% of the 1993/94 levels;
- the largest decline occurred in 1994/95, following changes to the school milk measure, when quantities supplied fell by 48% in one year;
- the product category most adversely affected by the changes has been Category I (whole milk).

Table 4.9: School milk product quantities in Spain by category (tonnes)

School year	Category I	Category II	Category III and IV	Total	Total Whole Milk Equivalent
1991/92	52,850	3,399	1,893	58,142	67,865
1992/93	52,495	2,239	2,355	57,089	70,391
1993/94	49,853	1,570	4,920	56,343	75,442
1994/95	21,067	2,461	2,414	25,942	39,451
1995/96	19,176	584	2,140	21,900	34,595
1996/97	17,484	526	2,125	20,135	32,589

Source: EU Commission

b) Type of packaging

The package sizes made available for milk supplied to schools under the scheme in Spain are mainly 0.2 litre and 1 litre containers.

4.2. Comparison across the member states

Table 4.10: Summary of key section findings

Elements	UK	France	Germany	Sweden	Finland	Spain
Product volumes supplied	Main product is whole plain milk. Very little flavoured milk and semi-skimmed milk provided.	Main milk product in milk equivalent terms is cheese, followed by whole milk. Nursery schools are main beneficiary of whole milk.	Main product is whole milk. Two-thirds of this is flavoured milk. Very little semi-skimmed milk provided.	The most important scheme product is semi-skimmed milk, followed by 3% whole milk. Very little 3.5% whole milk provided (used in meal preparation).	The most important scheme product is semi-skimmed milk, followed by 1% low fat milk. Very little whole milk provided (mainly used in meal preparation).	Most important category in milk equivalent terms is whole milk products, followed closely by cheese. Very little semi-skimmed milk used.
Packaging	Milk mostly supplied in 1/3 pint (189 ml) cartons.	Milk supplied mostly in 20cl cartons, and cheese as portions.	Milk supplied in 1 litre containers to nursery schools and 0.2/0.25 litre cartons/returnable bottles mostly to primary and secondary schools.	Non re-usable and wasteful packaging is avoided. Milk bought in 20 litre dispenser boxes most common, followed by 1/1.5 litre carton boxes.	Non re-usable and wasteful packaging is avoided. Milk bought in 1/1.5 litre carton boxes most common, followed by 20 litre dispenser boxes.	0.2 or 1 litre containers provided for milk.

4.3. Impact of scheme on product availability

The key findings relating to impact of the EU school milk subsidy on product availability in schools are as follows.

a) There are both some similarities and differences of product availability in schools across the Member States examined in detail. However, these tend to be derived from common underlying factors (see below) which lead the contractors to conclude that the findings relating to six Member States are probably reasonably representative across the EU as a whole.

b) *National and school specific policies towards provision of general and health specific education.*
The most important factor determining product availability is policy set at the national and school level. These tend to reflect a combination of national Member State policies towards the provision of health and general education services and attitudes of head teachers and teachers within schools. Hence:

- *at the nursery level*, in some Member States examined (eg, Sweden, Finland, Germany), only water and milk are made available whilst in others (eg, UK and France) only limited alternatives (squash) are also made available. National education policies are the main determinants of product availability, with the EU subsidy scheme playing only a limited and indirect role. This role is as a provider of part-subsidy and as such probably makes a positive contribution towards making milk available for consumption. It has however not been possible to identify quantitative data to support such a conclusion because of a lack of baseline data which could assess what products might be offered in the absence of the scheme;
- *at primary schools*, milk mainly competes with non-subsidised fruit juices and squashes as alternative drinks at meal times. Opportunities to consume alternatives tend to be greater in some countries (eg, UK, France, Germany) than others such as Finland and Sweden. However, as most products are consumed as part of meals, the respective prices of different products (subsidised milk or non-subsidised alternatives) are rarely known to parents when they pay fees for the meals or, is of little interest to parents, if part of free school meals. National, local and school specific policies largely dictate product availability, with limited influence from the EU scheme (it is probably largely considered as a part subsidy towards the cost of school meals and hence its impact on product availability is limited and indirect);
- *at secondary schools*, competition for liquid milk as a drink from competing products tends to be greatest in all countries at this educational level. There is usually a wide range of product alternatives available to school children via school shops, vending machines or sold with school meals. In general, alternative product availability is greatest in countries such as the UK (which does not operate the secondary element of the scheme), France and Germany. In these countries, (subsidised) milk sold with meals or from school shops usually has to compete with alternatives (notably carbonated soft drinks) that are also sometimes made available through vending machines. These products are also often subject to significant levels of active, commission-driven promotion (by vendors such as school caretakers in Germany). In contrast in Finland and Sweden, whilst subsidised milk competes with alternatives, the availability of alternatives tends to be more restricted (eg, if made available they are sited in vending machines away from meal eating areas). As at the other educational levels, the role of the EU scheme on product availability is probably limited and indirect. Nevertheless, as the EU scheme improves the relative competitive position of milk *vis-à-vis* alternative drinks this probably encourages a higher degree of milk take-up by schools as a

drink offered for consumption than might otherwise have occurred. As indicated above, this conclusion is derived from qualitative assessment of findings and the perceptions of some individuals interviewed (from organisations involved in scheme administration). Quantitative information to support such a finding is however not available because of a lack of control groups and baseline data. The only example found that illustrates possible impact relates to the UK's opt-out of the secondary school option in 1994/95 which is reported to have resulted in about a 20% decrease in the consumption of milk in UK secondary schools. It is however not possible to attribute this decline in consumption to the 'loss' of the subsidy because of a lack of data on the extent to which milk products continued to be made available or whether some schools simply stopped making milk available for children to consume.

- c) *National product take-up within the scheme.* Availability is also significantly influenced by which elements of the scheme Member States choose to take-up. Hence, there is clearly greater product availability in countries such as France and Spain which have taken up the cheese option relative to the UK which has not. Difficulties in monitoring whether the price benefits have been passed on, low and falling interest in the product and national budgetary implications (in the case of the UK) have tended to be the main factors influencing different take-up of products (eg, the UK's and Germany's withdrawal from the cheese elements).
- d) *Willingness to offer products for which underlying consumption levels are increasing.* In Finland and Sweden, the main liquid drink products actively made available to school children are semi-skimmed and skimmed milk¹⁵, both products for which underlying consumption is increasing, and low fat cheese¹⁶. In contrast, in the UK, the main product made available in those LEAs involved in the scheme is whole milk for which underlying consumption levels are falling. This largely reflects relative subsidy levels (between whole and semi-skimmed milk), historical provision and administrative convenience.
- e) Where liquid milk is supplied to school children for drinking, there is limited evidence that the scheme has influenced product availability. The main example relates to the dominance of whole milk in the UK and France where one of the reasons cited (eg, in a UK Intervention Board Survey of 1998) was the positive differential subsidy level paid to whole milk relative to skimmed milk. Factors other than the scheme, notably a perception that whole milk offered the greatest level of nutritional benefits for nursery and primary school children were widely perceived to be as important in influencing availability.
- f) It is noted that in sub-section 4.1 above, the changes to product eligibility in 1994/95 resulted in a significant decline in provision of some milk products such as semi-skimmed yoghurts in most Member States. Whilst this may suggest that the scheme had previously positively contributed to making these products available to school children, the lack of information relating to the consumption of similar products outside the scheme, both before and after 1994 makes it difficult to assess the full contribution of the scheme.
- g) The nature of the scheme conditions was also cited by a number of people contacted in administration and managing bodies as influencing product availability. Specifically the setting of the maximum entitlement at 0.25 litres/head/day is perceived to have contributed to the dominance of supply of small 0.2, 0.25 or 1/3 pint 'consumer' packs in countries such as the UK,

¹⁵ Not available for support under the EU scheme.

¹⁶ Not available for support under the EU scheme.

France and Germany because the use of such packs facilitates relatively easy administration and monitoring of the maximum entitlement. Only in countries such as Finland and Sweden, where national legislation dictates that small retail packs are not used (on environmental grounds) do alternative forms of larger, re-usable pack sizes dominate.

- h) During the study, some commission officials indicated that the evaluation should include examination of an hypothesis that some of the EU subsidy benefit was not being transmitted to the price paid by beneficiaries because it was being absorbed as additional costs of supplying milk in small 'throw away' pack sizes. In other words, the scheme subsidy might be providing a highly profitable business for suppliers of specialist packaging. In seeking to address this issue we make the following points:
- the evidence presented in this section and summarised in i) above highlights that the scheme conditions (maximum entitlement) have probably contributed to the widespread use of small pack sizes in some countries;
 - the use of small 'throw away' pack sizes is considered by many in managing bodies (notably in the UK and France) as a positive factor influencing the decision to supply or make available milk for drinking in schools (makes distribution and monitoring of the scheme easier). To the extent to which this is occurring then the use of this form of packaging is entirely appropriate to encouraging take up of the measure. It is however not possible to demonstrate how many schools might withdraw from the scheme if such packs were prohibited in favour of dispensing from larger containers.
 - the evidence presented in section 3 suggests that there is reasonable transmission of the subsidy through to the price paid by school children for liquid milk for drinking, regardless of the form in which the milk is dispensed.

5. Promotional activities

This section focuses on the promotional and informational aspect applied to milk and milk products and the extent to which the EU subsidy scheme is incorporated in these. It is structured as follows. An overview of promotional and advertising of milk and milk products in the UK, France and Germany is presented to place in context the subsequent discussion of educational campaigns that have targeted the young and focused on the positive nutritional attributes of milk and milk product consumption. Finally the specific context of promotion concerning the school milk scheme is considered.

5.1. Promotional and advertising campaigns and expenditure: general

5.1.1. The UK

a) Milk and milk products

UK expenditure on advertising milk and dairy products amounted to £44.8 million in 1996/97 (Table 5.2). Advertising expenditure on liquid milk represented only 6.3% of this. The most advertised milk product was cheese (£20.7 million), followed by yoghurt and fromage frais (£10.2 million).

The amount of money spent on liquid milk advertising decreased over the period 1993/94 to 1996/97 by 74%, the vast majority of the decline taking place in generic advertising (partly as a result of the ending of the 'dancing bottles' campaign). Spending on non-generic milk advertising also declined, but from a lower base, and was due to the cessation of spending on evaporated and powdered milk.

Table 5.1: Advertising expenditure in the UK¹ - milk and dairy products

April – March	£ thousand			
	1993-1994	1994-95	1995-96	1996-97
Milk				
Generic	8,170	4,557	2,662	1,457
Non-generic ²	2,504	3,047	843	1,306
of which:				
liquid milk	1,259	1,325	843	1,306
Total milk	10,674	7,604	3,505	2,763
Total butter	6,026	6,644	5,797	8,320
Total cream	3,499	3,767	3,056	2,898
Cheese	16,707	15,937	17,396	20,682
Yoghurt and fromage frais	12,248	7,321	14,640	10,157
Total Milk and Dairy Products	49,154	41,273	44,394	44,820

Notes:

1. Total television, radio and press rate-card expenditure as recorded by AC Nielsen-MEAL (does not take account of bulk or other discounts)

2. Includes condensed, evaporated, powdered and flavoured milks

Source: AC Nielsen-MEAL

b) Competing drink products

In 1993/94, UK advertising expenditure on milk was second only to carbonated soft drinks, although still some £35 million less (Table 5.2). However, by 1996/97, annual spending on milk advertising had declined rapidly in contrast to significant increases in advertising expenditure on other drinks. Hence

by 1996/97, advertising expenditure on milk in the UK was at a lower level than all other categories of drinks.

Table 5.2: Advertising expenditure in the UK¹: milk versus various non-dairy drinks

April – March years	£ thousand			
	1993-94	1994-95	1995-96	1996-97
Total milk	10,674	7,604	3,505	2,763
Cordials and squashes	7,667	8,457	14,121	10,379
Carbonated soft drinks	45,830	51,803	67,563	65,440
Mineral waters	4,697	7,573	6,356	4,677
Fruit juices	3,865	4,129	2,876	2,797

Notes:

1. Total television, radio and press rate-card expenditure as recorded by AC Nielsen-MEAL (does not take account of bulk or other discounts)

Source: AC Nielsen-MEAL

5.1.2. France

a) Milk and milk products

In 1997, 1,912 million Francs was spent on advertising milk and dairy products (excluding ice cream) in France. Advertising expenditure on these products has expanded continuously since 1993, and was some 50% higher in 1997 than in 1993. Very little of the advertising expenditure for milk or a milk product is reported to be generic, with the vast majority specific, brand related advertising.

Table 5.3: Advertising expenditure on milk and milk products in France, 1993-97

million Francs	1993	1995	1996	1997
Total milk	140.6	119.4	150.5	200.3
Cream	24.6	20.9	35.8	34.2
Butter	65.2	43.4	40.2	64.3
Cheese	646.3	791.6	849.4	896.5
Fresh products	384.4	510.1	674.3	716.4
Total	1,261.1	1,485.4	1,750.2	1,911.7

Source: Cidil/Secodip

At the dairy product level, cheese and fresh products are the two milk product categories most targeted by advertising expenditure, accounting for 47% and 37% respectively of the total in 1997. Advertising on liquid milk amounted to 10% of total advertising expenditure.

b) Competing drink products

Relative to other competing drinks, advertising expenditure was less than half the level devoted to carbonated soft drinks, but about 30% higher than advertising expenditure levels for fruit juices (Table 5.4).

Table 5.4: Expenditure on publicity for soft drinks in France - 1997

	% share				Total in value
	Press	Radio	Television	Posters & others	
Total milk	n/a	n/a	n/a	n/a	200 million Francs
Carbonated soft drinks	2.2	8.9	70.5	18.3	461 million Francs
Fruit juice	2.9	0.9	70.5	25.7	148 million Francs

Notes: n/a: not available

Source: Secodip

5.1.3. Germany

Advertising expenditure on milk and milk products in Germany was 508.5 million DMk in 1997. This represented a 36% increase compared to levels of expenditure in 1992. The vast majority of this is understood to be on fresh products, desserts, cheese and flavoured milks. Advertising expenditure on non-alcoholic beverages (water, fruit juice, energy drinks, carbonated drinks), amounted to 420 million DMk in 1996.

5.2. Educational campaigns and their nutritional effects

Few studies and surveys have been undertaken to establish whether dairy-related educational campaigns undertaken amongst children and the young have had any benefit specifically on children's nutritional up-take. Most studies undertaken have focused on the success of general generic campaigns in terms of up-take and attitudes towards milk and milk products. We have identified some work related to these issues, and these are reviewed briefly below.

- *The experience of the UK*

- During 1996/97, the National Dairy Council (NDC) secured funding from the European Commission for a continuation of milk advertising to mothers of children under five. The EC funded campaign took the form of television advertising supplemented by press advertisements both in women's magazines and mother-and-baby titles. In reporting back to the Commission, the NDC was able to say that this advertising had been highly successful in reaching, and communicating to, the target audience. Image scores stayed steady at a time when the product was under pressure from many sources and there was an increase in drinking among both the under-tuos and the two to five year olds;
- one of the major objectives in the 1980s educational campaigns was to maintain or improve consumer perceptions of milk's nutritional value against a background of increasing concern about increasing levels of fat in the diet. Most people had no idea what percentage of fat there is in milk and most grossly over-estimated the amount. Recent consumer research indicates that many people still believe the fat content of milk to lie between 20% and 50%. Considerable confusion continues to exist about the nutritional content of low fat milks. Many people believe that when milk is skimmed a lot of the goodness is lost. Both skimmed and semi-skimmed milk are believed, erroneously, to have considerably lower levels of protein, calcium, vitamins and minerals than whole milk;
- evidence from the '*Int Milk Brilliant*' television campaign undertaken in 1996 and 1997 demonstrated that a number of key positive consumer attitudes towards milk increased in the areas where the advertising was focused compared to decreases in positive attitudes in the chosen control area, Anglia, where there was no advertising. Independent analysis of sales figures indicated that the advertising more than paid for itself in terms of additional volumes of sales generated.

- *The experience of France*

- A recent Cidil poll of the generic liquid milk "sensation pures" campaign (started in 1991) showed that it reached a level of awareness of 85% amongst young people (aged 15-25). This result exceeded awareness of recent advertising campaigns of well-known drink brands such as Perrier, Coca-Cola and Joop;
- surveys by Cidil have shown that it is difficult to measure the image of dairy products amongst the young.

- *The experience of Germany*

- The result of a survey by the Institute for the Management of Dairy Companies showed that children are generally well informed about the nutritional value of milk and milk products. For example, 91% of the pupils surveyed in primary schools and about 85% of those in surveyed secondary schools agreed with the statement 'milk is a healthy product because it contains a lot of vitamins and minerals';
- older people tend to be more aware than young people that fresh milk products contain nutrients which can help to prevent certain illnesses associated with ageing (eg, osteoporosis). This has led to promotions to children not focusing on arguments about the link of consumption to prevention of ageing process illnesses. Rather promotions targeted at young people have focused on the essential role of milk in the diet and its supply to the body with easily digestible nutrients.

5.2.1. Comparison of national scheme milk campaigns across the Member States

The promotion of milk in schools in the Member States reviewed (France, UK, Germany, Sweden and Finland) is detailed in sub-section 5.3 below. A comparison across the five countries of the targets of promotion, the channels of communication and the type of facilities provided for milk in schools is summarised in Table 5.5 to Table 5.7 below.

Table 5.5: Targets of promotion

	Policy-makers	Parents	Teachers	Children	Nutritionists	Education authorities	Caterers
UK			✓	✓	✓	✓	
Finland		✓	✓	✓	✓	✓	✓
France			✓	✓	✓	✓	
Germany			✓	✓	✓	✓	
Sweden	✓		✓	✓	✓	✓	✓

Table 5.6: Channels of communication

	Leaflets/ booklets	Magazines	Videos	Posters	Sponsorship	School visits and lessons
UK	✓	✓	✓	✓	✓	
Finland	✓	✓	✓	✓	✓	✓
France		✓		✓	✓	✓
Germany	✓		✓	✓		✓
Sweden	✓	✓	✓	✓	✓	✓

Table 5.7: Type of facilities for milk in schools

	Provision of refrigerators	Milk bars/dispensers	Sponsorships/ promotions	Recyclable packaging
UK	✓	✓	✓	
Finland	✓	✓	✓	✓
France	✓	✓	✓	
Germany	✓	✓		✓
Sweden	✓	✓	✓	✓

5.3. EU school milk scheme promotion

5.3.1. UK

The EU school milk scheme is subject to limited scheme-specific promotion although milk consumption *per se* is heavily promoted amongst children in the UK. The National Dairy Council (NDC), which has responsibility for the promotion of milk in the UK, has produced two extensive and thorough Action Packs covering milk in schools and school milk schemes, which include pamphlets, fact sheets, leaflets, posters, references and stickers. The first was made available in 1996 and the second, entitled *'Milk and children, a natural partnership'*, was published in 1997. The packs were designed in conjunction with school children across the country, and have proved very popular.

The targets of the promotional packs have been: governors, teachers, children, dieticians, education authorities, school nurses, school caterers, health promotion staff.

LEAs and schools are encouraged to promote the scheme so that children and parents are aware of the nutritional value of the product and that the product is subsidised by the EU. Despite this encouragement and an administrative allowance for promotion, only a limited number of LEAs actively promote the scheme, as many perceive it to be too time consuming. Most LEAs simply pass on promotional/educational material that is provided to them by the government and dairy organisations to individual schools. In respect of specific promotion of the EU scheme, the only material made available is an A3 colour poster specifically produced by the National Dairy Council and a requirement on schools in the scheme to inform parents at least once a year that milk supplied is at reduced prices as a result of the EU scheme.

The NDC is currently funded by milk producers via the Milk Development Council and by dairy companies via the Dairy Industry Federation. Its Education Programme is designed to build children's loyalty to milk and dairy products through a strong presence in schools. Material produced by the NDC is linked to the National Curriculum (booklets, teaching packs and videos) and is designed to ensure that the role of dairy farming and food manufacture is appreciated by children in their formative years and that they understand the role of milk and dairy products in the diet. This work is further

supported by workshops for student teachers, exhibitions and a termly newsheet supplied to over 16,500 schools.

The NDC also runs a comprehensive Nutrition and Health programme for both health professionals and consumers, which focuses on providing key positive messages about the health benefits of dairy products (based on sound scientific principles). It produces literature on the role of milk and milk products in a healthy balanced diet and organises seminars and exhibitions for health professionals. It also works closely with health promotion agencies, organisations representing health professionals and independent health experts.

5.3.2. France

The EU scheme is promoted and encouraged in a general manner only, through activities undertaken by CIDIL. More generally, activities to promote milk products to school children are funded by the Ministry of Agriculture through ONILAIT and by the dairy industry sector via CIDIL.

The main relevant promotional activities undertaken include:

- magazines distributed to all municipalities (with over 2,000 inhabitants), concerning the beneficial links of milk consumption and nutrition;
- posters sent to schools and teachers promoting milk and milk products;
- provision of information to municipalities and schools;
- undertaking specific promotions via sponsorships and media;
- organisation of two seminars a year in each region of France for teachers, nutritionists and dairies;
- lessons provided in schools by experts on cheese.

5.3.3. Germany

The EU scheme in itself is mainly promoted by most of the dairies and wholesalers which employ staff who visit schools to inform them about the EU school milk scheme and its regulations as well as about the school milk products they offer.

At a more general level, promotional activities amongst children are organised and financed at the national level by the Centrale Marketing-Gesellschaft der Deutschen Agrarwirtschaft mbH (CMA) and at the State level by the Milchwirtschaftliche Landesvereinigungen (as well as by dairies and some wholesalers).

The Milchwirtschaftliche Landesvereinigungen, instituted in eleven States, represents and is funded by dairy companies. These institutions, as well as the CMA, produce: booklets, leaflets, teaching packs, videos and posters.

These are sent to schools (or can be ordered free of charge) for integration into schools' curricula. This material informs teachers and pupils about the role of dairy farming, how milk products are made and about their nutritional importance in diet.

Dairies and some wholesalers, as well as some nutritionists, also support and complement this work through their participation at workshops, 'project weeks' in schools or by organising school dairy farm visits.

The Milchwirtschaftliche Landesvereinigungen, together with nutritionists, organisations presenting health professionals, independent health experts or with health promotion agencies also organise special workshops for teachers, school authorities and parents. These usually focus on informing these important target groups about milk and milk products and their role in a healthy diet.

5.3.4. Finland

Milk in general is heavily promoted in all primary and secondary schools and also in a large number of nursery schools, although promotion of the EU scheme itself is limited.

Promotional work undertaken by the Finnish Dairy Nutrition Council is targeted at schools in Finland, and mainly focuses on the health aspect of consuming milk (ie, its high content of calcium, vitamins and minerals).

The targets of promotional activities are: parents, teachers, children, nutritionists, education authorities, school nurses, caterers and health care authorities.

The main channels of communications used for promotional activities are personal visits, lecture tours, direct mailing, competitions and media advertising. The Finnish Dairy Nutrition Council has produced a lot of promotional material (eg, brochures, tapes, video films and posters) concerning the positive benefits from consuming milk. Additionally, each year a new national milk promoter is selected. This "milk girl" (or sometimes "milk boy") visits schools and kindergartens where she or he promotes milk and milk products.

The dairy industry also gets involved in general promotional activities at the school level. It mainly provides educational resources (eg, information packs), and has recently started providing milk dispensers in schools.

5.3.5. Sweden

No central promotional activity aimed at pupils is carried out directly in connection with the EU school milk measure. However, milk is promoted in about 95-100% of all primary and secondary schools by the Dairy Nutritional Council. The targets of promotional activities are: pupils, teachers, nutritionists, education authorities, caterers, government and politicians and the National Food Administration.

Promotional work in Sweden mainly focuses on the health aspect of consuming milk (ie, its high content of calcium and minerals). The main channels of communication used for promotional activities are personal visits, direct mailing and advertising. Furthermore, seminars are organised and video tapes and magazines provided.

The Swedish dairy industry also undertakes general promotional activities. Examples cited include milk bars and the provision of educational resources (eg, information packs).

5.3.6. Spain

During the four month contractual period of this study, the contractors were unable to obtain any relevant information for Spain. It should however be noted, that Spain was not targeted as a country for coverage in the project when the evaluation contract was signed.

5.4. Overview of the scheme promotional activities and effectiveness in attaining education objectives (improving knowledge of the nutritional qualities of milk products)

The sub-sections above highlight significant similarities in the way that milk and milk products are promoted across a range of Member States. As such, the contractors believe that it is reasonable to conclude that these key features are also probably representative of activities undertaken in the other Member States.

Key points to note are:

- general (generic) milk promotion activities tend to be dominated by the supply chain (dairies), industry level bodies and sometimes government bodies with educational service responsibilities;
- almost all promotion targeted at the young focuses on the positive nutritional aspects of milk and milk product consumption;
- the Member State case studies show that there is very little promotion undertaken of the EU subsidy scheme. It tends to be greatest when dairies are involved as managing agents (eg, in Germany, Finland) mainly because they have a business incentive to encourage consumption and to highlight the subsidy element derived from the scheme. Even then however, the level of promotion tends to be limited to, for example representatives of dairies making occasional visits to schools to inform children about products available under the EU scheme and the general nutritional benefits of consumption. In contrast in countries where local authorities, municipalities and schools themselves are the managing agents, promotion to increase the level of awareness about the EU subsidy scheme is even lower (eg, in the UK the only tangible form of specific EU scheme promotion is the provision of a poster that local authorities can make available to schools);
- given the very low level of EU subsidy scheme promotion undertaken across Member States, it is difficult to identify any examples of good practice. The only aspect of 'good practice' noted is that where dairies are significantly involved as managing agents, the level of scheme promotion is greatest. However, encouraging dairy involvement as managing agents appears to be strongly related to how important dairies perceive the school milk market segment to be relative to other target segments. Hence, in Finland dairies consider the market as significant and hence worthy of attention and promotional effort. In contrast in countries such as France and the UK (and in Germany in recent years) there has been limited interest in the market amongst dairies. This mainly reflects the widespread view (usually based on past experience of supplying school milk) that this market segment is much less profitable than other segments;
- the evidence presented above shows, very low levels of scheme promotion have been undertaken and the nature of most milk product promotions focus on other issues. Therefore, the contractors conclude that the measure has had negligible effect in attaining its educational objective to improve knowledge of the nutritional qualities of milk products. Whilst measures are being undertaken to improve knowledge of the nutritional qualities of milk amongst the young, these rarely refer to the EU subsidy scheme or to milk consumption in schools. For example measures under Regulation 2073/92, and reported in the Commission Communication on the Action Programme to Promote Milk Consumption highlighted a variety of measures undertaken and targeting at the young. The majority of these focused on positive health and nutritional aspects of milk consumption, often linked to sporting events and general fitness but rarely mentioned the EU subsidy scheme. The only way in which the EU subsidy scheme may possibly contribute towards improving nutritional knowledge is by increasing the product availability to school children and hence increasing the opportunity to consume. As indicated in section 4, the scheme has probably

had a very limited, positive impact on product availability. It is also important to recognise that the Regulations establishing the School Milk Measures do not contain formal reference to any objective to improve knowledge of the nutritional qualities of milk products. Therefore we do not find it surprising to conclude that the School Milk Measure contributes very little to attaining this objective, especially as there is no provision within the measure for funding scheme promotion (the measure is purely a price subsidy delivery mechanism).

6. Number of beneficiaries

6.1. Estimation of the number of beneficiaries

The target analytical procedure to be used (as indicated in the contractor's proposal) to identify the number of beneficiaries by age group in the EU-15 and selected Member State was an estimation according to the following procedure:

- select three age groups - nursery, primary and secondary (rather than just a 3-18 age group, as some countries do not apply the measure to secondary schools);
- divide the product allocation in each age group by the number of days at school and by the 0.25 litres in milk equivalent that can be allocated per student per day;
- identify (from appropriate statistics) the actual number that **could** have benefited in each age group, to determine trends in rate of up-take in two ways:
 - compared to number of students in the eligible schools taking up the measure (to determine up-take in those schools participating in the scheme);
 - compared to the total eligible student population in each age group (to determine up-take amongst eligible population).

However, data limitations¹⁷ have prevented the above procedures being undertaken. Consequently, our analysis in each Member State examined and at the EU-15 level has had to be limited to the following:

- divide the *product allocation as a whole* by the average number of days at school and by the 0.25 litres in milk equivalent that can be allocated per student per day;
- identify the actual number that could have benefited *across all eligible age groups*, to determine trends in rate of up-take compared to the *total eligible student population*.

The results of this analysis are shown in Table 6.1. The reader should note that the calculations have been made on the basis that the maximum subsidy entitlement is achieved. Hence, each eligible child in each Member States is assumed to consume his/her full allocation of 0.25 litres of milk per day at school and does so on the full number of official school days¹⁸. Hence, this is likely to overstate consumption especially for nursery children many of which do not attend school five days per week. Nevertheless, this approach does enable some important direct comparisons to be made across the Member States examined, and is in our assessment the 'best' available estimate that could be made given the limited data made available.

The key points highlighted in Table 6.1 are:

- the estimated number of student beneficiaries in the EU declined between 1992/93 and 1996/97 by 33%, even though during that period, three new Member States joined the EU;

¹⁷ In particular, information relating to the number of schools and pupils taking part in the scheme and quantities distributed by school which were indicated in the project terms of reference as being available from the Commission for this evaluation were not provided.

¹⁸ The contractors were not able to identify data relating to actual numbers of attended days at schools by pupils in any of the Member States examined in detail.

- of the Member States examined in the study (excluding the new acceding countries of Finland and Sweden), the decline in numbers of student beneficiaries fell within a range of 38% in France and Germany rising to 62% in the UK over the 1992/93-1996/97 period. The main reason for the significant decrease in the UK can be attributed to the UK opting out of the secondary school element of the scheme;
- assuming that all eligible students from nursery upwards attend school to the full number of official days, and consume their full allocation of 0.25 litres of milk/day allowed under the scheme, the estimated number of student beneficiaries in the EU-15 for 1996/97 was equal to only 12% of the total eligible number of students (ie, only 12% of the maximum subsidy entitlement was taken up). This compares with a beneficiary level of 19% in 1992/93. Hence at the EU level, the volumes supplied under the scheme are only about one eighth of the total volume that could be made available;
- the maximum subsidy entitlement up-take ratio has fallen significantly between 1992/93 and 1996/97 in the UK, France, Germany and Spain. Up-take levels in 1996/97 were 16% in France and the UK, 13% in Germany and 8% in Spain;
- the highest levels of up-take relative to entitlement can be found in Finland and Sweden (51% and 44% respectively).

6.2. Key factors determining estimated number of beneficiaries and maximum subsidy entitlement up-take

At a general level the main factors determining the number of estimated beneficiaries and the maximum subsidy entitlement up-take are likely to include:

- the number of education authorities and schools participating;
- the number of pre-school (3-5 year old) children attending school that are eligible;
- whether a child attending a participating school has access to subsidised milk;
- the variety of milk products provided;
- the volume of milk product (in milk equivalent) provided to each child (eg, 0.2 litres rather than 0.25 litres);
- the frequency with which children consume the milk products (eg, every other day);
- the relationship between the EU school milk measure and national school measures.

Each Member State is affected by a (different) combination and emphasis of factors. These are discussed further below for the main five Member States examined.

Table 6.1: Estimated beneficiaries of the school milk subsidy

	EU		UK		France		Germany		Spain		Finland	Sweden
	1992/93 ²	1996/97	1992/93	1996/97 ³	1992/93	1996/97	1992/93	1996/97	1992/93	1996/97	1996/96	1996/97
Volumes supplied under the scheme												
in tonnes milk equivalent (A1)	565,294	375,832	121,712	46,718	149,664	93,520	137,300	85,730	70,391	32,589	22,118	34,165
in million litres milk equivalent (A1)* 971.16 (A2)	549	365	118	45	145	91	133	83	68	32	21	33
Number of million 0.25 litre milk servings (A2)/0.25 (=B)	2,196	1,460	473	181	581	363	533	333	273	127	86	133
Official number of school days (C)	200	200	205	205	207.5	207.5	200	200	200	200	188	190
Estimated number of beneficiaries (D=B/C) (thousands)	10,980	7,300	2,364	907	2,907	1,816	2,667	1,665	1,367	633	430	664
Actual number of students attending eligible establishments(E) (thousands)	59,000	61,500	10,285	5,768	11,454	11,454	13,002	13,002	7,454	7,454	848	1,510
% maximum subsidy entitlement up-take (D compared to E)	19	12	23	16	25	16	21	13	18	8	51	44

Notes:

1. Based on 1994/95 data from Eurostat
2. EU-12 for 1992/93 and EU-15 for 1996/97
3. Secondary schools no longer eligible under the scheme

The UK

The maximum subsidy up-take to entitlement ratio was only 16% in 1996/97. This relatively low level of up-take can be mainly explained by the following:

- local education authorities (LEAs) do not have to take-up the scheme - about 40% do not currently take it up;
- even if LEAs do take-up the scheme, individual schools can decide not to be part of the scheme. Also, in many schools, especially primary schools, meals are not made available to children (a key delivery mechanism). Hence, even within LEAs that participate in the scheme the up-take at the school level is estimated to be only 53% amongst primary schools and 91% amongst nurseries;
- in primary schools that participate, access to milk is usually centred on pre-paid (by parents) school meals only. Many children do not take school meals on a daily basis, or at all;
- the most commonly used serving is 0.189 litre cartons, rather than the full allocation of 0.25 litre (ie, 20% less). This mainly reflects the use of the 189ml carton size as standard for the national free nursery milk scheme;
- many 3 to 5 year old children only attend play groups and crèches which are not eligible to use the scheme;
- most children that attend eligible pre-school establishments such as nurseries do not do so every day;
- whole milk is the only scheme milk product choice provided to children in many nursery and primary schools in the UK, whilst in primary schools competing soft drinks are also often offered as an alternative. Many children in participating primary schools, therefore do not consume milk every day, often choosing alternatives.

France

The maximum subsidy up-take to entitlement ratio was, like the UK, only 16% in 1996/97. The main reasons for this low level of up-take are:

- municipalities and schools do not have to participate in the subsidy scheme. The percentage of primary and secondary students attending participating schools is about 40% of all relevant children of primary and secondary school age (ie, 3.6 million out of 9.2 million children attending primary and secondary schools). At the nursery age levels, the percentage is about 80%;
- the numbers benefiting from school milk in these eligible primary and secondary schools is further reduced by the limited access to school meals in many schools - many schools do not provide school meals and of those children who have access to school meals, many do not take one on a daily basis (only 50% of students are estimated to eat in school canteens);
- the most commonly used serving is 0.2 litre cartons, rather than the full allocation of 0.25 litre (ie, 25% less). This mainly reflects the use of the 200ml carton size as standard for the national aid scheme to nursery schools;
- many children in participating primary schools and secondary schools that take school meals do not consume their full milk/milk product available allocation each day. This reflects the availability of alternatives, especially in secondary schools, and restricted choice of milk products (usually to one type only such as whole or semi-skimmed).

Germany

The maximum subsidy up-take to entitlement ratio in Germany was only 13% in 1996/97 reflecting the following main reasons:

- schools do not have to participate in the subsidy scheme - many do not;
- there is no provision of any additional national aid schemes (as occurs for example, at the nursery level in the UK and France) which offer additional subsidies and promotes up-take;
- the most commonly used carton size is 0.2 litres, rather than the full allocation of 0.25 litre (ie, 20% less);
- only a few primary and secondary schools offer school meals;
- whole milk in primary schools is usually offered at break times, often with a choice of soft drinks (both have to be paid for). In secondary schools, where most drinks are made available via school shops, milk competes with other highly promoted drinks. Hence, children in many participating primary schools and secondary schools do not consume their full milk allocation every day;
- only about 21% of pupils in eligible schools were estimated to have participated in the school milk scheme in 1994/95 (source: Federal Ministry of Food, Agriculture and Forestry survey).

Finland

The maximum subsidy up-take to entitlement ratio was 51% in 1996/97. This represents the highest level of the Member States examined and reflects the following main reasons:

- all primary and secondary schools offer free school meals which usually include milk and milk products. All students also tend to have school meals. Whilst schools do not have to take-up the EU subsidy scheme to fund the provision of milk and milk products (ie, the Finnish Exchequer would otherwise cover the cost), about 95% of eligible primary and secondary schools do participate in the EU scheme;
- all nursery schools offer milk for drinking (eg, at break times) and almost all attending children consume milk. About 80% of eligible nursery schools participate in the EU scheme;
- schools usually provide a choice of semi-skimmed milk (1.5% fat), milk at 1% fat, and skimmed milk with less than 1% fat, and a choice of low or 'normal' fat cheeses. Skimmed milk accounts for 30% of total milk consumed in schools, but this milk category (and low fat cheeses) is not eligible for subsidy under the EU scheme;
- many primary and secondary schools offer free fruit juice as an alternative to milk. Milk is therefore not the only product available to students, hence some may not consume any milk and many of those that do take milk consume less than 0.25 litres per day. The average milk consumption (including skimmed milk) in schools per pupil is currently between 15cl and 22cl per day, and in nurseries 12cl to 20cl per day.

Sweden

The maximum subsidy up-take to entitlement ratio was 44% in 1996/97. The main reasons why this level of up-take is higher than most other Member States, but lower than in Finland are:

- all primary and secondary schools offer free school meals which usually include milk and milk products. All students also tend to have school meals. Whilst schools do not have to take-up the EU subsidy scheme to fund the provision of milk and milk products (ie, the Swedish Exchequer would otherwise cover the cost), about 95-100% of eligible primary and secondary schools do participate in the EU scheme;
- all nursery schools offer milk for drinking (eg, at break times) and almost all attending children consume milk. About 85% of eligible nursery schools participate in the EU scheme;
- schools usually provide a choice of semi-skimmed milk (1.5% fat), milk at 1% fat, and skimmed milk with less than 1% fat, and a choice of low or 'normal' fat cheeses. Skimmed milk and low fat

cheese accounts for a significant part of total milk consumed in schools, but these product categories are not eligible for subsidy under the EU scheme;

- many primary and secondary schools offer free squash as an alternative to milk. Milk is therefore not the only product available to students, hence some may not consume any milk, and many of those that do take milk consume less than 0.25 litres per day. The average milk consumption (including skimmed milk) in schools per pupil is currently about 15cl per day.

6.3. Factors influencing coverage (efficiency and effectiveness in reaching target beneficiaries)

Whilst sub-section 6.2 presents findings relating to key factors influencing coverage across five case studies, there are a number of consistent findings across the Member States that lead the contractors to conclude that the factors of influence in these countries are probably broadly representative of influence factors in all Member States.

Our overall findings concerning efficiency and effectiveness of the scheme in reaching target beneficiaries are as follows:

- a) Take-up across the EU in 1996/97 was equivalent to only 12% of the maximum subsidy entitlement volume. This compares with 19% in 1992/93. This suggests a relatively poor level of efficiency and effectiveness for the scheme in reaching its target beneficiaries. It should also be noted that during this period, the Union expanded from 12 to 15 Member States and two of the new Member States were countries with above average levels of take-up (51% in Finland, 44% in Sweden). Hence the level of effectiveness has also deteriorated over the last five years.
- b) The variations in take-up of maximum subsidy entitlement across the EU (effectiveness) are primarily related to national and local policies for general and health education rather than being related to the nature of the EU scheme itself. Hence, in relatively high uptake countries such as Finland and Sweden:
 - milk product provision to schools is widest and includes products for drinking such as skimmed milk which are popular (ie, reflect underlying positive consumption trends: see section 7) but which are not included in the EU subsidy scheme;
 - milk plays a prominent role in general health educational programmes;
 - there is often deliberate restriction of access to alternative drinks (notably at primary and nursery levels), based on health and education grounds;
 - school milk is made freely available to nursery school children;
 - all school children receive free milk products as part of free school meals.

In contrast, in relatively low uptake countries (eg, Germany) there is no provision of additional national scheme aid, there is a wider availability of alternative drinks (ie, no limiting of alternatives on health grounds), there is limited access to school meals (the main focus of consumption) and there is often a common perspective amongst many in the education services that they should play only a limited role in the provision of health/nutritional education and information.

- c) Whilst factors outside the scheme (see b) above) are the primary factors of influence for take up, the scheme itself contributes in the following ways:
 - by providing a subsidy it contributes to increasing product availability (albeit as assessed in Section 4, in a very limited positive way). **in the case of liquid milk for drinking** (where

schoolchildren are required to pay for drinks) the scheme offers milk at prices that tend to be competitive relative to alternatives (see Section 3). Attempting to quantify this impact is however difficult because of data limitations concerning reasons for take up amongst schools across the EU. Nevertheless, when changes were introduced to the scheme in 1994/95, qualitative evidence from the UK authorities suggests that when the UK opted out of the secondary school element of the scheme there was a 20% decline in liquid milk consumption in these schools as some schools stopped making milk available for consumption. In addition, where availability continued, fewer pupils purchased milk because its price had risen – again in the UK it was estimated that the price of milk for drinking to secondary school children rose by about 50%. Hence this example suggests that the scheme has probably made a small positive contribution to increasing the availability and consumption of milk amongst the target beneficiaries of the scheme (ie, in the absence of the scheme there would probably be a smaller proportion of schoolchildren consuming milk in schools);

- on the negative side, the findings so far presented (especially the discussion presented in Section 2 and appendix 1) show that many school administrators, head teachers and teachers do not take up the scheme because of the administration requirements of implementing the provision of school milk to children¹⁹. In particular the requirements are perceived to be a disincentive to take up because of the time commitments required for ordering milk, collecting money from children, distributing milk, supervising students drinking, ensuring maximum entitlement per pupil is not exceeded and the administration of form returns (in some cases it was estimated that these activities take up between half and one day per week of a person's time to deal with). In addition, there is a financial disincentive to take up associated with the requirement for schools to fund the purchase of milk and having to wait up to four months before obtaining re-imburement from the scheme. Whilst the contractors accept that some of this administrative burden relates to the administration of the provision of school milk *per se* (ie, some of the elements would occur even if a national scheme only was operated), some of this burden stems directly from the EU scheme. However, it is impossible to disaggregate this impact from the total.

The net overall efficiency and effectiveness of the scheme in reaching its target beneficiaries is poor. It is probably effective in contributing in a very small way to increasing the level of product availability and consumption amongst schoolchildren but is not the main factor of influence determining take up amongst schoolchildren.

¹⁹ Qualitative evidence obtained from discussions held with some representatives of managing agents and administrators during the course of the study and the findings of a 1998 UK Intervention Board survey of managing agents and education authorities.

7. EU milk consumption: general and scheme specific comparisons

This section focuses on issues of relevance to the impact of the EU school milk scheme on the EU market for milk products and its effectiveness in attaining the scheme's main (and only formal, as stated in founding Regulations) objective of increasing consumption of milk products. It is structured as follows:

- general trends in milk and milk product consumption are presented;
- the level of consumption via the scheme is placed within the context of general consumption levels and trends;
- an assessment of the contribution of the scheme effectiveness in influencing consumption levels is made, mainly through the use of some desk research considerations of policy on/off examples.

7.1. Trends in general supply/demand balances for milk products

Key features relating to general consumption of milk products in the EU are discussed below. This covers the EU as a whole followed by more detailed consideration of six case study Member States.

7.1.1. EU level

The supply of milk in the EU-15, its usage, intervention stocks and trade in milk products between the EU-15 and third countries are detailed in Table 7.1, for the period 1992 to 1997. The main features and developments over this period can be summarised as:

- due mainly to the influence of the milk quota system, milk output in the EU is fairly stable, with virtually no change in total output between 1995 and 1997;
- milk deliveries to dairies have also been relatively stable, but on-farm use and direct sales have declined. This is the case throughout the EU;
- butter manufacture absorbs about one third of the total milk produced in the EU. In 1995, butter absorbed 32.3% of the total available whole milk - around 38 million tonnes whole milk equivalent. However, its share of total milk usage continues to decline slowly;
- cheese-making absorbs almost as much liquid milk as butter manufacture, and continues to increase its share in absolute and relative terms. Production is concentrated in four Member States. Hence, in 1995, around 75% of total production (6.3 million tonnes) was produced by France (26%), Germany (23%), Italy (14%) and the Netherlands (11%). Demand is mainly concentrated in Germany (27%), France (24%) and Italy (18%);
- consumption as drinking milk is the third most important use. Output for domestic market consumption has increased marginally between 1992 and 1996;
- the manufacture of cream and fermented milk (yoghurt and yoghurt preparations) has also increased steadily in both absolute and relative terms. The main producers are Germany, the UK, France and Spain;
- the manufacture of milk powder (whole, semi-skimmed and skimmed milk powder) still absorbs most skimmed milk produced in dairies. Output of milk powder has however declined since 1992, mainly due to a fall in SMP production;
- in recent years changes in production and consumption have followed similar trends. However, the EU milk sector is still characterised by a significant structural surplus. This (net) surplus is estimated to be around 9.0 to 9.5 million tonnes (whole milk equivalent), most of which is exported or sold into intervention. In addition, a significant part of internal consumption is subsidised by means of special disposal measures, covering about 11 million tonnes milk equivalent;

- intervention stocks for butter have fallen rapidly since 1992, and represented less than 1% of butter output in 1997. SMP stocks fell until 1995, but then increased again and accounted for 11% of output in 1997;
- the majority of the EU's surpluses are exported with the assistance of export refunds. The main exports in volume and milk equivalent terms are milk powder (whole, semi-skimmed and skimmed milk powder), followed by cheese. Volumes exported since 1996 have declined compared with the 1992-1995 annual average, due in part to constraints imposed by the 1995 GATT Agreement.

Table 7.1: EU-15 milk supply and usage

	'000 tonnes					
	1992	1993	1994	1995	1996	1997
Production of milk	120,581	120,048	120,208	121,253	121,223	121,209
Milk delivered to dairies ¹	110,901	110,979	111,513	113,112	113,630	113,177
Output by dairies²						
Sales of liquid milk to the domestic market	29,102	28,940	28,880	29,017	29,262	n/a
Production of fermented milk products	5,229	5,120	5,313	5,493	5,680	n/a
Production of cheese	5,914	6,004	6,156	6,322	6,467	6,506
Production of cream	n/a	1,500	1,563	1,707	1,756	1,772
Production of butter	1,756	1,742	1,690	1,757	1,783	1,731
Production of milk powder	2,197	2,224	2,166	2,213	2,132	2,099
Intervention stocks						
SMP	47	36	72	14	126	135
Butter	173	161	59	20	39	11
Net Exports of main products³						
Liquid milk	222	277	257	288	322	n/a
Cheese ⁴	356	433	419	440	432	393
Butter	176	132	96	159	110	130
Milk powder	969	835	698	922	704	781

Notes.

1. Milk delivered to dairies = production of milk minus on-farm usage and direct sales
2. This reflects usage of liquid milk by dairies converted into the various principal milk products. Data on the exact level of domestic consumption are not available due to carryover stocks and losses
3. For liquid milk and milk powder, EU-12 data up to 1994
4. 1992 = EU-12
5. n/a = not available

Source: National Data, Eurostat, EU Commission

7.1.2. The UK

The main features and developments in the UK milk and milk product market over the 1992-97 period are:

- milk output has been relatively stable, fluctuating annually by no more than 1.5%;
- of the 14.4 million tonnes of milk usually supplied for human consumption (the remainder is used to feed animal stock on farm), nearly half is supplied as liquid milk to consumers. However, the production of liquid milk for the domestic market declined by 4% between 1992 and 1997;
- after liquid milk, butter and cheese account for the largest use of milk (in whole milk equivalent terms). UK cheese production has increased by some 20% since 1992 whilst butter production has declined marginally;
- cream and condensed milk production has increased since 1992 by about 18%;

- the product to have declined the most in output volume terms since the mid-1990s is milk powder (due mainly to a cut-back in SMP production);
- as milk quotas were originally set at a level at which the UK is structurally deficient in milk, it is a net importer of milk (in whole milk equivalent terms). The main milk products imported are cheese and butter;
- despite an overall domestic supply deficiency in milk, the UK has become a net exporter of cream and condensed milk. It is also a surplus net producer of milk powder.

Table 7.2: UK milk supply and usage

	'000 tonnes					
	1992	1993	1994	1995	1996	1997
Milk output	14,759	14,810	15,012	14,793	14,780	14,987
Production of main milk products						
Liquid milk for domestic market	7,158	7,235	7,125	7,090	7,014	6,960
Butter (includes butteroil)	127	141	148	133	126	137
Cheese	327	333	334	358	377	390
Cream and condensed milk	451	444	467	460	474	473
Milk powder	219	236	262	258	245	230
Intervention stocks						
Butter	10	9	5	1	4	2
SMP	1	2	7	0	27	40
Net Exports¹						
Butter	-75	-61	-63	-53	-65	n/a
Cheese	-182	-129	-155	-146	-171	n/a
Cream and condensed milk	+82	+110	+122	+125	+138	n/a
Milk powder	+98	+95	+108	+110	+72	n/a

Notes:

1. (-) denotes net imports

Source: IBEA, MAFF

7.1.3. France

Key milk and milk product supply balance information are presented in Table 7.3. The main features include the following:

- milk output in France has been relatively stable since 1992, fluctuating annually by no more than 1.1%;
- of the 25 million tonnes of milk produced, only 4 million tonnes (16%) was supplied as liquid milk to consumers in 1997. This proportion of use as liquid milk has been fairly stable since 1992;
- cheese accounts for the largest use of milk (in whole milk equivalent terms) and French cheese production has expanded significantly since 1992 (by 10%). France is the largest EU cheese producer (1.68 million tonnes);
- production of fresh milk products has increased by 17% since 1992;
- butter output has been stable, while milk powder production has increased over the 1993-97 period;
- France is a large net surplus producer of milk (in whole milk equivalent terms), and the largest net surplus producer in the EU. Nevertheless, intervention stocks of SMP and butter stocks are at present very low;

- France is the main net exporter of dairy products in the EU. Its most important milk product for export (in milk equivalent terms) is cheese followed by milk powder;
- the only milk product of which France is a net importer is butter for which the level of imports has nearly doubled between 1992 and 1997.

Table 7.3: Milk supply and usage in France

	'000 tonnes					
	1992	1993	1994	1995	1996	1997
Milk output	25,315	25,048	25,322	25,413	25,084	24,957
Production of main milk products						
Liquid milk	3,932	4,003	4,025	3,957	3,935	4,001
Fresh milk products (cream, fermented etc)	1,611	1,662	1,728	1,777	1,820	1,888
Butter (includes butteroil)	460	445	444	464	469	467
Milk powder	678	666	694	732	773	793
Cheese	1,519	1,558	1,594	1,628	1,644	1,676
Intervention stocks						
Butter	5	3	0	0	0	0
SMP	37	37	0	0	19	8
Net Exports¹						
Liquid milk	+313	+407	+484	+251	+303	+218
Butter	-30	-30	-56	-47	-22	-53
Milk powder	+265	+226	+287	+297	+279	+347
Cheese	+266	+288	+313	+316	+323	+318

Notes.

1. (-) denotes net imports

Source: SCEES, Onilait, Douanes

7.1.4. Germany

Table 7.4 shows the main features of the milk and milk product supply balance for Germany between 1992 and 1997. Key points to note include:

- Germany is the largest milk producer in the EU. Annual milk output in Germany has been stable at about 28.7 million tonnes between 1995 and 1997;
- only 5.5 million tonnes (19%) was supplied as liquid milk to consumers in 1997;
- cheese accounts for the largest use of milk (in whole milk equivalent terms) in Germany, with total production having increased by 23% since 1992. Germany is now the second largest EU cheese producer;
- there has been a steady increase in the production of fresh milk products such as cream and fermented milk products (eg, yoghurt) since 1992;
- butter output has remained relatively stable between 1992 and 1996, but declined by 8% in 1997. The other milk product for which production has declined in recent years is milk powder;
- Germany is a small net surplus producer of milk (in whole milk equivalent terms), with a self-sufficiency ratio of 102%. There are currently no butter intervention stocks in Germany and end-season SMP stocks are at relatively low levels;
- Germany imports a small but increasing quantity of butter, exports small quantities of cheese and a significant amount of milk powder and liquid milk.

Table 7.4: Milk supply and usage in Germany

	'000 tonnes					
	1992	1993	1994	1995	1996	1997
Milk output	27,979	28,098	27,866	28,621	28,776	28,700
Production of main milk products						
Liquid milk	5,242	5,255	5,437	5,603	5,613	5,503
Cream	584	597	615	633	663	667
Fermented milk products	1,940	1,841	1,930	2,016	2,151	2,305
Butter (includes butteroil)	474	482	461	486	480	442
Milk powder	615	633	577	620	597	536
Cheese	1,293	1,336	1,398	1,453	1,530	1,591
Intervention stocks						
Butter	31	27	6	0	0	0
SMP	13	9	3	0	21	19
Net Exports¹						
Liquid milk	+287	+417	+488	+528	+660	+730
Cream	+19	+28	+24	+25	+32	+32
Butter	-67	-55	-76	-120	-90	-109
Milk powder	+521	+465	+322	+373	+375	+282
Cheese	-102	-19	-16	-72	-5	+34

Notes:

1. (-) denotes net imports

Source: ZMP, Eurostat

7.1.5. Other Member States

An overview of the supply balances of milk and milk products in Spain, Sweden and Finland is presented in Table 7.5. The main features include:

- stable production;
- the most important product in Spain is liquid milk for direct human consumption, accounting for 60% of total milk output in 1997. In Sweden and Finland, liquid milk output represents about 30% of total milk produced. Between 1992 and 1996, liquid milk production declined in Sweden and Finland, but increased in Spain;
- cheese and butter each account for the largest use of milk (in whole milk equivalent terms) in Sweden and Finland. Cheese production has also increased slightly in Sweden and Finland, but has fallen in Spain between 1992 and 1996. In contrast, butter output has declined in Sweden and Spain;
- in all three Member States, and in particular Spain, production of fermented milk products such as yoghurt has increased;
- milk output virtually balances with domestic usage in the three countries. Spain and Sweden are marginally below self-sufficiency, and are small net importers (in whole milk equivalent terms). In both these countries, net imports are accounted for by cheese. Finland has a higher level of self-sufficiency and is a small net exporter of cheese, milk powder and butter.

Table 7.5: Milk supply and usage

	'000 tonnes					
	Sweden		Finland		Spain	
	1992	1996	1992	1996	1992	1996
Milk output	3,201	3,316	2,471	2,431	6,143	6,038
Production of main milk products						
Liquid milk sold onto domestic market	1,086	1,059	815	767	3,465	3,706

Fermented milk products	241	251	184	200	307	430
Butter (includes butteroil)	61	56	47	47	29	23
Milk powder	39	40	18	17	46	26
Cheese	117	127	89	95	245	225
Intervention stocks						
Butter	-	0	0	0	35	3
SMP	-	5	0	0	1	0
Net Exports¹						
Butter	n/a	14	n/a	21	22	19
Milk powder	n/a	4	n/a	6	17	-15
Cheese	n/a	-21	n/a	18	-26	-36

Notes:

n/a = not available; (-) denotes net imports

Source: Eurostat, NDC, CIDIL, National Statistics

7.2. EU school milk scheme usage: comparison with milk product consumption in general

7.2.1. EU level

a) *Total whole milk equivalent.* Table 7.6 details the total volumes of milk supplied under the school milk scheme (in whole milk equivalent terms) by Member State. It shows this as a percentage of total whole milk delivered to dairies (total milk output less on-farm use) and ranks the Member States by volume of school milk supplied under the scheme.

Table 7.6: Total products (whole milk equivalent) usage for school milk by Member State

Member State and position	Volumes supplied under scheme		Volume of milk delivered to dairies ¹ for use on markets		
	1996/97 (tonnes)	% of total school milk	1996 (tonnes)	% of total and position	% school milk of total milk delivered
1. France	93,520	24.9%	23,075,000	20.3% [2]	0.4%
2. Germany	85,730	22.8%	27,180,000	24.0% [1]	0.3%
3. UK	46,718	12.4%	14,058,000	12.4% [3]	0.3%
4. Sweden	34,165	9.1%	3,258,000	2.9% [9]	1.0%
5. Spain	32,589	8.7%	5,409,000	4.8% [6]	0.6%
6. Finland	22,118	5.9%	2,329,000	2.1% [12]	0.9%
7. Denmark	12,663	3.4%	4,495,000	4.0% [8]	0.3%
8. Italy	11,630	3.1%	10,040,000	8.9% [5]	0.1%
9. Netherlands	9,384	2.5%	10,535,000	9.3% [4]	0.1%
10. Belgium	8,578	2.3%	3,023,000	2.7% [10]	0.3%
11. Portugal	8,197	2.2%	1,578,000	1.4% [13]	0.5%
12. Ireland	5,382	1.4%	5,297,000	4.7% [7]	0.1%
13. Austria	4,433	1.2%	2,346,000	2.1% [11]	0.2%
14. Luxembourg	241	0.1%	257,000	0.2% [15]	0.1%
Greece	n/a	n/a	520,000	0.5% [14]	n/a
Total EU	375,348		113,400,000		0.3%

Notes:

1. Delivered to dairies equals total milk production less on farm use

Source: EU Commission, Eurostat, National Statistics

For the EU-15 as a whole, volumes supplied under the school milk scheme (whole milk equivalent) accounts for only 0.3% of total milk supply (by dairy farmers to dairies). The country where the proportion is highest is Sweden (1%), while in several countries, such as Italy and the Netherlands, it represents only 0.1% of milk supplied to dairies.

Although France supplies the largest volume of school milk (just under a quarter of the EU total) and accounts for the largest share of total EU school milk used, Sweden supplies the most as a percentage of total national milk deliveries. Finland supplies the second highest volume of school milk as a percentage of total milk deliveries, although Finland is ranked 12th in terms of the proportion of total EU milk deliveries accounted for by school milk. Germany has the largest EU milk market, accounting for almost a quarter of total EU milk deliveries, but is the second highest user of school milk. In terms of volume, however, this accounts for only 0.3% of total German milk deliveries. The UK accounts for the third largest volume of school milk and is also ranked third in terms of the proportion of total milk deliveries that are accounted for by school milk. In contrast, the Netherlands is ranked ninth in terms of volume of school milk distributed, but fourth in terms of total deliveries. Broadly, there is a rough correlation between ranking in terms of total milk deliveries and ranking in terms of volumes of school milk.

b) *Whole milk.* Table 7.7 shows the volumes of whole milk distributed under the school milk scheme and compares this with total domestic consumption of whole milk.

Table 7.7: Whole milk usage for school milk by Member State

Member State	Volumes supplied under scheme (including whole milk yoghurt)		Volume of whole milk consumed domestically		
	1996/97 (tonnes)	% of total school whole milk	1996 (tonnes)	% of total and position	school milk as % of total whole milk consumed
1. Germany	84,878	40.6%	3,323,000	36.1% [1]	2.6%
2. UK	45,636	21.8%	2,554,000	27.2% [2]	1.8%
3. France	21,218	10.1%	970,000	10.3% [3]	2.2%
4. Spain	17,484	8.4%	162,000	1.7% [8=]	10.8%
5. Sweden	11,311	5.4%	395,000	4.2% [7]	2.9%
6. Belgium	5,626	2.7%	580,000	6.2% [4]	1.0%
7. Ireland	5,310	2.5%	459,000	4.9% [5]	1.2%
8. Austria	4,433	2.1%	n/a	n/a	n/a
9. Denmark	4,341	2.1%	142,000	1.5% [10]	3.1%
10. Netherlands	4,308	2.1%	162,000	1.7% [8=]	2.7%
11. Italy	3,231	1.5%	n/a	n/a	n/a
12. Finland	1,126	0.5%	116,000	1.2% [11]	1.0%
13. Luxembourg	241	0.1%	n/a	n/a	n/a
Greece	n/a	n/a	454,000	4.8% [6]	n/a
Portugal	0	0%	n/a	n/a	n/a
Total	209,143		9,317,000		2.2%*

Notes: * EU-11 only (excludes Italy, Austria, Portugal and Luxembourg)

Source: EU Commission, IDF, National Statistics

For the EU, whole milk supplied under the school milk scheme accounts for 2.2% of whole milk consumed domestically. Though this is a very small proportion of total use, it is significantly higher than total school milk volumes as a proportion of total milk delivered to dairies. The Member State with the highest proportion of whole milk usage accounted for by school milk is Spain (11%), whilst in Finland and Belgium, it represents only 1% of milk supplied to dairies.

There is a close correlation (Spain excepted) between the ranking of Member States by whole milk volume supplied under the school milk scheme and total whole milk consumption. Germany, UK and France are ranked first, second and third respectively under both classifications. In contrast, Spain is ranked fourth in terms of whole school milk volumes, but only eighth equal in terms of total whole milk market.

c) *Semi-skimmed milk.* Table 7.8 shows the volumes of semi-skimmed milk distributed under the school milk scheme and compares this with total domestic consumption of semi-skimmed milk.

Table 7.8: Semi-skimmed milk

Member State	Volumes supplied under scheme		Volume of 'semi-skimmed' milk consumed domestically (between 0.5-2.5% fat)		
	1996/97 (tonnes)	% of total school semi-skimmed milk	1996 (tonnes)	% of total and position	school milk as % of total semi-skimmed milk consumed
1. Sweden	29,518	26.0%	439,000	4.3% [7]	6.7%
2. Finland	28,096	24.8%	486,000	4.8% [6]	5.8%
3. France	15,244	13.4%	3,243,000	31.7% [1]	0.5%
4. Portugal	13,012	11.5%	n/a	n/a	n/a
5. Denmark	10,863	9.6%	297,000	2.9% [8]	4.7%
6. Netherlands	8,057	7.1%	688,000	6.7% [4]	1.2%
7. Belgium	4,684	4.1%	n/a	n/a	n/a
8. UK	1,718	1.5%	2,831,000	27.8% [2]	0.1%
9. Germany	1,352	1.2%	1,542,000	15.1% [3]	0.1%
10. Spain	526	0.5%	559,000	5.2% [5]	0.1%
11. Italy	313	0.3%	n/a	n/a	n/a
Austria	0	0%	n/a	n/a	n/a
Greece	n/a	n/a	25,000	0.2% [10]	n/a
Ireland	0	0%	89,000	0.9% [9]	0%
Luxembourg	0	0%	n/a	n/a	n/a
Total	113,383		10,199,000		1.1%*

Notes: * EU-10 only (excludes Belgium, Italy, Austria, Portugal and Luxembourg)

Source: EU Commission, IDF, National Statistics

At the EU level, semi-skimmed milk supplied under the school milk scheme accounts for 1.1% of total semi-skimmed milk consumption. The country where the share of school milk consumption is highest is Sweden (6.7%), while in the UK, Germany and Spain, it represents only 0.1%.

The UK is ranked second in terms of total size of semi-skimmed milk market, but only eighth in terms of school milk usage of semi-skimmed milk. Sweden accounts for the largest volumes used as school milk (more than a quarter of total EU semi-skimmed school milk supplies), but is ranked only seventh in terms of total semi-skimmed milk market size. Finland ranks second in terms of school milk supply (just under a quarter of total EU semi-skimmed school milk supplies), but sixth in terms of total semi-skimmed milk market. Denmark also ranks higher for semi-skimmed school milk distribution than it does for total semi-skimmed consumption. In contrast to all milk and whole milk there is only limited correlation between the ranking of Member States by semi-skimmed volume supplied under the school milk scheme and level of domestic semi-skimmed milk markets.

d) *Cheese.* The volumes of cheese distributed under the school milk scheme and total domestic consumption of cheese comparisons are presented in Table 7.9.

Table 7.9: Total cheese

Member State	Volumes supplied under scheme		Volume of cheese consumed domestically ²		
	1996/97 (tonnes)	% of total school cheese	1996 (tonnes)	% of total and position	school cheese as % of total cheese consumed
1. France	12,390	72.2%	1,355,000	22.3% [2]	0.9%
2. Spain	2,125	12.4%	275,000	4.5% [5]	0.8%
3. Italy	1,233	7.2%	1,135,000	18.7% [3=]	0.1%
4. Sweden	609	3.5%	143,000	2.4% [9]	0.4%
5. Finland	522	3.0%	82,000	1.3% [12]	0.6%
6. Denmark	213	1.2%	89,000	1.5% [11]	0.2%
7. Ireland	73	0.4%	30,000	0.5% [14]	0.2%
Austria ¹	0	0%	110,000	1.8% [10]	0%
Belgium ¹	0	0%	167,000	2.7% [8]	0%
Germany ¹	0	0%	1,640,000	27.0% [1]	0%
Greece ¹	n/a	n/a	210,000	3.5% [7]	n/a
Netherlands ¹	0	0%	250,000	4.1% [6]	0%
Luxembourg ¹	0	0%	3,000	0.0% [15]	0%
Portugal ¹	0	0%	67,000	1.1% [13]	0%
UK ¹	0	0%	528,000	8.7% [4]	0%
Total	17,165		6,084,000		0.3%

Notes:

1. Cheese not provided under the school milk scheme
2. Includes cheese made from cows milk and other milk

Source: EU Commission, IDF

The EU school milk scheme distribution of cheese accounts for less than 1% of total cheese consumption in any one of the Member States, and 0.3% for the EU as a whole.

Of those Member States that provide cheese under the school milk scheme, France provides by far the most, accounting for just under three quarters of the total supplied. France also has the largest domestic market (of those Member States supplying cheese under the scheme). Spain is ranked second in terms of the school milk scheme supply of cheese, but only fifth with respect to total cheese consumption. Sweden and Finland are ranked fourth and fifth respectively in terms of their school milk supply of cheese, but only ninth and twelfth in terms of total domestic consumption.

7.2.2. The UK

Table 7.10 compares the total UK consumption of liquid milk, with volumes of school milk supplied between 1992/93 and 1996/97.

Table 7.10: Liquid milk

Year	Total market consumption ¹ tonnes		School milk volumes - tonnes		% school of market	
	Whole milk	Semi-skimmed	Whole milk (excludes yoghurt)	Semi-skimmed (excludes yoghurt)	Whole milk	Semi-skimmed milk
1992/93		2,343,000	86,300	7,519	2.8%	0.3%
1993/94	,107,000	2,541,000	82,000	7,725	2.9%	0.3%
1994/95	2,805,000	2,707,000	73,800	7,910	2.7%	0.3%
1995/96	2,725,000	2,831,000	61,400	6,461	2.4%	0.2%
1996/97	2,554,000	2,961,000	43,600	1,718	1.8%	0.1%
% change	-20.9%	+26.4%	-49.5%	-77.2%		

Notes:

1. market figures are annual

Source: NDC and Intervention Board

Total UK whole milk consumption fell by 21% between 1992/93 and 1996/97. Over the same period the volume of whole school milk declined by 49.5%. In contrast, total consumption of semi-skimmed milk increased by 26%. However, volumes of semi-skimmed school milk fell by 77% over this same period.

Whole milk and semi-skimmed milk volumes supplied under the scheme account for 1.8% and 0.1% respectively of total type of milk usage in the UK. Between 1992/93 and 1994/95, the proportion of total usage of whole and semi-skimmed milk accounted for by school milk remained relatively stable at about 2.8% and 0.3% respectively. However, following the UK's withdrawal from the secondary school and preparation in school meal options in 1996/97, the share of total usage fell to 1.8% for whole milk and 0.1% for semi-skimmed.

7.2.3. France

Total French consumption of whole milk declined by 22% between 1992/93 and 1996/97 (table 7.11). Over the same period school milk volumes of whole milk declined by 39%. In contrast, total consumption of semi-skimmed milk increased slightly to 1994/95, but subsequently decreased to a level of 0.3% lower than the 1992/93 consumption level. Over this period, school milk consumption of semi-skimmed milk declined by 59% to 1994/95, but fell only 4% between 1994/95 and 1996/97 (ie, from the time of removal of semi-skimmed yoghurt from the scheme). For cheese, total consumption increased by 4.2% while school milk volumes used declined by 8.3%.

Table 7.11: Liquid milk and cheese

Year	Total market consumption ¹ tonnes			School milk volumes - tonnes			% school of market		
	Whole milk	Semi-skimmed	Cheese	Whole milk ²	Semi-skimmed ³	Cheese	Whole milk	Semi-skimmed	Cheese
1992/93	1,166,000	3,155,000	1,315,000	34,381	36,771	13,376	2.9%	1.2%	1.0%
1993/94	1,108,000	3,168,000	1,321,000	28,572	26,265	13,293	2.6%	0.8%	1.0%
1994/95	1,004,000	3,185,000	1,346,000	23,587	15,759	12,094	2.3%	0.5%	0.9%
1995/96	969,000	3,243,000	1,360,000	22,207	15,656	12,374	2.3%	0.5%	0.9%
1996/97	905,000	3,145,000	1,370,000	20,930	15,141	12,261	2.3%	0.5%	0.9%
% change	-22.4%	-0.3% ⁴	+4.2%	-39.1%	-59% ⁴	-8.3%			

Notes:

1. Market figures are annual

2. Includes whole milk yoghurt

3. Includes semi-skimmed yoghurt up to 1994/1995

4. 1.2% decline on the market for 1994/95 to 1996/97 and 4% fall on school milk volumes over same period (ie, from removal of semi-skimmed yoghurt in scheme)

Source: CNIEL and Onilait

When comparing school milk supplies to market consumption by milk product category, the largest share of total consumption accounted for by school milk is whole milk (2.3% in 1996/97) and the smallest is semi-skimmed milk (0.5% in 1996/97). As indicated above, the percentage of total market accounted for by school milk scheme consumption changed markedly for semi-skimmed milk (declining from 1.2% to 0.5% in four years), but fell less significantly for whole milk (from 2.9% to 2.3%, 1992/93 to 1996/97) and cheese (from 1.0% to 0.9%).

7.2.4. Germany

Table 7.12 summarises total German consumption of liquid milk and cheese and the volumes of school milk products used for 1992/93 to 1996/97.

Table 7.12: Liquid milk

Year	Total market consumption ¹ tonnes		School milk volumes - tonnes		% school of market	
	Whole milk	Semi-skimmed	Whole milk ²	Semi-skimmed ³	Whole milk	Semi-skimmed
1992/93	3,199,000	1,533,000	128,297	4,509	4.0%	0.3%
1993/94	3,242,000	1,596,000	130,908	4,749	4.0%	0.3%
1994/95	3,387,000	1,599,000	96,957	1,661	2.9%	0.1%
1995/96	3,325,000	1,542,000	90,843	1,078	2.7%	0.1%
1996/97	3,193,000	1,514,000	83,831	1,352	2.6%	0.1%
% change	0%	-1.2% ⁴	-34.7%	-70% ⁴		

Notes:

1. Market figures are annual
2. # includes whole milk yoghurt
3. Includes semi-skimmed yoghurt up to 1994/1995
4. 5.3% decline on the market from 1994/95 to 1996/97 and 13.6% fall on school milk volumes over same period (ie, from removal of semi-skimmed yoghurt in scheme)

Source: ZMP, Federal Ministry of Food, Agriculture and Forestry

In Germany, total consumption of whole milk remained unchanged between 1992/93 and 1996/97, while school milk volumes of whole milk declined significantly, by 35% over the same period. In contrast, total consumption of semi-skimmed milk increased slightly to 1994/95 before decreasing to a level in 1996/97 which was 2% lower than the 1992/93 consumption level. Over the same period (to 1994/95) school milk distribution of semi-skimmed milk declined by 70% and a further 19% between 1994/95 and 1996/97 (ie, from the time of removal of semi-skimmed yoghurt).

The product category in which school milk has the highest share of total consumption is whole milk (2.6% in 1996/97) and the product category with the smallest share is semi-skimmed milk (0.1% in 1996/97). The most significant change of note has been the decline in the share of total whole milk consumption accounted for by whole milk (from 4% in 1992/93 to 2.6% in 1996/97).

It is, however, important to note that in Germany, currently only about one third of milk served under the scheme is plain milk (whole or semi-skimmed), the other two thirds being flavoured milk (chocolate milk and milk flavoured with strawberry, vanilla, banana and other fruit). The volume of flavoured milk consumed under the scheme is therefore about 56,000 tonnes, equivalent to 16% of the total German flavoured milk market.

7.2.5. Finland and Sweden

Key Finnish and Swedish milk product consumption figures are presented in Table 7.13. Its main features are:

- between 1995 and 1997 in Sweden, whole milk and cheese consumption fell but semi-skimmed milk consumption rose;
- over the same period the volume of whole milk, semi-skimmed milk and cheese provided under the scheme expanded significantly;
- there was a significant expansion in the volumes supplied under the scheme between 1996 and 1997 in Finland for all product categories;
- when comparing school milk supplies to market consumption by milk product category, the largest percentage share is for semi-skimmed milk in both Sweden (6.8% in 1997) and Finland (4.2% in 1997).

Table 7.13: Liquid milk and cheese

Year	Total market consumption (tonnes)			School milk volumes (tonnes)			% school of market		
	Whole milk ¹	Semi-skimmed	Cheese	Whole milk ²	Semi-skimmed	Cheese	Whole milk	Semi-skimmed	Cheese
Finland									
1996	116,000	486,000	78,000	492	12,266	244	0.4%	2.5%	0.3%
1997	n/a	480,000	73,000	925	20,092	446	-	4.2%	0.6%
Sweden									
1995	407,000	413,000	143,000	9,480	26,730	490.2	2.3%	6.5%	0.3%
1996	395,000	439,000	143,000	10,805	29,551	610.9	2.7%	6.7%	0.4%
1997	380,000	446,000	140,000	10,886	30,402	668.4	2.9%	6.8%	0.5%
% change	-6.6%	+8.0%	-2.1%	+14.8%	+13.7%	+36.4%			

Notes: n/a = not available

1. > 2.5% fat in Finland and > 2% fat in Sweden

2. Includes whole milk yoghurt

Source: IDF, Swedish dairy Association, Intervention Agencies in Finland and Sweden

7.2.6. Spain

Table 7.14 shows total Spanish consumption of liquid milk and cheese, and the volumes of school milk products for 1992/93 to 1996/97.

Table 7.14: Liquid milk and cheese

Year	Total market consumption (tonnes) ¹		School milk volumes (tonnes)		School milk as % of total market	
	Total milk ³	Cheese	Total milk ²	Cheese	Total milk	Cheese
1992/93	4,275,000	272,000	54,734	2,355	1.3%	0.9%
1993/94	4,450,000	275,000	51,423	4,920	1.2%	1.8%
1994/95	4,505,000	276,000	23,528	2,414	0.5%	0.9%
1995/96	4,540,000	272,000	19,760	2,140	0.4%	0.8%
1996/97	3,966,000	275,000	18,010	2,125	0.5%	0.8%
% change	-7.2% ⁴	+1.1%	-76.1% ⁴	-9.8%		

Notes:

1. Market figures are annual

2. Includes whole milk yoghurt and semi-skimmed milk yoghurt up to 1994/95

3. Includes whole, semi-skimmed and skimmed milk

4. 12% decline on the market for 1994/95 to 1996/97 and 23% fall on school milk volumes over same period (ie, from removal of semi-skimmed yoghurt in scheme)

Sources: IDF, EU Commission

Key points to note are:

- total Spanish milk consumption fell by 7.2% between 1992/93 and 1996/97. Over the same period the volume of school milk supplied declined by 67.1%;
- total cheese consumption increased by 1.1%, whilst the volume of cheese supplied under the school milk scheme declined by 9.8%;
- a comparison of school milk supplies to market consumption by milk product category shows that school milk scheme cheese accounts for the largest share of any product sectors overall market in 1996/97 (0.8%) whilst the smallest share was for liquid milk (0.5%);
- the proportion of the total milk market accounted for by scheme consumption declined by more than half over the period, while the proportion of the total cheese market accounted for by the scheme declined only marginally.

7.3. Summary table

Table 7.15: Summary of key findings

Elements	EU	UK	France	Germany	Sweden and Finland	Spain
Features of and developments in the milk market	<ul style="list-style-type: none"> Butter and cheese are the principal products produced in milk equivalent terms. The manufacture of cheese and fermented milk products has increased since 1992. Production and domestic consumption have developed relatively closely but large surpluses (9-9.5 million tonnes whole milk equivalent) remain. 	<ul style="list-style-type: none"> Half the milk output is supplied as liquid milk. Liquid milk supplies have fallen while cheese and fermented milk products production has risen significantly. The UK has a structural deficit in milk and imports important volumes of cheese and butter. 	<ul style="list-style-type: none"> France is the largest cheese producer and cheese absorbs the largest percentage of French milk output. Cheese and fresh milk product output has expanded. France continues to be the largest EU net surplus producer of milk products, mainly cheese. Exports of cheese have been rising. 	<ul style="list-style-type: none"> Germany has the largest milk output. Cheese accounts for the largest use of milk. Production of cheese and fermented milk products rose rapidly, and that of liquid milk marginally. Germany continues to be a small net surplus producer. Exports of liquid milk have been rising and milk powder falling. 	<ul style="list-style-type: none"> Cheese and butter production account for the largest use of milk. Cheese and fermented milk products production has risen while liquid milk has declined. Sweden is a small net importer in whole milk terms and Finland a small net exporter (cheese and butter). 	<ul style="list-style-type: none"> 60% of the milk output is supplied as liquid milk. Production of liquid milk and fermented milk products expanded while cheese production declined. Spain went from being a small net exporter to a small net importer in whole milk equivalent terms.
Scheme product volumes versus market product consumption	<ul style="list-style-type: none"> The volume of milk supplied under the EU school milk scheme accounts for 0.3% of total milk delivered to dairies in the EU. Supplies of whole milk, semi-skimmed milk and cheese represent 2.2%, 1.1% and 0.3% respectively of consumption of these products in the EU in 1996/97. The use of whole milk under the scheme was generally well correlated in ranking terms with domestic use. Only 7 member states provide cheese under the scheme and of these only France and Italy have high domestic consumption. 	<ul style="list-style-type: none"> The UK is the third largest provider in whole milk equivalent terms under the scheme. School milk accounts for 0.3% of total milk delivered. Whole milk and semi-skimmed milk volumes under the scheme in 1996/97 accounted for 1.8% and 0.1% of domestic market, respectively. Proportions declined sharply from 1992/93 levels of 2.8% for whole milk and 0.3% for semi-skimmed milk. 	<ul style="list-style-type: none"> France is the largest provider in whole milk equivalent terms under the scheme. School milk accounts for 0.4% of total milk delivered. France accounts for 72% of the cheese supplied under the scheme. Whole milk, semi-skimmed milk and cheese volumes under the scheme in 1996/97 accounted for 2.3%, 0.5% and 0.9% respectively of the domestic market. Proportions for whole and semi-skimmed milk declined sharply from 1992/93 levels of 2.9% and 1.2%. 	<ul style="list-style-type: none"> Germany is the second largest provider in whole milk equivalent terms under the scheme. School milk accounts for 0.3% of total milk delivered. Germany accounts for 41% of whole milk supplied under the scheme. Whole milk and semi-skimmed milk volumes under the scheme in 1996/97 accounted for 2.6% and 0.1% of the domestic market, respectively. Proportions for whole and semi-skimmed milk declined sharply from 1992/93 levels of 4.0% and 0.3%. 	<ul style="list-style-type: none"> Sweden and Finland are important providers under the scheme relative to their total milk delivered volumes. They account for half the distribution of semi-skimmed milk under the scheme but only 13% of total EU consumption. Semi-skimmed milk volumes under the scheme in 1997 accounted for 6.8% and 4.2% of domestic market supplies in Sweden and Finland, respectively. Levels are much lower for whole milk and cheese. 	<ul style="list-style-type: none"> Spain is the fourth largest whole milk provider and second largest cheese provider under the scheme. Whole milk, semi-skimmed milk and cheese volumes under the scheme in 1996/97 accounted for 10.8%, 0.1% and 0.8% of domestic market, respectively. The proportion of whole and semi-skimmed supplied declined sharply from 1992/93 levels.

7.4. 'Policy on' versus 'policy off' analysis

In order to provide some assessment of the contribution of the scheme towards overall consumption, this sub-section provides brief examinations of the following:

- a) comparisons between Member States operating different elements of the scheme;
- b) comparisons within Member States when an element of the scheme operated and when it did not.

The reader should note that the comparisons made are limited to those proposed in the contractor's proposal and accepted at the time the evaluation contract was signed.

7.4.1. Comparisons between Member States operating different scheme elements

a) Secondary school element: the UK versus other countries examined

The UK is the only Member State to have opted out of the secondary school element of the scheme (since the Summer of 1996, ie, at the end of the 1995/96 school milk year). Table 7.16 compares whole milk and semi-skimmed milk volumes supplied under the scheme in 1996/97 (the first full year out of the secondary element) to that in 1994/95 (the last full year with the secondary school element), for the UK and other Member States. Key points to note are:

- total volumes supplied under the scheme in the UK (in whole milk equivalent) declined by 42%. In the other countries operating the secondary school element scheme consumption also declined, but at a much less significant level (eg, 13.3% in Germany or in the case of France, there was negligible change);
- whole milk supply under the scheme in the UK fell by 39% between 1994/95 and 1996/97 compared to an average of 14% across Germany, France and Spain;
- there was a 78% decline in the supply of semi-skimmed milk under the scheme in the UK between 1994/95 and 1996/97. The respective declines in Germany and France were 19% and 4% only.

Table 7.16: Changes in school milk usage 1994/95 to 1996/97: selected Member States

Volumes supplied: tonnes	1994/95	1995/96	1996/97	% change over period ¹
UK				
Whole milk	75,281	63,568	45,636	-39.4
Semi-skimmed	7,910	6,461	1,718	-78.3
Total milk equivalent	80,274	65,669	46,718	-41.8
Germany				
Whole milk	96,957	90,843	83,831	-13.5
Semi-skimmed	1,661	1,078	1,352	-18.6
Total milk equivalent	98,666	91,962	85,540	-13.3
France				
Whole milk	23,587	22,207	20,930	-11.3
Semi-skimmed	15,759	15,656	15,141	-3.9
Total milk equivalent	93,690	94,288	93,520	-0.2
Spain				
Whole milk	21,067	19,176	17,484	-17.0
Semi-skimmed	2,461	584	526	-78.6
Total milk equivalent	39,451	34,595	32,589	-17.4

Notes:

1. except Sweden = 1996/97 on 1995/96

Source: CEAS Consultants, derived from national sources of data

The opting out of the secondary school element of the scheme by the UK also led to the price of milk sold to pupils in UK secondary schools rising by about 50% (5-6 pence per 1/3 litre carton) once the subsidy was no longer available. This was a price increase of slightly more than the level of subsidy (about 4 pence per carton). Estimates of the impact of the withdrawal of this option within the scheme on secondary school milk consumption in the UK suggest that consumption fell by 20%. (qualitatively attributed to the withdrawal of subsidy by some representatives of managing agents and scheme administrators interviewed during the research). Data inadequacies mean that this cannot be empirically tested and causality fully attributed to the scheme.

Overall, the comparison findings show that UK secondary school milk consumption fell by about 20% after withdrawal from this element of the scheme and the significantly higher decline in volumes supplied within the scheme in the UK relative to declines in Germany and France suggest that the EU scheme has made a positive contribution to increasing milk consumption levels amongst school children whilst they are at school. However, in terms of the total UK market for whole milk and semi-skimmed milk the post secondary school opt out changes are very small relative to total UK consumption (total scheme consumption accounting for only 7.8% and 0.1% respectively of total UK consumption of whole and semi-skimmed milk respectively). This suggests that the overall scheme effectiveness in meeting its primary objective has been limited.

b) Cheese option: not in Germany and the UK compared to other Member States operating it

The UK and Germany both opted out of the cheese element of the scheme, the UK in the 1993/94 school year and Germany in the 1994/95 school year. Table 7.17 compares total milk (as whole milk equivalent) volumes supplied under the scheme in the UK and Germany (opted out) with Spain and France (opted in):

The key features include the following:

- the volume of cheese supplied in the UK under the scheme prior to withdrawal from this element of the scheme was about 30% of total whole milk equivalent supplied under the scheme. This suggests that almost all of the decline in school milk use between 1992/93 and 1993/94 in the UK was probably attributed to withdrawal of the cheese element of the scheme. The volume supplied within the scheme in Germany prior to withdrawal in 1994/95 was however negligible and hence the impact of the scheme on consumption was probably negligible;
- over the period 1992/93 to 1994/95²⁰, cheese consumption via the scheme in the two 'opt-in' countries of France and Spain showed opposite trends, with consumption declining in France and consumption increasing in Spain. This suggests that factors other than the scheme were playing more prominent roles in influencing take-up of cheese within the scheme.

Table 7.17: Changes in total school milk usage and the cheese category: selected countries 1992/93 to 1996/97

Volumes supplied: tonnes	1992/93	1993/94	1994/95	1995/96	1996/97	% ch 94/95 on 92/93	% ch 96/97 on 93/94
UK							
Cheese	3,770	0	0	0	0	n/a	n/a
Total milk equivalent	121,712	89,839	80,274	n/a	n/a	-34.0	n/a
Germany							
Cheese	120	463	0	0	0	n/a	n/a
Total milk equivalent	133,300	137,300	98,666	91,962	85,540	-26.0	-37.7
France							
Cheese	13,376	13,293	12,094	12,374	12,261	-9.6	-7.8
Total milk equivalent	149,664	138,334	93,690	94,288	93,520	-37.4	-32.4
Spain							
Cheese	2,355	4,920	2,414	2,140	2,125	2.5	-56.8
Total milk equivalent	70,391	75,442	39,451	34,595	32,589	-44.0	-56.8

Notes: n/a = not applicable

Source: CEAS Consultants derived from national sources of data

7.4.2. Comparisons within Member States: before and after changes

a) Cheese option: cheese consumption in the UK and Germany

Trend comparisons presented in Table 7.18 show that total cheese consumption per capita in the UK and Germany increased in the post opt-out period (there is insufficient disaggregation of data to allow us to identify cheese consumption trends amongst school age children). This represents an opposite trend to consumption levels within the scheme and suggests that it is unlikely that the opt-out of cheese in the school milk scheme would have had any significant impact on cheese consumption (ie, possibility that the increase in consumption might have been higher if the opt-in had remained) because in both countries the level of scheme cheese consumption when 'opted in' was extremely low. Additionally, it is not possible to examine the level of cheese still consumed at schools, in meals by children post opt out (ie, to isolate possible scheme impact) because no surveys and data have been collected that would allow such a comparison to be made.

²⁰ 1994/95 was chosen as the comparative year for the UK so as to minimise the possible impact of opting out of the secondary school element.

Table 7.18: Changes in underlying cheese consumption (under school milk scheme) in Germany and the UK 1990/91 to 1995/96

Volumes supplied: tonnes	1990/91 ¹	1991/92	1992/93	1993/94	1994/95	1995/96	% ch 96 on 91
UK							
Cheese under school scheme	4,236	4,543	3,770	0	0	0	n/a
% change year on year	n/a	7	-17	-100	n/a	n/a	n/a
Per head cheese consumption on market	8.5	8.9	8.3	8.4	8.8	9.0	5.9
% change year on year	n/a	5	-7	1	5	2	n/a
Germany							
Cheese under school scheme	94	110	120	463	0	0	n/a
% change year on year	n/a	17	9	286	n/a	n/a	n/a
Per head cheese consumption on market	17.5	18.2	18.5	19.1	19.4	20.1	14.9
% change year on year	n/a	4	2	3	2	4	n/a

Notes:

1. calendar years for cheese on market ie, 1991 instead of 1990/91

n/a = not applicable

Source: CEAS Consultants derived from national sources of data

b) All Member States: scheme changes 1992/93 to 1994/95

The school milk measure was substantially amended under Regulation 3392/93, with the amendments coming into full effect from the 1994/95 school year. The main changes affecting the measure were the:

- removal of butter milk as a product available under the scheme;
- removal of semi-skimmed milk yoghurt as a product available under the scheme;
- the option for each Member State to opt out of the cheese and secondary school elements of the scheme;
- the need to provide concise arguments for the maintenance of 'use in the preparation of school meals' element of the scheme.

The subsidy level was also reduced from 125% of the target price to 95% of the target price as from October 1993.

These amendments probably had a significant effect on the up-take of school milk across the EU and in each Member State, given that milk supplied (in whole milk equivalent terms) fell by 32% between 1992/93 and 1994/95 across the EU-12 (Table 7.19).

However, the precise impact of these changes on total consumption of milk and milk products (ie, we are not aware of any surveys or data collection having been undertaken to examine this) by children at school is more difficult to estimate because of the lack of data about changes in the total volume of milk and milk products supplied to children at school, or whether the previously subsidised products (such as semi-skimmed yoghurt) were replaced by unsubsidised products.

Nevertheless, given that the proportion of total milk consumption accounted for by the school milk scheme has been very small (equivalent to 0.3% of total milk delivered to dairies in the EU in 1996/97), the impact of the changes on consumption of milk and milk products on the market as whole is likely to have been very small.

Table 7.19: Changes in volumes supplied under the school milk measure 1992/93 to 1994/95 (whole milk equivalent)

Volumes supplied: '000 tonnes	1992/93	1993/94	1994/95	% ch 94/95 on 92/93
EU-12	553.5	501.3	377.0	-31.9
UK	121.7	89.8	80.3	-34.0
France	149.7	138.3	93.7	-37.4
Germany	133.3	137.3	98.7	-28.1
Spain	70.4	75.4	39.5	-43.9

Source: CEAS Consultants derived from national sources of data

8. Main factors influencing milk consumption levels

This section examines the role of price and other factors of influence on milk and milk product consumption in the EU through detailed examination of information in the three Member State case study countries of the UK, France and Germany (as proposed in the contractor's original proposal and accepted at the time the evaluation contract was signed).

8.1. Price of milk and its impact on milk consumption

8.1.1. The UK

The nominal retail price of milk has fallen by 16% between 1991 and 1996 from 29.7 pence per 567ml in 1991 to 25 pence per 567ml in 1996 (although since 1994 there has been an increase in the price from 23.5 pence per 567ml).

Table 8.1 shows the quantity of liquid milk purchased from 1991 to 1996 in England and Wales.

Table 8.1: Liquid milk market (million litres) – England and Wales

Calendar Year	Total liquid milk purchases	Total Household purchases
1991	5,752	4,926
1992	5,739	4,873
1993	5,719	4,812
1994	5,680	4,740
1995	5,568	4,633
1996	5,532	4,588

Source: MMD Ltd

During this period total liquid milk purchases declined by 3.8% (Table 8.1). Over the same period the total volume of household purchases declined by 6.9%. Both these categories of purchase declined between 1991 and 1996, even though nominal and real retail milk prices fell. This suggests that factors other than price have played a more important role in influencing household purchasing decisions for milk. Factors other than price considered to be important include the size of the child population, advertising expenditure and the proportion of milk delivered to doorsteps. Analysis of various UK surveys suggests that the most important factors influencing milk sales are the level of child population and the proportion of milk delivery to households (Table 8.2).

Table 8.2: Major factors affecting the demand for liquid milk (estimated impact of a 10% change (increase) in the following factors)

	% Change in milk sales
Real milk price	-2.0
Child population	+5.0
Advertising	+0.2
Doorstep proportion	+2.5

Source: MMD Ltd

According to the National Dairy Council, the majority of liquid milk consumed in the UK is in combination with other products with only 12% of milk consumed being drunk on its own. The most popular way of consuming milk is with cereal (25%), closely followed by milk consumed in tea (24%).

The proportion of milk consumed with cereal increased by 3% between 1993 and 1994, while the proportion consumed on its own fell by 2% over the same period.

The way in which milk is consumed is important when considering the impact of price on consumption. Price appears to have very little influence over consumption of milk when it is consumed with something. For example, consumers do not tend to reduce their consumption of milk in coffee if milk prices increase. The responsiveness of UK demand to changes in the price of liquid milk (price elasticity of demand) is consequently very limited (inelastic) as the majority of milk purchased is for use with other products.

8.1.2. France

a) Liquid milk

After having remained relatively stable between 1992 and 1995, the nominal price for liquid milk as a whole and UHT semi-skimmed rose between 1995 and 1997 (Table 8.3). The only milk type for which prices fell in nominal terms between 1992 and 1997 was for pasteurised whole milk with most of the decline occurring between 1995 and 1997.

Table 8.3: Average liquid milk prices 1992-97 (francs/litre)

	1992	1993	1994	1995	1997	change 97 on 92
Pasteurised whole milk	5.37	5.48	5.53	5.51	5.31	-1.1%
UHT semi-skimmed milk	3.31	3.31	3.30	3.32	3.61	+9.1%
Total milk	3.57	3.57	3.55	3.56	3.67	+2.8%

Source: Cidil/Secodip

Table 8.4 shows the volume of French household milk purchases between 1993 and 1997. Drawing any meaningful conclusions from this data is, however, difficult due to a change in the method used for calculating liquid milk purchases by households, introduced in 1995.

Table 8.4: Household purchases of milk (million litres)

	1993	1994	1994 ¹	1995 ¹	1995 ²	1996	1997
Fresh pasteurised whole	155	132	131	122	93	83	88
Long life (UHT)	2,796	2,806	2,657	2,709	2,559	2,607	2,653
of which UHT semi-skimmed	2,322	2,333	2,208	2,269	2,133	2,103	2,149
Total milk	3,154	3,129	2,971	3,000	2,682	2,734	2,787

Notes:

1. New calculation method
2. New calculation method using scanning results from 1995

Source: Cedil/Secodip

The data in Table 8.4 does show that household milk consumption as a whole and of UHT semi-skimmed milk in particular has increased between 1995 and 1997, despite a rise in the nominal price of these products. Purchases of fresh pasteurised whole milk fell between 1995 and 1997, despite a fall in nominal prices over the period. As in the UK, factors other than price appear to be more important in influencing household liquid milk purchasing decisions.

b) Cheese

French consumption of cheese (in all product categories) expanded between 1993 and 1997 (Table 8.5). As with liquid milk, these changes occurred during a period when nominal cheese prices

increased (with the exception of fresh cheese:Table 8.6) and hence suggest that factors other than price play a significant role in influencing purchasing decisions.

Table 8.5: Household purchases of cheese in France 1993-97 (thousand tonnes)

	1993	1994	1995	1996	1997	change 97 on 93
Fresh cheese	422	427	429	437	440	+4.3%
Fromage à pate mole et pate persillée	440	438	444	448	452	+2.7%
Fromage à pate pressée	453	456	473	475	478	+5.5%
Processed cheese	63	63	64	64	66	+4.8%

Source: Cniel

Table 8.6: Cheese price index: France 1993-97

1990 = 100	1993	1994	1995	1996	1997
Fresh cheese	101.3	99.9	99.6	100.2	100.5
Fromage à pate mole et pate persillée	103.5	103	102.3	103.4	104.5
Fromage à pate pressée	103.1	103.7	104.1	104.7	105.4
Processed cheese	105.9	105.8	105.5	108	109.6

Source: Cniel/Insee

c) Uses of liquid milk in France

Table 8.7 summarises the main ways in which liquid milk is consumed in France. This highlights a similar feature to the UK in that the majority (70%) of liquid milk in France is consumed as part of a hot drink, usually either coffee or cocoa. The next most significant ways of consuming liquid milk are cold with cereals (14%) and cold as a drink (9%). It is therefore likely that liquid milk consumption is not very sensitive to changes in price.

Table 8.7: Ways of consuming milk in France (1994)

	%
Hot milk	70
Plain	20
Hot drinks with a lot of milk	33
Hot drinks with little milk	17
Cold milk	13
Plain	9
Flavoured	4
Milk with cereals	14
Food cooked in milk	3
Total milk	100

Source: Baromètre Cidil 1994

8.1.3. Germany

The per capita consumption of liquid milk in Germany decreased by 10% between 1992 and 1997, from 71.7 kg to 64.5 kg per capita (Table 8.8). The largest decline has been in the consumption of whole milk, which fell by nearly 12% over this period. This decline in milk consumption has occurred despite decreases in liquid milk prices (Table 8.9). As in the UK and France, this points to factors other than price being of major importance to household liquid milk purchasing decisions.

Table 8.8: Per capita consumption of milk between 1992 and 1997 (in kg)

	1992	1995	1996	1997	change 97 on 92
Total liquid milk	71.7	69.0	66.7	64.5	-10.0%
Whole milk	48.1	45.7	44.5	42.5	-11.6%
Semi-skimmed milk	19.8	19.9	19.1	18.6	-6.1%

Source: ZMP

Table 8.9: Retail price of milk between 1992 and 1997 (per litre)

Price in DMk	1992	1993	1994	1995 ¹	1996	1997	change 97 on 92
Whole milk	1.25	1.24	1.23	1.20	1.19	1.18	-5.6%
UHT semi-skimmed milk	1.04	1.04	1.02	0.95	0.91	0.90	-13.5%

Notes:

1. Since 1995 discounts included

Source: Representative surveys of Zentrale Markt- und Preisberichtsstelle mbH, (ZMP)

8.2. Competitiveness of milk versus other drink products

8.2.1. The UK

Table 8.10 compares the prices of various types of milk and soft drinks between 1992 and 1996.

Table 8.10: Milk and competing soft drink prices

Product	Pence per litre				
	1992	1993	1994	1995	1996
Milk					
Liquid milk	56.3	56.7	54.6	54.4	52.9
Low fat milks	54.5	54.4	52.0	52.0	51.5
Soft drinks					
Ready to drink	52.5	49.9	46.5	48.8	52.2
Low calorie ready to drink	50.9	52.8	49.2	48.1	50.6

Source: MAFF National Food Survey

The price per litre of milk has generally been slightly higher than that of competing soft drinks, although by 1996 the price differential had narrowed so that both were similarly priced. Milk retail prices fell by about 5-6% between 1992 and 1996, whilst soft drink prices remained fairly stable, improving the relative price competitive position of milk.

8.2.2. France

Over the 1992-1997 period, the price of liquid milk in France increased by 3.6% compared to a 4.1% increase for the price of soft drinks (Table 8.11). This has increased the competitive position of milk vis-à-vis soft drinks. More specifically, Table 8.12 shows that milk prices, at 3.67 FFrs per litre in 1997 were significantly higher than lemonade prices, but lower than prices of colas.

Table 8.11: Milk and competing soft drink price indices, 1990=100

	1992	1993	1994	1995	1996	1997
Milk	102.3	103.2	104.1	104.6	105.1	106.0
Soft drinks	108.1	109.8	109.3	109.4	110.5	112.5

Source: INSEE

Table 8.12: Milk and soft drink price per litre (FFrs)

	Average liquid milk	Colas	Sodas	Lemonade
1996	3.56	4.16	3.04	1.86
1997	3.67	4.24	3.03	1.88

Source: Cidil, Secodip

8.2.3. Germany

In Germany, milk tends to sell at retail prices that are below the prices of caffeine-based soft drinks and, in the case of UHT semi-skimmed milk, prices are similar to prices for plain mineral water. Only sparkling mineral water has been cheaper per litre than UHT semi-skimmed milk (Table 8.13).

Table 8.13: Milk and competing soft drink prices (DMk per litre)

	1992	1993	1994	1995	1996	1997
Whole milk	1.25	1.24	1.23	1.20	1.19	1.18
UHT semi-skimmed milk	1.04	1.04	1.02	0.95	0.91	0.90
Sparkling mineral water	0.80	0.82	0.82	0.83	0.82	0.81
Plain mineral water	0.90	0.93	0.92	0.93	0.92	0.91
Soft drinks with fruit juice (0.7 litre)	0.97	0.99	0.99	0.99	N/c	N/c
Soft drink with caffeine	1.49	1.53	1.58	1.59	N/c	N/c

Notes: N/c: price estimates no longer carried out

Source: GfK Nürnberg (LEH + AM). Verband Deutscher Mineralbrunnen. Statistisches Bundesamt Wiesbaden. Bundesverband der Deutschen Erfrischungsgetränke-Industrie

Since 1992, the nominal price of milk has fallen whereas prices for most other waters and soft drinks have remained fairly stable or increased (eg, caffeine based soft drink prices increased by nearly 7% between 1992 and 1995). Liquid milk has therefore increased its price competitiveness relative to soft drinks and mineral water.

8.3. Consumer habits and taste for milk and milk products

8.3.1. Milk and milk product consumption trends in the EU

a) Liquid milk

The consumption of liquid milk at the EU level fell by 0.1% between 1994 and 1996 (Table 8.14). Within this, some Member States recorded a decrease in consumption and some recorded an increase. The largest increase was noted in Austria (6%), followed by Denmark (2.4%), Spain (2.5%) and France (0.2%). The largest decrease in consumption was observed in Luxembourg (13.6%) and other decreases were noted in Belgium (5.7%), Finland (3.4%), Germany (0.4%), Greece (2.1% (1994-1995)), Ireland (0.4%), Italy (4.2%), the Netherlands (2.0%), Portugal (0.8%), Sweden (1%) and the UK (2.6%).

Table 8.14: EU consumption of liquid milk (1994-1996)

	Total consumption ('000 tonnes)

EVALUATION OF SCHOOL MILK SCHEME

	1994	1995	1996
Austria	547	578	580
Belgium	668	639	630
Denmark	495	504	507
Finland	789	768	762
France	4,391	4,426	4,400
Germany	5,167	5,286	5,146
Greece	512	501	500
Ireland	544	546	542
Italy	575	580	551
Luxembourg	59	62	51
Netherlands	884	902	868
Portugal	755	722	749
Spain	3,895	3,942	3,991
Sweden	1,067	1,057	1,056
United Kingdom	5,682	5,568	5,532
European Union	26,030	26,087	25,865

Source: IDF, National Statistics

Within liquid milk consumption it should be noted that there is considerable difference between Member States in the fat content of the milk drunk (table 8.15). Over 90% of milk consumed in Greece has a fat content in excess of 2.5%, whereas only 15% of milk consumed in Finland and 19% in Netherlands has more than 2.5% fat. In Sweden and Finland, just over a fifth of milk consumption is of milk with a fat content less than 1%. The majority of consumption in most Member States is of milk with a fat content between 1% and 2.5%.

Table 8.15: Liquid milk consumption by type (1996)

	Milk by fat type ('000t)			Milk fat (%)		
	<1%	1%-2.5%	>2.5%	<0.5%	0.5%-2.5%	>2.5%
Belgium	50	-	580	7.9%	-	92.1%
Denmark	69	297	142	13.6%	58.5%	28.0%
Finland	160	486	116	21.0%	63.8%	15.2%
France	188	3,243	969	4.3%	73.7%	22.0%
Germany	279	1,542	3,325	5.4%	30.0%	64.6%
Greece ¹	23	25	454	4.6%	5.0%	90.4%
Ireland	-	89	459	-	16.2%	83.8%
Netherlands	17	688	162	2.0%	79.4%	18.7%
Spain	758	559	2,674	19.0%	14.0%	67.0%
Sweden ²	221	439	395	20.9%	41.6%	37.4%
United Kingdom	147	2,831	2,554	2.7%	51.2%	46.2%

Notes: Percentages may not add due to rounding

1. 1995

2. <1% fat, 1 to 2% fat, over 2% fat

Source: IDF, National Statistics

b) Cheese

Consumption of cheese in the EU increased by 3.6% between 1994 and 1996 (table 8.16). At the Member State level it increased in most countries notably in Austria (+20.9%), Ireland (+15.4%) and Finland (+10.8%). The only decreases in consumption occurred in Sweden (-3.4%), Denmark (-2.2%) and Spain (-0.4%).

Table 8.16: EU consumption of cheese, 1994-96

	Total consumption (‘000 tonnes)		
	1994	1995	1996
Austria	91	107	110
Belgium	166	168	167
Denmark	91	88	89
Finland	74	78	78
France	1,321	1,346	1,360
Germany	1,565	1,620	1,645
Greece	204	210	210
Ireland	26	28	30
Italy	1,110	1,112	1,135
Netherlands	245	249	250
Portugal	64	67	67
Spain	276	272	275
Sweden	148	143	143
United Kingdom	491	514	528
European Union	5,872	6,003	6,087

Source: IDF

8.3.2. Per capita consumption

a) Liquid milk

The Member State with the highest per capita consumption of liquid milk in the EU is Ireland (Table 8.17). Other Member States with relatively high per capita consumption levels include Finland, Denmark, Sweden and the UK. The lowest levels of per capita consumption are found in Belgium/Luxembourg, Greece, Italy and Germany.

Since 1994 per capita consumption of liquid milk has fallen slightly across the EU. The largest decreases have occurred in Belgium/Luxembourg (-10.1%) and Ireland (-7.5%). Increases in per capita consumption were however recorded in Germany, the UK, Denmark, Portugal and Austria (the latter showing the largest increase of 5.9% between 1994 and 1996).

Table 8.17: Per capita consumption of liquid milk¹ in the EU 1992-96

EU Member State	Kg/head/year				
	1992	1993	1994	1995	1996
Germany	72	70.3	68.3	69.6	67.9
France	78.5	77.6	75.8	76.1	75.4
Italy	60.0	57.6	58.1	61.4	61.4
Netherlands	101.6	96.0	97.9	99.0	99.0
Luxembourg	66.7	67.5	68.6	57.9	57.9
UK	124.3	122.9	122.9	120.6	124.6
Ireland	173.9	171.9	170.5	170.2	169.4
Denmark	125.9	122.1	124.7	124.9	124.1
Greece	57.6	59.6	59.5	60.0	59.0
Spain	109.6	117.6	117.6	117.6	101.7
Portugal	88.8	89.4	89.0	89.0	87.3
Austria	-	-	68.1	71.8	72.1
Finland	-	-	155	150.3	148.8
Sweden	-	-	123.1	121.9	121.7
EU-15	-	-	75.6	75.7	75.1

Notes: 1. Includes flavoured milk

Source: Eurostat, IDF

b) Cheese

France, Germany, Italy and Greece have the highest per capita consumption of cheese in the EU (Table 8.18). The UK and Ireland, in contrast, have amongst the lowest level of cheese consumption in the EU. Nevertheless, most Member States increased their per capita consumption of cheese between 1992 and 1996. It should also be noted that those countries with a lower than average per capita consumption of milk generally have a higher per capita consumption of cheese, and vice versa.

Table 8.18: Per capita consumption of cheese in the EU 1992-96

EU Member State	Kg/head/year				
	1992	1993	1994	1995	1996
Germany	18.2	18.5	19.1	19.4	20.1
France	22.8	22.8	22.8	23.1	23.3
Italy	19.0	19.2	19.4	19.4	19.7
Netherlands	16.2	15.8	15.9	16.1	16.1
Luxembourg	19.2	19.8	19.3	19.2	19.2
UK	8.9	8.3	8.4	8.8	9.0
Ireland	6.5	7.2	7.7	8.1	8.3
Denmark	15.5	15.9	16.3	16.4	16.6
Greece	21.3	22.3	19.2	19.7	20.1
Spain	7.5	8.7	8.7	8.7	8.7
Portugal	6.7	6.7	6.7	6.9	6.9
Austria	11.6	11.9	11.3	13.3	13.7
Finland	14.4	14.1	14.4	15.5	15.7
Sweden	16.7	16.6	16.9	16.9	16.8
EU-15	-	-	15.8	16.1	16.3

Notes: Includes fromage frais

Source: Eurostat, IDF

8.4. Consumer habits and taste for milk and milk products in the UK, France and Germany: summary

Our analysis for this part of the study is summarised in Table 8.19 below. The Table covers the main points raised and results obtained in the UK, France and Germany. Furthermore detailed analysis of consumer habits, purchasing behaviour and taste factors for these three countries is provided in Appendix 2.

Table 8.19: Summary of key section findings

Elements	UK	France	Germany
Consumer habits and tastes for milk and milk products	<ul style="list-style-type: none"> Total milk purchases are declining. There has been a significant shift away from whole milk in favour of semi-skimmed milk. Consumption of more processed products such as dairy desserts and yoghurt is increasing. The vast majority (94%) of teenagers consume at least some milk every day. A third of teenagers fail to consume at least the recommended daily number of servings of dairy products. Milk is most often consumed with cereal amongst teenagers and is a far less popular choice as a drink when compared with soft drinks. Low fat milks (semi-skimmed and skimmed) are increasing their share of total consumption and in 1996 accounted for 60% of total milk purchases (only 40% in 1991). The majority of milk purchased by households (90%) is pasteurised. Plastic containers are the most popular form of packaging, and the most popular volume is 4 pints. Per capita consumption of fruit juices, mineral waters and carbonated drinks is increasing as the consumption of milk falls, but milk consumption per capita remains at twice that of carbonated soft drinks. In 1996, the proportion of total drink consumption at schools accounted for by milk was 17%, 27% for carbonated drinks and 37% for squash. 	<ul style="list-style-type: none"> Consumption of milk is declining, but consumption of dairy products such as yoghurts, dairy desserts and cheese is increasing. Children and the young consume higher than average levels of milk, and adults higher than average levels of cheese. The number of times milk is consumed per week declines with age while the frequency of cheese consumption per week increases with age. Cheese is the most popular dairy product in terms of the numbers consuming at least some (95%), while for milk the figure is 81%. Milk is generally consumed at breakfast time, and cheese at lunch and dinner time. Semi-skimmed milk accounts for nearly ¾ of total milk consumption. There has been a slight increase in semi-skimmed and skimmed milk consumption at the expense of whole milk. UHT accounts for over 80% of total liquid milk purchases. UHT and sterilised milk are increasing market share at the expense of pasteurised milk. Virtually all milk is sold in containers of less than 2 litres, and most containers are carton. Mineral water is the most consumed drink product, followed by liquid milk and carbonated drinks (about ½ of milk level). Share of competing drinks product has been rising. 	<ul style="list-style-type: none"> Consumption of milk is declining, but consumption of dairy products such as yoghurts, dairy desserts and cheese is increasing. Children and the young consume most milk, while people aged 30-40 drink least. Liquid milk is mainly consumed as a drink (either plain or flavoured) at breakfast and supper. Whole milk accounts for 66% of total milk consumption, and semi-skimmed 29% (the remainder is flavoured). There has been a decrease in whole and semi-skimmed milk consumption and a rise in flavoured milk. UHT accounts for over 60% of total liquid milk purchases. UHT has increased market share at the expense of pasteurised milk. Most milk is sold in containers of 1 litre, and most containers are carton. Consumption of mineral water and carbonated soft drinks per capita is far superior to that of liquid milk. In contrast to milk, consumption of carbonated soft drinks, mineral water and fruit juice has been expanding.

8.5. Effectiveness of the impact of the EU School Milk Scheme (price subsidy) on the consumption of milk: assessment of the relative importance of price as a factor affecting consumption

The evidence presented in sub-sections 8.1 to 8.3 shows a number of underlying consistent features and trends across the three Member States examined in detail. This leads the contractors to conclude that these features are probably also reasonably representative of trends across other Member States and therefore can also be representative of features at the EU level.

The most important finding is that price does not appear to be a major factor influencing take-up of milk and milk products by consumers including school children (the reader should note that data relating to consumption of milk products and competing products disaggregated to the specific school age groups that can allow reasonable conclusions to be drawn are not readily available). Evidence to support this conclusion includes:

- the price elasticity of demand for liquid milk has been estimated in the UK to be -0.2 which implies that a 10% decrease in price should have resulted in a 2% increase in consumption. Given that between 1991 and 1996 the price (real and nominal) of liquid milk fell by 16% in the UK, this should (in the absence of other influences on consumption) have resulted in an increase in consumption of 3.2%. As actual total milk purchases over this period fell by 3.8%, this suggests that factors other than price have been far more important in influencing consumption levels than price;
- in France, the nominal price of liquid wholemilk (the main form of liquid milk consumed within the school milk scheme) fell by 1.1% between 1992 and 1997. Over the same period consumption of wholemilk decreased²¹. As in the UK this suggests that factors other than price have been far more important in influencing milk consumption;
- in Germany, the nominal price of liquid milk fell by between 5.6% (wholemilk) and 13.5% (UHT semi-skimmed) between 1992 and 1997. Over the same period consumption of these two categories of milk fell by 11.6% and 6.1% respectively. As in the UK and France this suggests that factors other than price have been far more important in influencing milk consumption;
- in the UK between 1992 and 1997, the price competitive position of liquid milk relative to soft drink has improved (ie, milk prices fell in real and nominal terms whilst soft drink prices were relatively stable), yet over the same period, consumption of liquid milk decreased (see above) whilst consumption of soft drinks increased by 16.4%, 22.5% and 5.9% respectively for fruit juices, soft drinks and mineral water (see Appendix 2 for further details);
- in France over the 1992 to 1997 period the price of liquid milk and soft drinks increased by 3.6% and 4.4% respectively (ie, improving the relative competitive position of milk). During this period, consumption of liquid milk fell whilst consumption of soft drinks increased by 2.4% (see appendix 2 for further details);
- in Germany the price competitive position of liquid milk relative to competing drinks (mineral water, soft drinks and fruit juices) has improved between 1992 and 1997 (ie, milk prices fell in real and nominal terms whilst the prices of other drinks remained fairly stable (or in the case of caffeine-based soft drinks increased by about 7%). However, over the same period, consumption of liquid milk decreased (see above) whilst consumption of alternative (soft) drinks increased by

²¹ Changes in the way in which consumption is calculated, introduced in 1995 mean that it is not possible to provide exact details of the percentage change in consumption except to confirm that consumption fell. For liquid milk in general prices rose by 3.6% whilst total consumption is perceived to have declined marginally.

3.9%, 2.7% and 2.0% respectively for mineral water, carbonated drinks and fruit juices (see Appendix 2 for further details).

Given the above analysis and comparisons of price and consumption changes, it is evident that as the main delivery mechanism of the School Milk Measure is a price subsidy, its impact is targeted at a factor of minor influence in determining consumption of milk and milk products. Not surprisingly, this means that its net impact on consumption is likely to be very small.

8.6. Effectiveness of the impact of the EU School Milk Scheme (price subsidy) on the consumption of milk: form of consumption and relevance to tastes and customs

a) Form of consumption and presentation

One aspect of effectiveness for the School Milk Measure relates to the extent to which it makes milk and milk products available to schoolchildren in a form or manner in which they commonly consume these products. If schoolchildren consume a relatively high proportion of their intake of milk and milk products either as a drink on its own or as part of a main mid-day meal (the two main forms of delivery for the scheme) then the scheme can be considered to be reasonably effective in targeting these aspects of consumption. Against this background, the findings presented in the sub-sections 8.1 to 8.3 and elaborated further in Appendix 2 show the following:

- in the UK, the majority of milk consumed is with other products with only 12% consumed or drunk on its own. The most popular way of consuming milk is with cereal (at breakfast) closely followed by in tea (together these forms of use account for about half of all liquid milk consumed). For these forms of 'complementary product consumption', price of the milk is considered to be of negligible importance to the consumption level of say breakfast cereals or tea and hence exhibits an extremely low level of price elasticity. Given that price has been shown above to be of minor importance to influencing consumption of milk *per se*, in cases where milk is consumed as a complementary product, the impact of the subsidy scheme is even further diminished. Information about the form of consumption amongst school children is however very limited and the only information identified relates to teenagers²². This shows some similar features with milk being mainly consumed with cereals (at breakfast) followed by as a drink on its own. Thus whilst the latter form of consumption is one targeted by the scheme, this represents only one form of consumption;
- in France similar patterns of consumption to the UK are apparent with the most popular forms of consumption being as part of a hot drink such as coffee (accounts for 70% of liquid milk consumption). Only 9% of consumption of liquid milk is estimated to be as a drink on its own. As in the UK, this suggests that the EU subsidy scheme is targeting only a minor form of consumption of liquid milk and hence contributes to further diminishing the effectiveness of the scheme in meeting its primary objective;
- in Germany, liquid milk is mainly consumed as a drink with supper or at breakfast and as a complementary product with cereals at breakfast. As in the UK and France this suggests that the EU subsidy scheme targets only a very small form of consumption, diminishing its effectiveness in meeting its primary objective;
- for completeness it should be noted that no data was identified by the desk research (within the short time period provided for the evaluation study) that examined the form and patterns of liquid milk consumption amongst schoolchildren in France or Germany;

²² Whilst this includes some school ages, this age group does not have access to the school milk scheme.

- in relation to the form of consumption of other milk product, we identified only relevant data for France (see Appendix 2). This shows that 4%, 44% and 35% respectively of milk, cheese and yoghurt consumed tends to be with the mid day meal. In terms of targeting the mid day school meal time as a point for consumption of cheese and yoghurt, the scheme is reasonably effective (the only other point of consumption with higher shares of total consumption is with dinner which is outside school hours).

b) Relevance of product availability to underlying tastes and preferences

At the EU level, the eligible list of products available within the scheme does not cover all dairy products. However, it does cover the key liquid milk types consumed (whole milk and semi-skimmed milk) and the most important processed milk product (cheese with over 40% fat). Nevertheless, it leaves out some products for which there are underlying upward changes in demand within the EU. The following are of particular note:

- semi-skimmed yoghurts and yoghurts containing fruit and flavouring (which were removed from the scheme in the 1990s). Consumption of these products is increasing in the UK, France and Germany;
- skimmed milk (ie, products with less than 1% fat content) for which consumption levels are increasing in countries such as Finland, Sweden and France;
- low fat cheeses and low fat fromage frais (eg, consumption is increasing in the UK, France and Germany);
- desserts and cream for which, for example consumption is increasing in Germany.

It should however be recognised that the availability of products eligible within the scheme are not all made available to schoolchildren at the Member State level. Hence the scope for countries opting out of some product categories reduces the effectiveness of the scheme targeting the most popular products consumed. For example, cheeses are not available in Germany and the UK. Additionally the voluntary nature of the scheme relating to which products are taken up at the school level may, in some instances further reduce the effectiveness. For example in the UK, many schools do not supply semi-skimmed milk (the main form of consumption for liquid milk in the UK) because of factors such as administrative convenience (less paperwork to deal with one product rather than two) and the higher level of price subsidy available on whole milk (a side effect of one part of the scheme on the effectiveness of another part of the scheme).

c) Contribution to encouraging the habit of consumption (after children leave school)

In order to examine the possible impact of the scheme on this objective, it was necessary to first seek to identify data relating to milk and milk product consumption by age groups in the main case study countries examine. The research only identified published material of relevance from France. This shows (see Appendix 2) that:

- the frequency of liquid milk consumption per week declines with age, especially after the age of 20 and greatest amongst males;
- the frequency of cheese consumption per week tends to increase with age.

Whilst it is difficult to assess whether these features are representative of trends in other Member States, this suggests (if applicable across the EU) that these underlying consumption habit changes with age constrain the effectiveness of the measure in seeking to encourage the habit of liquid milk consumption but may assist in developing the habit of consuming cheese. However, without more

comprehensive data relating to changes in consumption patterns by age and the reasons for this, it is not possible to draw any more detailed conclusions relating to the effectiveness of the measure in meeting this objective.

Nevertheless, it should be recognised that consumption of milk and milk products via the scheme is very small relative to total EU consumption. Consequently, the overall conclusion that can be drawn is that the scheme is unlikely to make anything but a very small positive contribution (unquantifiable) towards habit forming amongst the young.

9. Scheme disposal costs and value for money considerations

In this section the scheme disposal costs are examined and compared with some of the main alternative forms of disposal used for milk and milk products in the EU. This then forms the main basis for assessing the value for money of the measure relative to some alternatives. The main alternatives used for comparison are disposal methods that also use the same delivery mechanism (ie, price subsidy) to the school milk scheme. Additionally, some comparisons are also made with the other main measure used as an instrument to increase consumption, namely promotion.

9.1. Disposal costs of the scheme relative to other forms of disposal using price subsidies

a) Trends in expenditure on the school milk scheme

Expenditure under the scheme has declined substantially over the period 1991/92 to 1996/97 (Table 9.1) with the 1996/97 expenditure level being 46% lower than the 1991/92 level, despite the fact that the EU had expanded from 12 to 15 Member States. The largest decline in expenditure occurred in Spain and the UK (78% and 70% respectively over the period). Most of the decrease in expenditure took place in 1993/94, following a reduction in the subsidy level and in 1994/95, following changes in the products that could receive subsidy under the scheme and the introduction of 'opt-out elements'.

Table 9.1: Trends in expenditure on EU school milk measure, million ecu 1991/92 to 1996/97

	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
Finland ²	n/a	n/a	n/a	n/a	2.2	5.6
France	67.9	64.6	40.2	27.9	34.2	24.1
Germany	47.4	52.6	41.6	31.4	26.7	24.2
Spain	27.6	21.7	15.2	8.2	7.9	6.0
Sweden ¹	n/a	n/a	n/a	n/a	9.8	10.4
UK	57.0	49.9	30.6	21.9	20.8	16.3
EU-12	232.7	220.6	154.6	107.9		
EU-15				111.5	123.6	107.7

Notes:

1. Measure applied since 1.1.95

2. Measure applied since 1.7.95

Source: European Commission, National data

b) Disposal cost per tonne (whole milk equivalent) under the scheme

Detailed in Table 9.2 are the disposal costs per tonne of milk (whole milk equivalent) under the EU scheme. The net subsidy level declined sharply in 1993/94, in line with the reduction in the subsidy level (from 125% to 95% of the target price). Due to the removal of the switchover coefficient, the subsidy rates rose in green ecu terms, but remained unchanged in market currency terms.

Table 9.2: Disposal cost per tonne (whole milk equivalent) under school milk scheme (market ecus)

	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
Finland ²	n/a	n/a	n/a	n/a	229	253
France	532	432	291	298	363	258
Germany	376	395	303	318	290	281
Spain	407	308	201	208	228	184
Sweden ¹	n/a	n/a	n/a	n/a	324	304
UK	440	410	341	272	317	349
EU-12 (green ecus)	429	390	308			
EU-15 (green ecus)				281	314	266
Subsidy % of milk target price	125%	125%	95%	95%	95%	95%

Notes:

1. Measure applied since 1.1.95

2. Measure applied since 1.7.95

Source: European Commission

For each member state and for the EU as a whole, the subsidy level per tonne of school milk is calculated in whole milk equivalent and so should in theory be similar across all Member States and should be close to the set subsidy level. However, Table 9.2 shows that there have been important differences and variations across Member States and on a yearly basis. This is partly explained by currency fluctuations versus the green ecu.

c) Disposal cost per tonne (whole milk equivalent) under other EU measures

Table 9.3 provides disposal costs per tonne for SMP and butter under domestic market disposal measures. This provides a base for comparison of the costs of disposing of milk under the EU school milk scheme and other milk product subsidy schemes in place in the EU.

Table 9.3: Disposal cost per tonne (whole milk equivalent) under other EU measures, ecus

	1992	1993	1994	1995	1996
Domestic market disposal measures: aid per tonne whole milk equivalent					
Skimmed milk and SMP ¹	75.0	72.1	68.9	67.0	68.4
<i>ratio subsidy cost/market price</i>	0.39	0.37	0.36	0.33	0.36
Skimmed milk and SMP used in animal feed	69.7	66.1	66.9	65.1	70.6
Skimmed milk and SMP used in casein	83.8	83.8	73.2	69.7	65.6
Butter and butterfat ²	51.6	64.8	56.5	55.1	56.8
<i>ratio subsidy cost/market price</i>	0.33	0.42	0.36	0.34	0.38
Export measures: export refund costs per tonne whole milk equivalent					
Skimmed milk and SMP	55.8	61.7	45.6	48.0	58.6
Butter and butterfat	56.3	94.0	68.1	92.0	70.7

Notes:

1. Subsidised for use in animal feed and casein production

2. Subsidies for use in welfare schemes, butter concentrates, sales to food processors and armed forces

Source: Based on EU Commission data

The disposal cost per tonne of skimmed milk and SMP in whole milk equivalent terms has been between 67 and 84 ecus per tonne since 1992, while for butter and butterfat it has been between 52 and 65 ecus per tonne. In addition, disposal costs of exports have fallen within a range of 46 and 59 ecus/tonne for SMP and 56 and 94 ecus/tonne for butter between 1992 and 1998. These costs are

significantly lower than the costs of disposal under the school milk scheme (266-314 ecus/tonne 1994-96).

This large difference in relative disposal costs has occurred because SMP and butter subsidies and export refunds only aim to reduce product prices to a level similar to world markets (the ratio of subsidy cost to market price is generally between 0.35 and 0.4), while the school milk subsidy is equivalent to 95% of the intervention support price provided for SMP and butter.

The evidence presented above suggests that as a measure to help expand the market for milk products and as a surplus disposal mechanism, compared to some of the main alternatives that use price subsidies, the School Milk Measure has been poor value for money. The main alternatives of using export subsidy assistance, or disposal subsidies for other products such as butter and SMP, offer much more value for money in terms of disposal costs per tonne of product.

9.2. Comparison of the School Milk Measure with promotional measures

From an evaluation perspective a comparison between the School Milk Measure and other EU funded measures to promote consumption of milk and milk products essentially requires a comparison of the respective scheme costs relative to impact on consumption.

In 1996/97 107.7 million ecus was spent on the School Milk Measure, about 405,000 tonnes of whole milk equivalent were consumed directly as a result of the measure (ie, in schools under the scheme), giving an average cost of disposal of 266 ecus per tonne. In contrast about 10 million ecus was spent on the EU Action Programme to promote milk consumption in the EU. Estimating the impact of these promotional measures on the consumption of milk in the EU is however extremely difficult. Apart from such an activity being outside the terms of reference for this evaluation, the contractors are not aware of any published information that has evaluated the effectiveness of this measure or attempted to ascribe causality to the promotional measures funded within the scheme with a reasonable degree of confidence²³. Evaluation of promotional activities is a complex issue and measuring causality and attributing changes in consumption levels to promotional activities is notoriously difficult because of the various other factors that can influence consumption levels. The usual approach to dealing with causality for evaluation purposes *per se* is to attempt to exclude the influence of other factors by using 'control' samples (eg, if measuring the impact of scheme A on consumer activity, measure and compare behaviour with a group of people who have not been subject to the activities of scheme A). In respect of promotional activities it is however usually more difficult because it is very difficult to identify consumers who have and have not 'received' the messages or activities of the promotion campaign.

In order to examine causality and impact of promotional activities, a number of methods exist. The main ones include:

- assessment of levels of awareness and recall of products, brands, an advertising campaign etc amongst a target population. Whilst this will highlight levels of awareness of a promotional

²³ It is noted for example that in the Commission Communication to the Council relating to the Action Programme to promote milk consumption, some references are made (notably page 3) to the nature of promotional campaigns and increases in the level of consumption in the year of and following the promotion. However, no evidence of possible causality was included. Also, on page 4 reference is made to a promotional campaign in Italy leading to an increase in consumption 'which is certainly attributable to some extent to the promotion campaign'. Without access to a copy of this specific evaluation report it is not possible to assess the extent to which this causality is reasonable by the criteria referred to below.

campaign (an indication of successful delivery), this does not provide any indication as to whether the promotional message induced any changes in purchasing and consumption patterns;

- changes in attitudes to a product. This takes the above step further by examining attitudes towards a specific product or group of products. It will allow some indication of whether consumers have become more or less positive towards the products being promoted or not and as such may be as proxy for indicating effectiveness. However, it again does not examine actual purchasing practices and any changes.
- changes in purchasing behaviour. This is the only effective way of examining the effectiveness of promotional activities. However, important aspects to take into consideration include:
 - the time period examined: an effective campaign should induce a medium/long term change in consumption - any evaluation should therefore examine consumption levels over the same time period;
 - the impact of other factors (eg, income levels, price, changes in tastes, seasonality, price of substitute goods, agricultural policy, demographics).

Bearing these factors in mind, it is not possible (in the context of this study) to attribute any specific quantity change in the level of milk and milk product consumption to the EU funded promotional activities. As a result it is not possible to make a comparison from which a value for money comparison with the School Milk Measure can be made.

10. Relevance (pertinence) of the scheme

In this section the relevance of the scheme is considered through a brief review of the intervention logic for the scheme and the scheme objectives.

10.1. Intervention logic

a) Market stabilisation

As indicated in sub-section 1.1, the measure mainly seeks to address a need to contribute to milk and milk product market stabilisation by encouraging consumption (ie, consumption levels are at a level higher than would otherwise have occurred in the absence of the measure). This pre-supposes that there is an underlying position of surplus supply in the market.

The evidence presented in section 7 shows that the EU has been in a position of surplus supply of milk and milk products throughout the last five year period. In addition, this position is likely to continue over the next few years even if the reforms proposed in Agenda 2000 were to be implemented as proposed²⁴. Hence, the underlying rationale for the measure appears to be relevant both now and in the next few years.

b) Educational and nutritional development of children

The other main thrust for intervention logic relates to the scheme contributing to the positive educational and nutritional development of children in the EU (encouraging the habit of consumption of products that have positive health benefits). In relation to this:

- milk and milk products are widely perceived to make valuable contributions to childrens' health – based on medical evidence that limited up-take can be detrimental to the nutritional needs of some children (see Appendix 3 for further discussion);
- in most Member States, appropriate government Ministries (eg, of Health) issue dietary guidelines for a healthy diet amongst their citizens (eg, in the UK these recommend that most people have three servings per day from a group comprising milk, cheese, yoghurt and fromage frais). Relative to these there is evidence in most Member States that some children fail to meet such targets (eg, in 1997 a UK survey of teenagers identified that 14% of a representative sample of children failed to meet the intake guidelines).

Whilst the above highlights only limited examples, it does show that there is a continuing logic to initiating measures that aim to encourage consumption of milk and milk products in children on health and nutrition grounds both in relation to new children entering education and those already receiving education.

Overall, this suggests that the underlying rationale or relevance of the scheme remains both currently and for the foreseeable future.

²⁴ Based on the Commission's own forecasts made in Situation and Outlook: dairy sector CAP 2000.

11. Conclusions and recommendations

In this final section, first conclusions and secondly recommendations for changes to the EU School Milk Measure are made. These are based on the analysis presented in the earlier sections and are structured in line with the order of the specific questions posed by the EU Commission in the evaluation's original terms of reference.

11.1. Conclusions

11.1.1. Methodology used

Overall the main evaluation tools used were desk research and analysis supported by limited, qualitative interviews with representatives of managing agents, school and local authorities, administering authorities and national government departments. Primary data collection, especially amongst scheme beneficiaries was not undertaken. As a result, identifying clear causality between the scheme and specific outputs and objectives has not been possible for some aspects examined and the conclusions drawn are, in some instances based on limited data and qualitative perceptions.

Whilst this represents a weakness of the evaluation tools used it should be recognised that the use of these tools was outside the control or influence of the contractors. The limited time period and budget made available for the evaluation exercise was set by the Commission and effectively constrained the evaluation to using these tools. Despite this the contractors consider that the methodology used has been sufficient to enable reasonably robust conclusions (and recommendations) relating to the scheme's effectiveness and efficiency to be drawn.

11.1.2. General conclusion

One of the most important factors influencing take-up and operation of the scheme in the EU is Member States' national policies. This encompasses both policies towards the specific implementation of the EU scheme (eg, which options are taken up) and also broader social policies relating to the provision of education and health services. Consequently, in drawing conclusions it is important to place them within the context of Member States' School Milk Scheme-specific and broader national social policies.

11.1.3. Scheme efficiency

The main conclusions relating to the management methods and their efficiency are as follows.

a) Impact of the measure on the prices paid by beneficiaries

In seeking to identify causality between the price subsidy aspect of the scheme and price paid for milk and milk products by schoolchildren, the exercise is affected by several complicating factors relating to the ways in which the scheme is operated and managed in each Member State. These factors, which are common to most countries include:

- for a significant proportion of liquid milk provided to schoolchildren there is no transparent price available for comparison at the level at which consumption takes place. Thus, it has 'no price' to a schoolchild where it is provided free (eg, for drinking to nursery school children in many countries or with school meals in Finland and Sweden) or where it is consumed as a complementary product (ie, as part of a meal);

- for all dairy products other than liquid milk, consumption is as an ingredient or as a specific item selected within a school meal. This also means that there is rarely a transparent price at point of consumption;
- where products supplied via the scheme are consumed as part of school meals the price paid tends to be subsumed within the cost of the school meal;
- the linkage between the EU scheme and national schemes for free school milk or free school meals affects the price paid for milk and milk products at the school and parent levels, not the level of beneficiary;
- although the scheme administration requires claimants to demonstrate that they are passing on the subsidy to beneficiaries, there does not appear to be any formal monitoring and collection of information about actual prices paid by schoolchildren in any Member State²⁵. This does not imply that the subsidy is not being passed on (discussion below concludes that the control procedures appear to be adequate for ensuring this), rather than there is no systematic collection of price data undertaken to see, for example if prices paid by beneficiaries are less than the maximum prices set.

Given these complications the main conclusions relating to price transmission of the scheme subsidy are:

- the only instances where it is possible to track price transmission to schoolchildren is where milk is provided as a drink and schoolchildren are required to pay for the drink themselves at time of consumption (ie, break or lunch time). The evidence presented in section 3 shows that where comparisons have been possible to make of maximum ceiling prices and unsubsidised retail price equivalents, there is clear evidence of significant difference. In addition, when the UK withdrew from the secondary school part of the scheme, the resultant increase in price paid for liquid milk for drinking by children increased by an amount that was marginally greater than the level of subsidy;
- tracking the prices paid for school meals by parents and the contribution to these prices made by the scheme subsidy has not been possible due to a lack of data being provided or collected;
- at the school level, where maximum ceiling prices are set (eg, Germany), the maximum prices paid by schoolchildren for liquid milk (and wholemilk yoghurt) are clear and transparent demonstrating that the subsidy is being passed onto schoolchildren. Where maximum selling prices are established at a school level (eg, France, UK), the administrative and control procedures used appear to ensure that the subsidy element is passed onto beneficiaries (a lack of data means this qualitative conclusion cannot be quantitatively confirmed);
- in many Member States examined, the procedures used for setting the maximum selling or ceiling prices take into account factors such as transport and packaging²⁶. Whilst this appears to limit the transmission of the subsidy from the purchase price at the school level, the evidence that compares liquid milk prices paid by schoolchildren within the scheme relative to external, unsubsidised prices (see above) suggests that the subsidy is still largely passed onto schoolchildren. It should also be recognised that there is reasonable justification for making such allowances in order to overcome the disincentive associated with the time and cost of administration of school milk (including the requirements of the EU and other relevant national schemes), the additional costs of transport to individual schools and the additional packaging costs, associated with the stated preference in many schools in countries such as the UK,

²⁵ No such information was made available to the contractors.

²⁶ Also scheme administration for schools in the UK.

Germany and France for school milk to be supplied in small retail packs (eg, 0.2 litres). In many schools this is the only form in which schools are willing to make the product available for children to drink. Hence, if it was considered that limits should be placed on allowances made for aspects such as transport, packaging and administration at an EU level, this would probably result in decreased product availability at the school level (ie, efficiency gains might be made in transmission of the price subsidy but the measure would be less effective in making subsidised milk available to its target beneficiaries);

- whilst there is limited data available to allow comparisons to be made between the prices paid by schoolchildren for milk and competing products, the evidence presented in Section 3 (notably for Germany and Finland) shows that the price of subsidised liquid milk in schools was significantly lower than the price of competing products (where offered) such as mineral water, soft drinks and fruit juices. In contrast comparisons of unsubsidised milk prices with competing product prices show a narrowing of the differences with, for example in Germany, the retail price of liquid milk being similar to carbonated drink prices but higher than fruit juice and mineral water prices;
- competition for liquid milk from other drinks tends to be more heavily influenced by factors other than price. In particular, national, regional and school level decision-making is the key factor of influence because decisions made at this level determine availability of alternative drinks in schools. In general there are very few alternatives made available at nursery and primary school levels. Only in secondary schools does there tend to be greater scope for children consuming alternative, competing products.

b) Impact of the measure on the availability of milk and milk products in schools

The evidence presented in section 4 shows that there are both some similarities and differences of product availability in schools across the Member States examined in detail. As these tend to be derived from common underlying factors, it is concluded that the findings based on six country case studies are probably reasonably representative of the impact of the School Milk Measure on product availability in schools across the EU as a whole. These conclusions are as follows:

- the most important factor determining product availability is policy set at the national and school level. Such policy tends to reflect a combination of national Member State policies towards the provision of health and general education services and attitudes of head teachers/teachers within schools. More specifically:
 - at nursery schools, in some Member States (eg, Sweden, Finland) only water and milk are made available whilst, in others such as France and the UK only limited alternatives such as water and squash are also made available;
 - at primary schools milk mainly competes with non subsidised fruit juices and squashes at meal times. Opportunities to consume alternatives to milk also vary by country with opportunities being greatest in countries such as the UK and France and least in Finland and Sweden

In both cases of nursery and primary schools it is national, local and school policies that largely dictate product availability. The EU School Milk Subsidy scheme has very limited impact on product availability with its impact restricted to a provider of part subsidy towards the cost of school meals and drinking milk. This role does probably make a small, positive and indirect contribution towards making milk available for consumption in schools, however the lack of adequate baseline data makes it difficult to assess the extent to which product availability might fall in the absence of the scheme.

- at secondary schools competition for liquid milk as a drink from competing products tends to be greater than at the primary and nursery levels. There is often a wide range of products available via school shops, vending machines and sold with meals. Alternative product availability tends to be greatest in countries such as France, the UK and Germany and lowest in Finland and Sweden. As with primary and nursery schools the main factor determining availability of alternatives is national, regional and individual school policies although the willingness of companies supplying competing drinks (notably soft drinks) to provide free refrigerated vending machines and to offer commission to schools (eg, school caretakers in Germany) on sales has also probably increased the availability of alternatives (suppliers of milk do not tend to offer refrigerated vending machines or offer commission on sales). Hence, overall at secondary schools, the impact of the School Milk Measure has probably been even more indirect and limited than at primary and nursery school levels. Limited empirical evidence from the UK shows that when the country opted out of the secondary school element of the scheme in 1994/95 consumption of milk in secondary schools was reported to have fallen by 20%. However, it is not possible to fully attribute this decline in consumption to the withdrawal of the scheme because of a lack of data on the extent to which milk products continued to be made available in schools, whether some schools stopped making milk available, whether more children bought in milk from outside school for consumption at school or whether more milk was consumed outside school.
- product availability is also significantly influenced by which elements of the scheme Member States choose to take up. Hence product availability is greater in countries such as France and Spain which have taken up all the cheese options than in the UK which has not. Whilst it is difficult to identify empirical data relating to the reasons why some countries take up scheme options and others do not and whether these relate to the scheme, it is evident that external factors such as national budgetary savings and perceptions that the scheme has limited and declining take up have probably been important factors influencing scheme option take up at the Member State level;
- relative to milk and milk products for which there are underlying increases in consumption, a key finding is that two products (skimmed liquid milk and low fat cheese) for which consumption levels are generally increasing in most Member States are not available for supply in the scheme. In Finland and Sweden these products are readily made available to schoolchildren in addition to EU scheme products whereas in countries such as France and the UK, milk product availability tends to be more limited. This suggests that national policies relating to health and nutritional education are the main reasons why low fat products are available to school children in Finland and Sweden. In contrast in the UK and France the 'non availability' of such products for consumption in preference to EU scheme products only suggests that the scheme may be having a positive impact on product availability in these countries (ie, in the absence of the scheme there might be even less milk products made available). It is however not possible to attribute the product availability in countries such as France and the UK to the EU scheme because of a lack of appropriate data available to assess what might happen in the absence of the scheme;
- whilst it is noted that the volume of milk and milk products supplied under the scheme fell significantly in the years after 1994/95 (when a more restricted list of eligible products was introduced), the lack of information relating to the consumption of the withdrawn scheme products (eg, semi skimmed yoghurts) outside the scheme by school children both before and after 1994 makes it difficult to assess the contribution of the scheme;
- the nature of the scheme conditions is also considered to have influenced the form in which product is made available. The setting of the maximum entitlement at 0.25 litre/head/day is widely

perceived to have contributed to the dominance of small, throw away 0.2, 0.25 litre and 1/3 pint consumer packs in countries such as the UK, France and Germany because such pack sizes facilitate relatively easy administration and monitoring of the maximum entitlement. Throw away pack sizes tend not to be used only where national legislation prohibits their use (eg, on environmental grounds in Finland and Sweden).

c) *Number of beneficiaries relative to target population*

In assessing the efficiency and effectiveness of the measure to reach its target population of schoolchildren, the following conclusions drawn from section 6 can be made:

- take-up across the EU in 1996/97 was equivalent to only 12% of the maximum subsidy entitlement volume. This compares with 19% in 1992/93. This suggests a relatively poor level of efficiency and effectiveness in reaching the target population especially as the Union expanded from 12 to 15 Member States during this period (two of the new Member States being countries with the highest levels of take up in the EU). Thus the effectiveness in reaching the target population also appears to be deteriorating;
- the variations in take up across the EU are mainly related to national and local policies on general health education rather than the scheme itself. Hence in relatively high uptake countries such as Finland and Sweden, product provision under in the scheme is wide, products for drinking made available to pupils reflect underlying consumption trends, milk plays a prominent role in health educational programmes, there is often limited/restricted access to alternative drinks (notably at primary and nursery levels), school milk is made freely available to nursery school children and all school children receive free milk products as part of free school meals. In contrast, relatively low uptake (eg, Germany) reflects a combination of limited product option take-up, no provision of additional national scheme aid, a wider availability of alternative drinks, very limited access to school meals (the main focus of consumption) and a common perspective amongst many in the education services that they should play only a limited role in the provision of health/nutritional education and information;
- whilst factors external to the scheme are the primary factors of influence for take up, the scheme itself contributes in the following ways:
 - by providing a subsidy it contributes to increasing product availability (albeit in a very limited way);
 - in the case of liquid milk for drinking, where children are required to pay for drinks, the scheme also offers milk at prices that tend to be competitive relative to alternatives and hence probably makes a positive contribution towards encouraging consumption to a level that would have been lower in the absence of the subsidy²⁷. Quantifying this impact and attributing causality to the scheme is however difficult due to data limitations. Hence although evidence from the UK after the opt out of the secondary school scheme identified a 20% fall in liquid milk consumption in these schools, there is no data available which has disaggregated the consumption decrease into an element attributed to decreased consumption at schools by children who continue to be offered milk as a product for drinking and an element attributed to milk no longer being made available to children;
 - scheme administrative requirements are considered by some school administrators, head teachers and teachers²⁸ to have acted as a disincentive to scheme take up at the school

²⁷ Due to limited transparency relating to the impact of the scheme on the price paid by parents for meals and on ingredient selection for school meals at the school level it is not possible to quantify the impact of the scheme on the price paid for milk products consumed via school meals.

²⁸ Qualitative evidence presented in section 4, including a survey of administrators and managing agents in the UK (1998).

level. These stem mainly from the time commitments required to order milk, collect money, distribute milk, supervise drinking, ensuring maximum entitlement is not exceeded and the administration of form returns. In addition, there is a financial disincentive to take up associated with the requirement for schools to fund the purchase of milk and then wait up to four months before being reimbursed.

Overall, the scheme's efficiency and effectiveness in reaching its target population is poor. It probably makes a small positive contribution to increasing the level of product availability and consumption amongst schoolchildren. Factors external to the scheme are more important in influencing take up.

d) Strengths and weaknesses of mechanisms used to manage, administer and monitor the scheme at the Member State level

Whilst the evaluation terms of reference indicated that the evaluation should seek to draw conclusions about the relative strengths and weaknesses of different national schemes (and to identify good practice), the contractors do not consider it appropriate to systematically analyse each Member State's scheme administration from a strengths and weaknesses perspective. This reflects the conclusion that the ways in which different Member States have chosen to administer the scheme reflect a combination of different:

- historical structures in the provision of education services, national school milk and school meals services and local/regional government *per se*;
- historical developments in the national administration and operation of industry level and agricultural policy mechanisms;
- structures of the dairy sectors;
- attitudes towards the role of government in the provision of health and general education services.

The net effect of the above features means that the implementation and administration of the scheme at Member State level largely reflects national historical and structural differences of public administrations and dairy sectors. Also, as indicated above, take-up of the scheme (ie, effectiveness in reaching the target population) is significantly influenced by national policies towards the provision of health and education services. Hence, some of the key features of structural organisation in one Member State that might be deemed as 'positive' may be inappropriate for adoption in another Member State. Nevertheless, there were some common features identified that suggest that the following qualitative conclusions relating specifically to scheme administration can be made:

- all of the Member States examined operate detailed and fairly stringent procedures for registering managing bodies. These are perceived by many amongst both administrators on the government side and managing bodies to be onerous²⁹. On the one hand these are considered necessary to adequately monitor allocation of EU funds and to prevent scope for misappropriation and fraud. On the other hand they act as a dis-incentive to effective take-up of the scheme by many schools, local authorities and dairies in countries such as the UK, France and Germany. This is compounded by the short term cash flow requirements for funding milk product purchases falling on local authorities or schools which then have to wait up to four months for subsidy payment;

²⁹ The administration dis-incentive' relates to a variety of aspects such as administering school milk, monitoring uptake, dispensing milk, supervising children consuming, ordering milk and applying for the subsidy. Hence some of this burden relates to the EU scheme itself and some more generally to the supply of school milk *per se*.

- the inherent 'dis-incentive' to scheme take-up associated with the time and costs of administration has been recognised in the UK where an administration allowance has been introduced. Whilst the net effect of this allowance may appear to offset the 'price subsidy' element of the EU scheme, the evidence presented in section 3 suggests that it is not adversely affecting the transmission of the subsidy to the price paid by schoolchildren. Rather, by explicitly recognising that there are costs involved in administering a school milk scheme and providing a claimable allowance for this, the UK's system may well be contributing to a higher level of scheme take-up than would otherwise have occurred. Whilst it is difficult to quantitatively demonstrate if this positive aspect may have occurred, it is concluded that there may be reasonable grounds for considering this as a positive implementation measure that might be transferred to other member states;
- where dairies are involved in the scheme as claimant/managing agents, the costs of administration at the school level appear to be lower and take-up higher than otherwise. The cost savings stem mainly from lower involvement of the schools in administration and the fact that the schools do not have to bear the cost of waiting for the subsidy payment. The higher school take-up where dairies are actively involved stems mainly from the incentive associated with increased sales of dairy products by the dairies and the reduced administrative costs in schools. Nevertheless, whilst there are evident benefits from increasing involvement of dairies in the scheme, their willingness to become involved is directly related to the benefits they may obtain. Thus in Finland and Sweden, most dairies consider the school milk market to be an important segment of their market worthy of attention, hence a willingness to be involved. In other countries willingness to become involved tends to be much more limited (eg, the UK) because the market segment is perceived to be very small and often 'not worth bothering with';
- there is a trade-off between levels and costs of administration, monitoring and checking with the incentive/dis-incentive to take-up the scheme. The greater the level of controls the greater the scope for avoidance of mis-appropriation of funds/fraud, but the higher the costs (time and money) imposed on both administrators and managing agents. Hence, the level of dis-incentive amongst managing agents such as dairies in Germany, to take-up the scheme may be greater than their counterparts in some other countries because of the requirements to annually re-register for approval and to register separately in each Länder in which a dairy may wish to supply.

11.1.4. Scheme effectiveness

a) *Impact of the scheme on the market for milk products*

In examining the impact of the scheme in meeting its primary objective to contribute to increasing the consumption of milk and milk and milk products, an important reference base relates to the context of the scheme impact relative to total levels of consumption in the EU. Key findings related to the relative importance of the scheme are:

- the volume of milk and milk products supplied under the scheme accounted for only 0.3% of total milk delivered to dairies in the EU in 1996/97. This falls within a range of 0.1% in the Netherlands to 1% in Sweden;
- the volume of milk (in milk equivalent terms) supplied under the scheme relative to EU milk deliveries to dairies has declined in recent years from 0.55% in 1992/93 (EU-12) to 0.3% in 1996/97 (EU 15). The comparable volume at the EU-12 level in 1996/97 is less than 0.3% (nearer 0.2%);
- supplies of whole milk, semi-skimmed milk and cheese through the scheme accounted for 2.2%, 1.1% and 0.3% respectively of consumption levels of these products in the EU (1996/97). At the Member State level, the highest shares of consumption accounted for by the scheme in 1996/97 were whole milk (Spain 11%), semi-skimmed milk (Sweden 6.7%) and cheese (France 0.9%).

Also, in terms of the flavoured milk drink market, German scheme consumption is estimated to account for about 16% of total market flavoured milk consumption.

Overall, the volume of milk and milk products supplied under the scheme is extremely small relative to the size of the EU market. It is also declining in relative importance. This suggests that any net positive impact of the scheme on consumption levels identified in the study (see below) should be seen within this broader context of total EU consumption. At best, any impact of the scheme has been very small relative to the context of its primary objective.

b) Effectiveness in increasing consumption of milk products

i. Assessment of the relative importance of price as a factor affecting consumption

The evidence presented in Section 8 shows that price does not appear to be a major factor influencing take-up of milk and milk products by consumers including school children (the reader should note that data relating to consumption of milk products and competing products disaggregated to the specific school age groups that can allow reasonable conclusions to be drawn are not readily available). Evidence to support this conclusion includes:

- the price elasticity of demand for liquid milk has been estimated in the UK to be -0.2 which implies that a decrease in price should have resulted in an increase in consumption (eg, a 10% price decrease should result in a 2% increase in consumption). However, between 1991 and 1996 the price (real and nominal) of liquid milk fell by 16% yet over the same period actual total milk purchases fell by 3.8%. Similarly in France and Germany whilst the nominal price of liquid milk has fallen between 1992 and 1997, over the same period consumption decreased. This suggests that factors other than price have been far more important in influencing milk consumption;
- in the UK, France and Germany the price competitive position of liquid milk relative to soft drinks has improved over the last five years (ie, milk prices fell relative to soft drink prices). However, over this period, consumption of liquid milk decreased whilst consumption of alternative drinks such as fruit juices, soft drinks and mineral water increased.

Given the above analysis and comparisons of price and consumption changes, it is evident that as the main delivery mechanism of the School Milk Measure is a price subsidy, its impact is targeted at a factor of minor influence in determining consumption of milk and milk products. Not surprisingly, this means that its net impact on consumption is likely to be very small.

ii. Effectiveness on consumption: the form of consumption and relevance to tastes and customs

Form of consumption and presentation

This aspect of effectiveness relates to the extent to which the scheme makes milk and milk products available to schoolchildren in a form or manner in which they commonly consume these products. If schoolchildren consume a relatively high proportion of their intake of milk and milk products either as a drink on its own or as part of a main mid-day meal (the two main forms of delivery for the scheme) then the scheme can be considered to be reasonably effective in targeting these aspects of consumption. Against this background, the main conclusions that can be drawn from the findings presented in the section 8 are:

- the majority of milk consumed in countries such as France, Germany and the UK is with other products. The most popular way of consuming milk tends to be with cereal (at breakfast) and in a

hot drink such as tea or coffee. For these forms of 'complementary product consumption', price of the milk is considered to be of negligible importance to the consumption level of the breakfast cereals or hot drink and hence exhibits an extremely low level of price elasticity. Given that price has been shown above to be of minor importance to influencing consumption of milk ^{per se}, in cases where milk is consumed as a complementary product, the impact of the subsidy scheme is even further diminished. Information about the form of consumption amongst school children is however very limited and the limited data identified (eg, relating to teenager consumption patterns in the UK) shows some similar features to general consumption patterns with milk being mainly consumed with cereals (at breakfast) followed by as a drink on its own;

- in relation to the form of consumption of other milk product, the research identified only relevant data for France (see Appendix 2). This shows that 4%, 44% and 35% respectively of milk, cheese and yoghurt consumed tends to be with the mid day meal. In terms of targeting the mid day school meal time as a point for consumption of cheese and yoghurt, this suggests that the scheme is reasonably effective (the only other point of consumption with higher shares of total consumption is with dinner which is outside school hours).

Relevance of product availability to underlying tastes and preferences

At the EU level, the eligible list of products available within the scheme does cover the key liquid milk types consumed (whole milk and semi-skimmed milk) and the most important processed milk product (cheese with over 40% fat). Nevertheless, it leaves out some products for which there are underlying upward changes in demand within the EU. These include semi-skimmed yoghurts and yoghurts containing fruit and flavouring, skimmed milk and low fat cheeses for which consumption of these products is increasing in many EU countries (eg, skimmed milk consumption is increasing in France, Germany, Finland and Sweden).

It should, however be recognised that products eligible within the scheme are not all made available to schoolchildren at the Member State level. Hence the scope for countries opting out of some product categories reduces the effectiveness of the scheme targeting the most popular products consumed. For example, cheeses are not available in Germany and the UK. Additionally the voluntary nature of the scheme relating to which products are taken up at the school level may, in some instances further reduce the effectiveness. For example in the UK, many schools do not supply semi-skimmed milk (the main form of consumption for liquid milk in the UK) because of factors such as administrative convenience (less paperwork to deal with one product rather than two) and the higher level of price subsidy available on whole milk (a side effect of one part of the scheme on the effectiveness of another part of the scheme).

Contribution to encouraging the habit of consumption (after children leave school)

Examining the possible impact of the scheme on this objective, requires the identification of data on milk and milk product consumption by age groups. The research only identified published material of relevance from France (see Appendix 2) and this showed that the frequency of liquid milk consumption per week declines with age, especially after the age of 20, whilst the frequency of cheese consumption per week tends to increase with age.

Whilst it is difficult to assess whether these features are representative of trends in other Member States, this suggests (if applicable across the EU) that these underlying consumption habit changes with age constrain the effectiveness of the measure in seeking to encourage the habit of liquid milk consumption but may assist in developing the habit of consuming cheese. However, without more comprehensive data relating to changes in consumption patterns by age and the

reasons for this, it is not possible to draw any more detailed conclusions relating to the effectiveness of the measure in meeting this objective.

Nevertheless, it should be recognised that consumption of milk and milk products via the scheme is very small relative to total EU consumption. Consequently, the overall conclusion that can be drawn is that the scheme is unlikely to make anything but a very small positive contribution (unquantifiable) towards habit forming amongst the young.

The effectiveness of the scheme in improving knowledge of the nutritional qualities of milk products

In examining possible causality between the scheme and knowledge of the nutritional qualities of milk, it is important to recognise that to identify causality it is first necessary to review the nature of promotions of relevance to the scheme. In undertaking this exercise, the main findings identified were:

- generic promotion of milk tends to be dominated by the supply chain (dairies), industry level bodies and sometimes governmental bodies with educational service responsibilities. All of these promotional activities tend to focus on the positive health and nutritional benefits of consumption and are frequently targeted at young people (ie, including those at school within a broader target group of all young people);
- within the promotional activities undertaken there is very little promotion of the EU School Milk Measure. Promotion of the scheme (still at a very low level relative to promotion of other issues) tends to be greatest when dairies are involved as managing agents (eg, in Finland, Germany) mainly because they have a business incentive to encourage in-school consumption and hence to highlight the subsidy element of the scheme. As such, it can be concluded that the involvement of dairies as managing agents tends to maximise promotion of scope and hence may be considered as an example of 'promotional good practice'. It should however be recognised that encouraging dairy involvement as managing agents is heavily influenced by whether dairies consider the school milk market segment to be an important one relative to others. Thus, in Finland dairies consider the market as significant and worthy of attention and promotional effort. In contrast, in the UK and France there is very limited dairy involvement as managing agents mainly because most dairies consider the school milk market to be relatively less attractive and less profitable than other market segments.

Overall, the findings above suggest that as the School Milk Measure has hardly figured in milk product promotions, the measure has had negligible effect on improving knowledge of the nutritional qualities of milk products. This is however not surprising given that the School Milk Measure has no funding provision for promotional activities and is essentially a price subsidy measure only. The only way in which the scheme may make a positive contribution towards improving nutritional knowledge is by increasing product availability to school children and hence increasing the opportunity to consume. As indicated above (and in section 4) the scheme has probably only made a very limited positive impact on product availability.

c) Value for money considerations

Examined strictly from the stated objectives of the School Milk Scheme Regulation 'as a measure to help expand the market for milk products' and as a 'surplus disposal mechanism', the evidence presented in section 9 suggests that the scheme has been poor value for money. Its costs of disposal per tonne have been significantly higher than costs per tonne of disposal via other mechanisms such

as subsidised use of skimmed milk in animal feed and casein and the use of butter and butterfat (eg, in the manufacture of pastry products). In relation to making a possible value for money comparison between the School Milk Measure and other EU funded measures to promote consumption of milk and milk products this has not been possible. This is because to undertake such an exercise essentially requires a comparison of the respective scheme costs relative to impact on consumption. Whilst this is possible for the School Milk Measure, it is not possible for promotional measures³⁰

Overall, as a means of expanding the market for milk products the impact of the School Milk Scheme has probably had a very limited positive impact.

However, it is recognised that the School Milk Measure also plays a role within broader general and health/nutritional policy objectives set and operated at the Member State level. Originally these also formed the underlying historical rationale for the operation of subsidised and free school milk schemes operated at country level even before any EU level scheme was implemented. Whilst elements of such measures (essentially product supply and some aspect of subsidy) have been centralised within the EU scheme as it currently stands, other broader aspects remain at the Member State level. These vary across Member States according to underlying governmental (political) philosophies relating to the role of government in the provision of general and health/nutritional education and information services. Hence the EU policy element fits not only within agricultural policy remits, but also health, education and social policy domains.

The net effect of these broader aspects is to introduce non-agricultural policy related objectives that the scheme might reasonably be judged against. Most of these are not easily capable of evaluation using financial or economic criteria. Given these considerations it is more difficult to evaluate contribution towards delivery of reasonable value for money against such objectives. The contractors also consider that attempts to undertake such an evaluation go beyond the terms of reference for this largely desk based, economic evaluation.

11.1.5. Scheme relevance

The School Milk Measure mainly seeks to address a need to contribute to milk and milk product market stabilisation by encouraging consumption (ie, consumption levels are at a level higher than would otherwise have occurred in the absence of the measure). This pre-supposes that there is an underlying position of surplus supply in the EU market. As the evidence presented in section 7 shows the EU has been in a position of surplus supply of milk and milk products throughout the last five year period and is likely to continue in such a position over the next few years even if the reforms proposed in Agenda 2000 were to be implemented as proposed. Hence, the underlying rationale for the measure appears to be relevant both now and in the next few years.

In respect of the second logic for the scheme intervention³¹ which relates to contributing to the positive educational and nutritional development of children in the EU (encouraging the habit of consumption of products that have positive health benefits) milk and milk products are widely perceived to make valuable contributions to childrens' health (see Appendix 3). Also, in most Member States, appropriate government Ministries (eg, of Health) issue dietary guidelines for a healthy diet amongst their citizens (eg, in the UK these recommend that most people have three servings per day from a

³⁰ This is a complex subject: see section 9 for further discussion.

³¹ Stated in the evaluation terms of reference but not formally stated in the founding regulations for the School Milk Measure.

group comprising milk, cheese, yoghurt and fromage frais). Relative to these there is evidence in most Member States that some children fail to meet such targets.

Whilst the above highlights only limited examples, it does show that there is a continuing logic to initiating measures that aim to encourage consumption of milk and milk products in children on health and nutrition grounds both in relation to new children entering education and those already receiving education.

Overall, this suggests that the underlying rationale or relevance of the scheme remains both currently and for the foreseeable future.

11.2. Recommendations

Drawing on the conclusions presented above, the following recommendations for consideration by the Commission are made. These are presented in order of priority with the most important recommendations presented first. These recommendations essentially stem from the evaluation findings and conclusions relating to scheme effectiveness.

- a) Judged purely against the current, stated documented objectives of the measure that focus principally on maintaining and increasing consumption of milk products and as a surplus disposal tool, the measure has had a marginal positive impact and represents poor value for money in comparison to alternative methods of surplus disposal used. This suggests that the Commission should (in the absence of making fundamental changes to the measure objectives) give serious consideration to withdrawing the measure. The main implications of such action would be place the onus for continuing to provide any form of subsidised milk to schoolchildren on Member State governments. Whilst it is impossible to predict the outcome of such an action it is likely that some Member States would probably take up all or part of the current financial contributions made from the EU budget and continue to offer free or part subsidised liquid milk for drinking and free school meals. However, in some other countries the probable response would be withdrawal from any form of school milk provision (it is noted that one of the original stated reasons for introducing the EU level measure in 1977 was because of declining interest and provision of school milk at the national level at that time). Whilst the net effect of such action would undoubtedly lead to decreased availability of milk products and decreased consumption in schools, the evidence presented in this report suggests that the impact on total milk product consumption by school children would be very limited.
- b) Given that the underlying rationale for the School Milk Scheme continues to be valid (see above), it is recommended that the financial resources currently allocated to the measure might be re-deployed. This re-allocation should be to other measures that aim to meet the key objectives set for the School Milk Measure and that can demonstrate reasonable effectiveness and are better value for money than the School Milk Measure. These fall into two main areas:

Measures to increase consumption of milk and milk products

One such measure of note is the provision of funding for promotional measures to encourage consumption (see section 5). However, as indicated in the report it is extremely difficult (and outside the terms of reference for this evaluation) to identify and attribute causality for changes in milk consumption to any promotional activities undertaken. It is therefore recommended that if the Commission considers that there might be a diversion of current School Milk Measure resources to the additional provision of resources for general promotional activities (which could be

specifically targeted at schoolchildren) this is not undertaken until effectiveness of promotional activities has been established;

Measures to contribute to the positive educational and nutritional development of children in the EU (encouraging the habit of consumption of products that have positive health benefits)

As indicated above in the conclusions, the School Milk Measure plays a role within broader general and health/nutritional policy objectives set and operated at the Member State level. However its contribution to achieving this objective has probably been extremely limited. Bearing these factors in mind, it is recommended that consideration is given to diverting resources to Member State level measures that can be demonstrated to be more effective in educating schoolchildren about the positive health and nutritional benefits of milk product consumption. These are unlikely to involve the use of price subsidies in isolation as has occurred for the EU School Milk Measure. In making such a recommendation, it is recognised that this is placing greater emphasis on a non-agricultural policy related objective which would fall outside the remit of DG VI (Agriculture). Also assessing the effectiveness of measures that target health and nutritional objectives are not easily capable of evaluation using financial or economic criteria. Given these considerations if such a course of action were to be taken by the Commission, careful preparation into how the effectiveness of such measures might be measured should be undertaken.

If the above actions were to be taken, it may also be necessary to re-examine the sources of funding for the measure. Currently, funding is derived from the FEOGA Guarantee fund operated within the framework of agricultural policy support administered by DG VI (Agriculture). Any broadening of the measure's objectives to include health and nutritional considerations suggests that the primary source of funding should come from budget lines operated by other DGs (ie, those with educational and health responsibilities).

Scheme specific issues

As the main recommendations given above focus on dis-continuation of the measure and use of resources for alternative, more effective measures, no further recommendations relating to improving the efficiency of the existing measure are made. The contractors consider that the focus of any change should seek to address the fundamental weaknesses of the measure in achieving its objectives. Whilst making recommendations for improving the efficiency of the existing measure could be offered these would not significantly address the issues contributing to the very limited effectiveness of the measure.

Appendix 1: Scheme mechanisms and arrangements

A1.1. UK

A1.1.1. Milk products provided under the scheme

As from the start of the Summer term 1996, only the following subsidised milks were made available in the UK under the school milk measure:

- plain and flavoured pasteurised or UHT whole milk. This must be cows milk and can be homogenised³²;
- plain and flavoured pasteurised or UHT semi-skimmed milk;
- plain unflavoured, unsweetened whole milk yoghurt.

The scheme in the UK is therefore currently restricted to the products in Category I (whole milk products) and Category II (semi-skimmed milk products), with the exception of 'viii/iii'

Lactose reduced milk, which is suitable for children who are lactose intolerant, is also eligible for subsidy in the UK if it meets the required regulatory specifications. Subsidy can also be claimed where sweetener or flavouring is added by schools to the above types of milk in making milkshakes or similar milk drinks. Similarly, subsidy can also be claimed where sweetener or flavouring is added by the school to plain, unflavoured, unsweetened whole milk yoghurt which it has purchased to make a flavoured or sweetened yoghurt. Claims are not permissible for quantities of milk and yoghurt supplied to the Meals on Wheels Service, luncheon clubs and for other functions which use school premises.

The UK has opted out of two optional product elements of the scheme:

- provision of cheese under Categories (III, IV, V and VI). This ceased to be taken up from the Summer term 1993;
- the use of eligible products as ingredients in the preparation of meals (such as custard, quiche, cake, or for milk which is added to tea or coffee or consumed with breakfast cereal). This ceased to be taken up from the Summer term 1996.

The decision to withdraw from these product elements was based principally on the desire to make savings in public expenditure. Savings in UK Exchequer expenditure were made by withdrawing from these school milk elements as a result of the UK's EU budget contribution rebate. Additional reasons were also identified for withdrawal. These were the perceptions cited by the UK Ministry of Agriculture, Fisheries and Food (MAFF) that:

- up-take in schools was uneven and declining;
- impact of the subsidy was indirect and it was difficult to determine whether its effect was positive because the subsidised products were only available as part of the school meal or used in the preparation of school meals.

³ Flavoured milk may be sterilised.

³³ A fermented milk product similar to whole milk yoghurt.

A1.1.2. Eligible educational establishments

Subsidised milk under the EU scheme is available to school children from the age of three regularly attending and receiving education at:

- nursery schools (in order for nursery pupils to be eligible they must regularly receive nursery education and so subsidy is not available for crèche and playgroups);
- primary schools;
- other schools spanning primary and secondary education, but only for those pupils receiving primary education.

Schools should be:

- Local Authority maintained;
- Independent/non-maintained;
- Grant maintained (GM).

Since the summer of 1996, EU subsidised scheme products have no longer been available to secondary schools, because the UK government decided to opt out of this discretionary element of the scheme. This decision was made principally to make savings in public expenditure and also reflected MAFF's evaluation that:

- up-take in secondary schools was uneven and declining. Hence, although many local authorities made subsidised milk available to secondary schools, not all secondary schools within these local authority areas took up the subsidy;
- subsidised milk was estimated to be available to only about half of the country's secondary schools, and within these schools, only to those students taking school meals;
- as the subsidised products were only available as part of the school meal, the impact was considered to be indirect and difficult to determine.

It was therefore concluded by MAFF that the removal of this element would not adversely effect the health and nutrition of British teenagers.

A1.1.3. Management of the scheme

Claims for the EU subsidy can only be made by approved managing/claimant bodies, which claim for subsidies on behalf of eligible schools. In Great Britain, all approvals are made by the Intervention Board for Agricultural Products (IBAP), while in Northern Ireland responsibility for scheme operation rests with the Department of Agriculture for Northern Ireland (DANI).

At present, the approved claimant/managing body falls into one of two categories:

- **Local education authorities (LEA).** There are over 200 LEAs in Great Britain, although not all are claimants. Approved local authority claimants are permitted to claim on behalf of independent/non-maintained and grant maintained schools as well as for maintained schools. Usually, one department of an LEA is approved, and this makes claims on behalf of all relevant departments within the LEA.

- **Claimant associations.** There are currently three in Great Britain and they exist because some approved local authority claimants are only prepared to claim for their own maintained schools. Hence:
 - the Incorporated Association of Preparatory Schools (IAPS) has been approved to claim on behalf of independent/non-maintained schools in England and Wales;
 - the Grant Maintained Schools Centre (GMSC) has been approved to claim on behalf of Grant Maintained Schools in England and Wales;
 - the Scottish Independent Special Schools Group has been approved to claim on behalf of Scottish Special Schools.

LEAs are by far the largest claimants because most schools fall under LEA jurisdiction (accounting for some 90-93% of total subsidies provided under the scheme in the UK). The remainder is claimed by the three approved Associations.

Dairies in the UK are not involved in subsidy claiming and management. They are also generally not interested in taking up management of the scheme³⁴ because:

- the school milk market is perceived by many dairies to be very small and of limited importance (it accounts for about 1% only of total UK liquid milk sales);
- the supply of milk to schools is considered by many dairies to be relatively less profitable than other supply activities.

A1.1.4. Administrative procedures for managing/claimant bodies

The UK Intervention Authorities have put in place what is widely considered to be a stringent and thorough claiming and administrative procedure. This aims to maximise transparency and minimise fraud. The requirements are detailed below in Table A1.1 and Table A1.2.

Table A1.1: Claimants for independent/non-maintained and grant maintained schools

The register of individual claims handled by a claimant association, must include for each school the following information:

1. Period of claim (monthly or termly).
2. Name and address of school (to ensure that it is registered).
3. Volume of milk and yoghurt supplied.
4. Amount of subsidy claimed.
5. Number of pupil/days.
6. Administrative charge made (if the claimant insists on netting off the administration charge from the subsidy paid to the school it must ensure that both itself and the school show separate entries in their accounts as the full benefit of subsidy must be seen to be passed on to the pupils).
7. Amounts of subsidy received and paid out – with the date of payment.
8. Tick columns to ensure that the following points have been checked on the school claim.
 - The name and address of school is that of the school and not that of a catering company. Payment must be made direct to the school and not to a catering company;
 - The first school day of claim period and last school day of claim period makes the claim eligible for inclusion in a composite claim;
 - The total cost of products distributed has been indicated for all products claimed.
9. A brief explanation of the method used for passing on the benefit of subsidy to school children for subsidised milk and yoghurt served with set price meals (if relevant).

³⁴ Source – a recent survey undertaken by the Intervention Board.

Table A1.2: Local authority claimants

Their responsibilities are to:

1. Ensure that all those involved in the operation of the scheme (eg, catering companies, other departments of the authority and schools) are aware of scheme rules and changes.
2. Compile accurate, composite claims which fully comply with scheme rules.
3. Perform management checks to ensure the accuracy of composite claims prior to their submission to the Agency. These must ensure that:
 - products claimed meet the technical specification and the conditions of eligibility;
 - products claimed are distributed exclusively to eligible nursery and primary school children:
 - by selling eligible milk and yoghurt as a drink or dessert at no more than the maximum price;
 - by reducing the price of set price meals where milk or yoghurt is served with them using one of the prescribed methods.
 - quantities claimed do not exceed the maximum entitlement for any individual school;
 - the total cost of products distributed relates only to those quantities claimed.
4. Carry out checks on the work of catering companies, other departments of the authority and schools, to ensure scheme compliance and claim accuracy.
5. Ensure that claim forms are signed by a senior manager with responsibility and accountability.
6. Submit timely claims to the Agency.
7. Retain the services of the Audit Commission in England and Wales and the Accounts Commission in Scotland.
8. Keep a register of claims made by independent/non-maintained and/or grant maintained schools.
9. Pay subsidy to independent/non-maintained and/or grant maintained schools.
10. Provide Intervention Agencies with all relevant claim data.
11. Permit on site inspections to their own premises and those of the schools for whom they claim.
12. Repay subsidy in cases of non-compliance.
13. Promote the scheme.

A1.1.5. Monitoring method

The following are the main monitoring features:

Operation

- Any potential claimant/managing body has to register with and be approved by the relevant Intervention Agency.
- The managing bodies and schools should keep all required documentation for a period of four years.
- All claimants must keep a record, broken down by term, of quantities of each product supplied, number of pupils and number of tutored school days for each independent/non-maintained and grant maintained school. This information will be requested by the Intervention Board in January each year in respect of the previous academic year and is required to be supplied within two months.
- The claimant bodies must obtain from all their suppliers (at least once per school year), written assurances that the milk and yoghurt supplied meets the necessary requirements. The suppliers written assurances must be retained by the independent/non-maintained or grant maintained school or local authority claimant and made available for inspection upon request.

Inspection and penalties

- IBAP or DANI undertake audits of claims and visit all LEAs and some schools.
- IBAP or DANI can withdraw claimant approval from an LEA or organisation if infringement occurs.
- Recovery of subsidy on milk and yoghurt found not to meet the requirements of the scheme may occur (eg, in 1996 IBAP recovered £0.6 million for errors presented on claim forms).

Calculation of maximum subsidy entitlement

The maximum quantity entitlement for which subsidy can be claimed by the claimant body is to be calculated for each participating school by:

- multiplying the number of school days (during which tutored education/activity takes place) in the claim period, by
- the number of eligible nursery/primary pupils on the school roll (taking no account of absences) as established annually in the Schools' Census for the Education Department;
- by the daily pupil entitlement (0.25 litres).

Examples of how the maximum subsidy entitlement should be calculated under various circumstances are shown below.

Example 1 – school where all pupils attend on the same number of days.

There are 20 school days in the claim period.

990 eligible pupils are on the school roll as established annually.

Pupil/days = 20 days in claim period during which tutored education/activity takes place x 990 eligible pupils on the school roll as established annually = 19,800.

The resultant pupil/days figure is then multiplied by 0.25 litres. This figure should then be divided by 1,000 to obtain the school's maximum entitlement in kg-litres. Claimants must record the pupil/days figure on claim forms.

Example 2 – nursery school

The nursery school caters for 50 pupils as established annually. Individual pupils attend for tutored education/activity for 8 days out of the 20 school days during the claim period.

Pupil/days = 8 school days during the claim period during which individual nursery pupils receive tutored education/activity x 50 pupils on the nursery roll as established annually = 400.

The resultant pupil/days figure is then multiplied by 0.25 litres. This figure should then be divided by 1,000 to obtain the school's maximum entitlement in kg-litres. Claimants must record the pupil/days figure on claim forms.

A1.1.6. Provision and distribution of subsidised milk products

In general, products are supplied to LEAs and schools via tendered contracts. Dairy suppliers are paid the full price for the milk by schools and they in turn are reimbursed by the claimant body which has responsibility for the claim to the Intervention Authorities.

Milk is usually distributed within schools by teachers, school caterers or sometimes older children. There are several methods of delivery used which reflect different LGA or individual school policies. Few offer a choice of product (eg, whole or semi-skimmed milk) with the majority only offering whole milk.

The main features of the different ways of providing school milk vary according to whether the education establishment is a nursery or primary school and these can be categorised as follows:

Provision of scheme milk to children in independent³⁵ nursery schools

Parents pay a fee which either includes or excludes the provision of meals. Drinking milk is supplied either in 1/3 pint cartons (189ml) or served in glasses. Up to 1/3 of a pint is in most cases provided free to children up to the age of five, the difference being paid for by the UK Government under the National Nursery School Milk Scheme (see sub-section 2.1.2). This free milk is usually supplied during playtime. Supplementary milk (not subsidised) is also generally provided during meal times for those children eating in nurseries, and this is funded by parents fees towards meals.

Provision of scheme milk to children of nursery school age but in a primary school

Children in a primary school can receive free milk up to the age of five. Whether they receive milk (free or otherwise), is dependent on the milk provision and school meal policy in their school (see below).

Provision of scheme milk to children over five in primary schools

School milk is provided at playtime in only a minority of primary schools in the UK. This is because only some primary schools provide milk for sale outside the school canteen, usually through school shops. Milk in many LEAs and schools is only provided as part of the lunch meal service, and therefore is generally only accessible to children whose parents pay for school meals or to children who receive a free school lunch (dependent on their parents being on a low income). Subsidised milk is usually available in 189ml cartons, or sometimes from a refrigerated dispenser unit or milk bar (mostly found in Scotland).

It is important to recognise that some LEAs and many schools in the UK do not offer catering services (ie, school meals) and consequently only about 40% of primary school children consume school meals. Where milk is available with school meals (and this is not always the case), this is either:

- provided free as part of the termly meal costs paid by parents, whereby the subsidy element is built into the cost of the meals (by those schools who claim it);
- sold as an individual item paid for by those pupils who want it, at a price which takes account of the subsidy (by those schools who claim it).

The largest volume of milk provided under the EU scheme in the UK is to independent nursery schools. Here pupils receive free milk and generally have access to milk, whether they eat at the nursery school or not.

A1.1.7. Up-take by schools

Since the Education Act 1980, LEAs and Grant Maintained schools are not under a duty to provide school milk (or school meals), either under the EU scheme or the UK national schemes. This means that there is considerable variation across the country in up-take of the EU and national school milk schemes by LEAs and schools. Whilst no data is recorded relating to up-take, a 1998 IBAP survey estimated that the majority (over 60%) of LEAs make use of the EU scheme. Within these LEAs, nursery school up-take of the EU subsidy was 91%, while primary school up-take was much lower, at 53%.

³⁵ ie, not linked to a primary school.

Several reasons have been identified as to why some LEAs and schools do not operate the scheme for their pupils. These include:

- administrative requirements are seen as burdensome, time consuming and difficult to manage effectively (ordering milk, collection of money, distribution of milk, supervising students drinking milk, administration of form returns) (source: Intervention Board 1998: Survey of local education authorities, claimant bodies and schools). Furthermore, errors in the completion of forms can lead to recovery of subsidy by the Intervention Authorities;
- the financial burden of having to wait several months for payment of the subsidy (during which time the cost of providing the milk at a subsidised price has to be borne by the school);
- some do not provide school meals and are unwilling to provide milk at break-times;
- it can be difficult to find dairies willing to deliver milk to schools in more remote regions and areas with little local milk production;
- there is a general lack of awareness about the scheme amongst some schools and parents. This is attributed to limited promotion and publicity;
- many LEAs and schools do not believe it is their responsibility to provide school milk or to improve the nutrition of children;
- lack of storage, dispensing facilities and refrigeration units, and general unwillingness by dairies to provide these;
- attitudes of schools, teachers and caterers are not always positive and there can be reluctance to take-up a scheme;
- some dairies are reluctant to provide milk under the scheme, and to offer a choice of products, such as whole milk and semi-skimmed milk.

The attitude of LEAs and dairies, the promotion undertaken and the provision of school meals, are believed to be amongst the most important factors affecting up-take. Additionally, our research identified a perception amongst MAFF and the Scottish Dairy Association that up-take of the scheme in Scotland is about 30% higher on average per pupil than it is in England and Wales. This higher up-take is attributed to:

- LEA and school attitudes being more in favour of school milk than their English counterparts;
- better promotion of milk and the provision of refrigerated dispensers;
- dairies being more prepared to service the school milk market than in England and Wales;
- a higher proportion of school meals eaten than in England and Wales.

A1.2. France

A1.2.1. Milk products provided under the scheme

The products provided under the school milk scheme in France are:

- pasteurised or UHT whole milk and whole flavoured milk (containing at least 90% milk), and whole milk yoghurt (Category I);
- semi-skimmed milk (Category II);
- fromage frais and processed cheese with a fat content greater than 40% (Category III);
- other cheeses with a fat content greater than 45% (Category IV);
- pasteurised or UHT raw whole milk (Category VII).

The only products not provided are Category V (grana padano) and VI (parmigiano reggiano), both being Italian cheeses.

Since 1995, France has no longer taken up the 'products used as ingredients in the preparation of meals' element of the measure mainly because of monitoring difficulties concerning proof of use of products and that the subsidy to the beneficiaries has been passed on.

A1.2.2. Eligible education establishments

All students in the following educational structures are eligible to receive milk products under the EU school milk measure:

- nursery schools;
- primary schools;
- secondary establishments.

The only excluded institutions are crèches and post secondary school education structures.

A1.2.3. Management of the scheme

France has opted to provide the subsidy to managing/claimant bodies which:

- buy milk products directly from dairies and then distribute it to pupils, either through school-produced meals or outside school meals;
- buy-in school meals from private school meal caterers, in which the subsidised milk products are included.

The managing body is therefore the legal entity that purchases the products (ie, in whose name invoices are issued and which receives the money paid by the parents of the school children). These bodies have one of three different structures:

- the municipality, where these operate the school meal catering system. Otherwise, where school catering is handled by contracted caterers, it is either:
- the school, or
- a school management association.

There are currently some 16,500 approved management/claimant bodies in France.

Dairies were not chosen to take part in managing the scheme or claiming under the scheme, for several reasons:

- the school milk market is a very small percentage of total milk usage in France, and as such is of limited interest to the dairies;
- dairies dislike the administrative requirements and the three month wait for payment of subsidies;
- most dairies perceive that they profit very little (if at all) on the sale of milk/milk products to schools;
- the French Intervention Agency, Onilait, preferred not to use dairies to operate the scheme because it felt that it would be more difficult to monitor the scheme if implemented in this way than

if schools and municipalities (who are responsible to parents and tax-payers, and who have the welfare of children in mind) administered it.

A1.2.4. Administrative procedures for managing bodies

The key requirements are:

- managing bodies must keep a daily distribution register and invoices and allow physical inspection to take place at any time;
- the management bodies must keep records for at least three years;
- managing bodies submit termly claims to Onilait (terms are defined in France as 1/9 – 31/12, 1/1 – 30/4 and 1/5 to end of school year (end of June/beginning of July));
- invoices must relate only to subsidised products and confirm the eligibility of the product for aid, and include the fat content and volume;
- invoice numbers and details are listed on claims and certified as genuine by the supplier;
- all records must be kept in a single location.

A1.2.5. Scheme operation and monitoring method

The main features of scheme operation are as follows:

Operation

- Onilait automatically invites all previously approved managing bodies to apply for approval annually.
- Onilait approves managing bodies for the coming school year.
- Onilait sends claim forms to managing bodies before the end of each term. Claims cover total quantities supplied to the managing body, including those for ineligible people (these are then declared and deducted).

Inspection and penalties

- Products will not be subsidised or may only be partly subsidised if invoices are not sufficiently clear.
- 300 inspections are carried out each year, chosen on the basis of a risk assessment. Onilait makes spot checks to make sure that the subsidy is built into the school/municipality budget for meals. This is believed to act as a deterrent to fraud.
- No minimum period of suspension has been set for serious infringements of scheme rules.

Subsidised quantity determination and categorisation of products

- Each managing body has to provide Onilait, for each term, the maximum volume of milk products on which the EU subsidy can be claimed for each school. This is to be carried out as follows:
 - for supply of eligible milk outside meals, the number of eligible children multiplied by the number of days for which they attend school each term multiplied by a quantity of 0.25 litres;
 - for subsidised milk products to be supplied during school meals, the number of eligible students each term that have school meals multiplied by the number of days at school multiplied by 0.25 litres in milk equivalent.

- Up to the start of the 1998 school year, when claiming for the subsidy each term, the managing bodies had to categorise the volumes of milk products on which they wish to receive a refund according to the following:
 - Category M (up to 1997 school year): whole milk 20cl cartons distributed to students in nursery schools;
 - Category A: whole milk in 20cl cartons not supplied under M and whole milk natural yoghurt;
 - Category B: semi-skimmed milk;
 - Category C: fromage frais and processed cheese with 40% or more fat;
 - Category D: other cheeses with a fat content equal to or greater than 45%.

The reason for this classification method is to enable the national element of aid to be accounted and claimed for.

A1.2.6. Provision and distribution of subsidised milk products

Milk is distributed either directly by dairies to schools, or to school catering companies that supply school meals to schools. At schools, it is either teachers or catering staff that distribute milk products to students in the following ways:

- *Provision of scheme products outside meals (such as break time).* These are supplied in 20cl cartons of UHT whole milk, either plain or flavoured. These are available free (being paid for by municipalities) and solely for pupils in nursery schools;
- *Provision of scheme products during school meals.* Milk products distributed during school meals and falling under the EU measure are:
 - plain and flavoured whole milk;
 - semi-skimmed plain and flavoured milk;
 - plain whole milk yoghurt;
 - fromage frais and processed cheese with at least 40% fat;
 - other cheeses with a fat content of at least 45%.

School meals are available for children in many nursery, primary and secondary establishments. Nursery students who eat school meals and receive subsidised milk products (such as cheese and yoghurts under the EU school milk scheme) are not also eligible for the 20cl carton of milk.

Only those students in primary and secondary schools that have access to school meals (20% of schools in rural areas for example do not provide school meals) and furthermore decide to have school meals can actually benefit from subsidised milk products. These meals have to be paid for by their parents, but are partly subsidised by the state. For those having school meals, milk, yoghurt and cheese are offered as part of the meal choice.

Whole milk is usually offered to primary children in 20cl cartons. In secondary schools, semi-skimmed milk is provided, and is generally obtained from a self-service refrigerated milk dispenser (of which there are several hundred in France). The dispensers hold 10 litre milk containers. There are no milk bars provided in schools in France (these are felt to be relatively expensive to operate).

A1.2.7. Up-take by schools

As is the case in the UK, it is up to each municipality to decide whether it wishes to implement the measure, and then up to each school to determine whether the EU school milk measure is of interest

to it. The large majority of big French municipalities have taken up the scheme and the most important regions in terms of up-take are Ile-de-France, Rhone-Alpes, Brittany, Loire and the North.

It is estimated by the French Intervention Agency, Onilait, that the majority of all eligible schools in France can benefit from the EU school milk aid. A total of 71,700 schools are potentially able to receive subsidised EU milk products - this is the number of schools reported by the management/claimant bodies as being under the scheme administration. Of this total, 60,200 are nursery and primary schools (the majority of which are primary schools) and 11,500 secondary schools.

The actual up-take of the scheme by schools in France is unknown, but is a long way from being 100%. There are several reasons why a municipality or a school in France may not take-up the EU school milk measure:

- at primary and secondary level, provision of EU school milk is linked to provision of school meals. The municipalities in France are directly responsible for the provision of school meals, and school canteens do not exist in all parts of France. The lack of school canteens is more prevalent in rural areas, where four out of five communities with less than 2,000 people do not have canteens in their schools;
- many municipalities do not have the funds to provide free school milk to all nursery establishments, and so several schools do not benefit from the EU scheme;
- the administrative requirements (widely considered to be very demanding) and the administrative costs at the distribution level, have to be borne by municipalities and schools;
- the three month subsidy payment period means that the financial burden of the subsidy element over this period is borne by the municipalities and schools.

A1.3. Germany

A1.3.1. Milk products provided under the scheme

In Germany, the scheme is at present restricted to products in Category I (whole milk products) and Category II (semi-skimmed milk products). Thus only the following subsidised milk products are available under the scheme:

- plain and flavoured pasteurised or UHT whole milk which can be homogenised. Sterilisation is only allowed for flavoured milk;
- plain and flavoured pasteurised or UHT semi-skimmed milk. Sterilisation is only allowed for flavoured milk;
- plain, unflavoured, unsweetened whole milk yoghurt.

Subsidy can also be claimed when sweetener or flavouring is added to the above mentioned milk products (either plain milk or yoghurt).

Germany has opted out of:

- the use of eligible products as ingredients in the preparation of meals since 1994/95;
- the provision of cheese under Categories III, IV, V and VI since the beginning of the 1994/95 school year. The main reasons for opting out of this element were low interest amongst schools,

low volume supplied under the scheme, and difficulties in monitoring whether the subsidy was being passed on to students through lower prices;

- the provision of raw milk under Category VII since June 1998. Raw milk was first offered in 1994/95 to meet the generally increasing demand for more ecologically produced milk and milk products. Since its introduction, the up-take in nurseries and primary schools has been quite uneven. This was partly due to the occurrence of EHEC infections (Enterohemorrhagic Escherichia Coli) linked to the consumption of raw meat or milk. This reduced consumer confidence in the safety of raw/untreated food and contributed to the withdrawal of raw milk from the scheme in 1998.

A1.3.2. Eligible education establishments

Subsidised milk under the EU school milk scheme is available to children regularly attending and receiving education at

- kindergartens (nursery schools);
- primary schools;
- secondary establishments and vocational schools;
- holiday camps, youth hostels or child sanatoriums.

A1.3.3. Management of the scheme

EU school milk subsidies can only be claimed by managing/claimant bodies approved by each Federal State Authority. In the vast majority of federal states, the approved claimant bodies are suppliers of milk and milk products only, and fall into one of two categories:

- dairies;
- wholesalers.

Whether a dairy or wholesaler is approved or not is determined by the State Ministry of Agriculture. Some Federal States are more restrictive than others and do not allow wholesaler involvement in the distribution of milk to schools. Where this occurs it usually reflects an unwillingness to administer the scheme via a large number of suppliers, or where a Federal State Authority wants to support regional dairies. However, as the number of dairies or wholesalers willing to act as claimants under the scheme has steadily decreased in recent years, many Federal State Authorities have been forced to become less restrictive in their application of approved criteria.

Finally, in Schleswig-Holstein schools can also be claimants. This option is available because of the rural location of many primary schools, and the lack of interest of dairies and wholesalers in supplying these rural schools. However, only a few rural primary schools make use of this scheme, because the administrative requirements of the scheme are seen as too complicated and time consuming and the volume of milk products consumed too small.

A1.3.4. Administrative procedures for managing/claimant bodies

Administration procedures are operated at a state level and distinguish the following main procedures:

- a) *Registration of education establishments.* All educational establishments receiving subsidised school milk products are first required to apply for registration and authorisation from their respective State Ministry of Agriculture and Food. Each school then obtains a registration number

and an application form which is completed and sent to the approved dairy or wholesaler that the school chooses as its supplier. It contains information of the name and address of the school, the total number of pupils (or the number of pupil/days) and the volume of milk and yoghurt required. This data is cross-checked monthly with records kept by each approved dairy or wholesaler. Additionally, schools receive a list of the maximum ceiling prices for each subsidised milk product and have to provide a written commitment not to use the subsidised milk products in the preparation of meals served to pupils.

b) Approval of dairies and wholesalers supplying educational establishments with EU subsidised school milk

Dairies and wholesalers are required to apply to be approved claimants on an annual basis (ie, they have to re-new their application each year). To become approved, they are required to make declarations to their respective State Ministry of Agriculture that they will undertake the following:

- distribute subsidised products only to children of eligible educational establishments;
- re-pay subsidies when scheme rules are found not to have been complied with;
- ensure that the delivered products meet the technical specification and the conditions of eligibility;
- ensure that the people involved in the organisation of the school milk distribution in schools are aware of the scheme rules and are notified promptly of changes which affect them;
- ensure that quantities claimed do not exceed the maximum entitlement for any individual school;
- ensure that the benefit of subsidy for the eligible milk products is passed on to school children (ie, the maximum ceiling prices are not exceeded);
- ensure that claim forms are duly signed by an authorised person in each school;
- maintain relevant commercial documents such as books, registers, vouchers, accounts and other supporting documents and keep them for at least 7 years starting from the end of the calendar year in which they were drawn up;
- provide State Ministry officials with all data and documents on request, and to permit on site inspections of their own premises and those of the schools for whom they claim;
- compile accurate composite claims which fully comply with the scheme rules;
- make sure that accurate claims are sent to the State Ministry on a monthly basis;
- promote the school milk scheme.

A1.3.5. Monitoring method

Monitoring is facilitated through the approval mechanism in each State. This includes provision for carrying out technical and management checks at regular intervals and ensuring that all those involved in the scheme operation are aware of the scheme rules. For all statistical data and additional information, the State Ministries report directly to the National (Federal) Ministry of Agriculture and Food.

Each claim for subsidy is subject to audit, and subsidy claims are sent together with a payment order to the Federal Chief Cash Office (the amount of subsidy has to be advanced by the federal budget). Subsequently, the Federal Ministry of Agriculture and Food claims the EU subsidy element from the EU Commission.

Key specific details of scheme operation and monitoring methods are as follows:

Operation

- Any potential claimant, whether it is an educational establishment, a dairy or a wholesaler, has to be registered and approved by a technical board of experts in each State Ministry of Agriculture. Dairies and wholesalers supplying schools in more than one State with subsidised school milk products have to be separately registered and approved by each State.
- Dairies, wholesalers and schools are required to keep all documentation, registers, invoices for a period of 7 years.
- All claimants must keep records, broken down by term, of quantities of each product supplied, the number of pupils, of tutored school days (usually 200) for each school. This information is requested by the Federal Ministry of Food, Agriculture and Forestry at the beginning of each year in respect of the previous academic year. The information is required by the end of January.
- In order to prove the quality of the school milk products supplied is appropriate, all supplies are subject to possible testing by an independent auditing agency which reports on a monthly basis to the Technical Board of each State Ministry. The 'audit agencies' test for fat and milk content with the testing costs falling on suppliers.

Inspection and penalties

The respective State Ministry Technical Boards may:

- audit/verify claims and visit dairies, wholesalers and some schools (costs being borne by the supplier);
- withdraw claimant approval from school milk suppliers if severe infringement occurs;
- recover subsidy on milk and yoghurt found not to meet the requirements of the scheme.

Calculation of maximum subsidy entitlement

The maximum quantity entitlement for which subsidy can be claimed is calculated for each participating school by:

- multiplying the number of school days (during which tutored education/activity takes place) in the claim period, by
- the number of eligible nursery/primary pupils on the school roll by
- the daily pupil entitlement (0.25 litres).

A1.3.6. Provision and distribution of subsidised milk products

Schools generally purchase milk from one dairy or wholesaler. Contracts between suppliers and schools are usually made for one year, although these can be extended. Changes of suppliers during a school year are only allowed in the case of bankruptcy of a supplier.

UHT-milk and sterilised milk are usually supplied to schools once or twice a month whilst pasteurised milk is supplied at intervals of once or twice a week. Due to the more frequent delivery requirements of pasteurised milk, UHT is the preferred milk type for supply by dairies.

In primary and secondary schools, milk is mainly distributed by school caretakers or janitors. School caterers, teachers, older children and parents are seldom involved.

Milk and milk products under the scheme are mainly supplied during break time, as few primary and secondary schools provide school meals in Germany. Nevertheless, milk under the scheme is supplied differently according to the educational institution:

- *in nursery schools or kindergartens*, milk is generally poured from large containers into glasses by a teacher in order to avoid the need for additional use of (wasteful) packaging. It tends to be served either with breakfast or with lunch. Parents usually pay once a week or once a month to cover the cost of milk and food their children consume;
- *in primary schools*, the caretaker or janitor usually provides each class with a pre-ordered number of bottles or cartons of milk during break time. Parents usually pay for their children's school milk one or two weeks in advance;
- *in secondary schools*, pupils can only obtain subsidised milk during break time, directly from school shops which also supply sandwiches, sweets and other soft drinks.

A1.3.7. Up-take by schools

Schools in Germany are not obliged to provide milk products or school meals, and dairies/wholesalers are not obliged to supply them with milk products if they do not wish to. Only in the state of Brandenburg is there a school law that requires pupils to be given the opportunity to drink milk.

Very few schools now provide school meals, and the provision of subsidised milk in a school depends mainly on the agreement of the headmaster, teachers and the School Parents Council and on the presence of a reliable person who will provide school milk products regularly during break times (usually the caretaker or janitor).

Up-take of the EU school milk scheme by educational establishments varies considerably across Germany, and the general trend has been one of decline. Of particular note is the difference between the former Western part of Germany and the five new Länder in the old East Germany where take-up is highest. This relatively high up-take in the East mainly reflects the past compulsory provision of school milk in the East. However, since reunification there has been a significant decline in school milk up-take in the East. This mainly reflects a complete reorganisation of the school system, the closure of many small schools and the reduction of lessons in the afternoon which in turn reduced the requirement for school meal provision. Furthermore, the closure of nearly two thirds of the former dairies in the five new Länder during the last eight years has considerably reduced the number of dairies able and/or willing to supply milk to schools.

Several reasons have been cited for the trend of an increasing number of schools, dairies and wholesalers choosing not to provide milk products under the EU scheme across the country. The main ones are:

- many dairies, wholesalers and responsible persons selling milk in schools believe that the administrative requirements to obtain subsidised school milk are burdensome, time consuming and too complicated to be effectively managed. Any error or omission in filling in forms can lead either to a recovery of a part or the total sum of subsidy by the State or Federal Ministry or to a further delay in payment;
- some dairies and wholesalers complain about the common several months delay in receiving subsidy payments. During this time they bear the cost of providing schools with milk at reduced prices;

- in order to reduce distribution cost (amounting to as much as 16.7 Pfennig per 0.2 or 0.25 litre of pasteurised milk in bottles) some dairies have introduced minimum order volumes for schools or offering (and promoting) the supply of UHT or sterilised milk for which less frequent deliveries can be made. These aspects are not liked by some schools;
- costs of administration. At many schools the administration is undertaken by caretakers which tend to be employees of the municipal authorities. As most of these authorities have sought to make savings in public expenditure in recent years this has resulted in reductions in the number of full-time school caretakers. In their absence it has often been difficult to find alternatives (eg, teachers) willing to take on the administration and dispensing of school milk. As a result some schools have withdrawn from the scheme;
- in recent years, the type of packaging has become a very important and controversial item, especially for milk products sold in schools. While many schools consider glass bottles as being more 'ecological friendly' than cartons, many caretakers or janitors complain about the preference for glass (problem of deposits, injuries from breakages, need for a storage room). It should also be noted that a municipal tax on the use of one-way (non re-useable) packaging, which increased the price for school milk in cartons by nearly 100%, and which is widely perceived to have adversely affected school milk consumption, was repealed by the Federal Constitutional Court in September 1997;
- in some schools, headmasters and teachers do not feel the nutrition of children is their responsibility. Therefore, they do not think it is their responsibility to offer milk products to children;
- there is limited awareness of the scheme amongst some schools and parents – attributed to limited promotion and publicity in schools;
- there exists a negative attitude amongst some members of State Educational Ministries, Supervisory School Authorities, headmasters, teachers, some parents and dairies/wholesalers towards the school milk scheme.

The up-take of the school milk subsidy in schools in Germany is therefore widely perceived to be significantly below 100%. No firm statistics on take-up are available, as the number of schools participating is not recorded and no surveys (that the consultants are aware of) on school participation rates have been undertaken. The 'best qualitative estimate' identified during the research was probably a maximum of 70%.

It is however important to note that the number of schools offering milk is higher than those participating in the scheme, as many schools, particularly small nursery and primary schools where milk volumes are small, offer products but do not claim a subsidy.

A1.4. Finland

A1.4.1. Milk products provided under the scheme

The products provided under the school milk scheme in Finland are:

- whole milk (3% fat or more) and whole milk yoghurt (Category I), except flavoured milk, which in Finland is not supplied to school children under the scheme;
- viili/fil with a fat content of at least 3% (Category I);
- semi-skimmed milk (Category II);
- fresh and processed cheese (Category III);

- other cheeses (Category IV);
- milk with 1% fat (no category).

Finland has opted to take-up the 'products used as ingredients in the preparation of meals' element of the measure. The only products not provided are Category V (grana padano) and VI (parmigiano reggiano), both being Italian cheeses and raw milk (Category VII).

Finland currently has a derogation to the rules governing the fat content of whole milk provided under the Scheme, allowing them to provide 1% and 3% fat content milk. The rate of subsidy for school milk with a 1% and 3% fat content is lower than for milk with a fat content of at least 1.5% (semi-skimmed) and 3.5% (whole milk), respectively. This derogation is scheduled to be removed at the end of 1999.

A1.4.2. Eligible education establishments

The educational structures that are targeted by the EU school milk measure in Finland are:

- nursery establishments (children from 3 to 6 years);
- primary schools;
- secondary establishments.

A1.4.3. Management of the scheme

The Finnish managing/claimant bodies (those which claim the subsidy from the Intervention Agency) are:

- principally, 10 dairies which supply milk products directly to schools. These dairies account for 70% of all volumes claimed under the scheme.
- *Central Municipal kitchens*. Schools in more remote areas are not supplied directly by dairies, and of these, several do not have their own kitchens. Consequently, they receive school meals and milk products from central school kitchens. About 10% of claims are made by these bodies;
- *schools in remote areas* not targeted directly by dairies but which have their own kitchens. These schools purchase milk products from local shops and account for about 20% of claims under the scheme.

Due mainly to the relative importance of milk consumption in schools in Finland (about 4% of total national milk consumption), most dairies have traditionally considered this as a market worthy of attention and time to service and most have competed strongly for a share of this milk market. As a result, the administrative and subsidy claim burden is mainly carried by dairies rather than schools or municipalities. Also, the payments made by school authorities to dairies are net of the EU subsidy.

A1.4.4. Administrative procedures for managing bodies

The key procedures for claims by approved bodies are:

Dairies:

- must deliver to, and claim for, at least five schools;
- each school can only receive subsidised products from one dairy;
- each supplier is required to apply to the Ministry of Agriculture for a one-off approval to claim subsidy;

- after being approved by the Ministry, each supplier sends in monthly claims supported by independently completed procurement forms for each school to the Ministry. The procurement form summarises products purchased by (invoice number);
- the EU subsidy claim is then paid monthly by the Ministry of Agriculture.

School/central canteens:

- apply to the Finnish Ministry of Agriculture for one-off approval to claim subsidy. As the level of subsidisation is linked to the number of pupils, significant changes to numbers of children may require the school to re-apply. The Ministry then approves each school/ central canteen;
- the maximum entitlement is based on the number of pupils on the school roll(s) on the first day of term and is confirmed when returning school approval forms;
- original receipts must be retained by each claiming body, which also complete and retain a procurement form which summarises products purchased (by invoice number);
- at the end of each autumn and spring term, each school/central canteen sends compiled claims to the Ministry of Agriculture using a procurement form. The Ministry then pays the claims.

A1.4.5. Scheme monitoring method

Key features concerning inspection and penalties include:

- incorrectly completed claim forms may be returned and aid not paid;
- 10% of the nurseries, schools and institutions which are registered under the EU school milk scheme are inspected once a year. Monitoring is carried out by the District Customs Offices and the Employment and Economic Development Centres. They control bookkeeping as well as product quality in dairy companies;
- no minimum period of suspension has been set for serious infringements.

A1.4.6. Provision and distribution of subsidised milk products

Most of the schools and the central canteens in Finland get milk products directly from dairies. Schools in remote areas either buy milk products from their local shops or are supplied by central canteens. Distribution within school premises may be organised by the canteen or via teachers and sometimes pupils are also involved.

Finnish educational laws guarantee that all pupils between the age of 7 and 19 (ie, from primary school upwards) get free lunch, which includes milk and milk products, at school. Parents pay a monthly fee for children in nursery schools. This fee covers all costs including free kindergarten lunch, during which milk products are served. Nursery children can also drink as much milk as they want throughout the day.

In most educational establishments, milk for drinking is distributed in canteens (ie, during school meals) and in some (particularly nursery schools) in the classroom (ie, outside school meals). Pupils also get milk products such as cheese and yoghurt with their school meals, though most of the cheese and yoghurt preferred by children is low fat and not covered by the scheme. Schools do not make flavoured milk available to children.

In most schools, milk is served in glasses from 1 or 1.5 litre milk cartons. Individual cartons are only used in exceptional circumstances, such as for picnics. Many large schools also provide milk

dispensers which hold 20 litre milk boxes. As school milk is provided free, vending machines for milk are not used.

Approximately 80% of schools in Finland provide at least two different kinds of milk and some even provide at least three. Children can generally choose between skimmed milk (not subsidised under the EU scheme as less than 1% fat), low fat milk (1% fat), semi-skimmed milk (1.5% fat), low lactose milk and viili/fil. No whole milk is provided as a drink to children in Finland, though some is used in the preparation of school meals. This choice is seen as an important aspect in maintaining the level of milk consumption because children generally like to drink the same milk in school as they normally consume at home.

A1.4.7. Up-take by schools

Milk/milk products are offered by all 7,254 educational establishments in Finland. However, not all these eligible educational establishments (nursery, primary and secondary) take-up the subsidies under the EU school milk measure. It is estimated that around 95% of primary and secondary schools provide products subsidised under the EU measure, and that amongst nursery schools, the up-take is about 80%. The two main reasons why up-take is not 100% are:

- staff at small nursery schools generally buy the small amount of milk and milk products required themselves and find it too time consuming and complicated to take part in the scheme;
- some primary and secondary schools provide little or no milk products with 1% fat or more (ie, they provide mainly skimmed milk products). As these are not covered by the EU scheme no claims are possible.

A1.5. Sweden

A1.5.1. Milk products provided under scheme

The products provided under the EU school milk scheme in Sweden are:

- plain and flavoured whole milk and whole milk yoghurt (Category I);
- plain and flavoured 'standard' milk and 'standard' milk yoghurt (Category I);
- plain and flavoured semi-skimmed milk (Category II);
- fresh and processed cheese (Category III);
- other cheeses (Category IV).

'Standard' milk is in effect whole milk with a fat content of 3%. This is the traditional Swedish whole milk which has been sold since the 1940s. Sweden currently has a derogation to the rules governing the fat content of whole milk provided under the Scheme, allowing them to subsidise 3% fat content milk. The rate of subsidy for school milk with a 3% fat content is lower than for whole milk with a fat content of at least 3.5%. This derogation is scheduled for removal at the end of 1999.

In Sweden, subsidy is also available for milk and milk products which are used as ingredients in the preparation of meals. The only products not provided are Category V (grana padano) and VI (parmigiano reggiano), both being Italian cheeses and raw whole milk (Category VII).

A1.5.2. Eligible education establishments

The educational structures that are targeted by the EU school milk measure in Sweden are:

- pre-school establishments (nurseries and day care centres);
- primary schools;
- secondary establishments.

A1.5.3. Management of the scheme

Currently, there are 1,432 registered claimant/managing bodies of the school milk measure in Sweden. These are:

- *288 Municipalities and 20 County/City Councils.* They claim the subsidy and undertake the administration for the state-run educational establishments, as they manage the school meal system. About 90% of the educational establishments that receive the EU subsidy are covered by these claimant/managing bodies;
- *1,079 private companies and co-operatives.* A large number of care centres and nurseries, and a few primary and secondary schools, in Sweden are run by private companies and co-operatives. They are generally quite small and only some have more than one day care centre or nursery. They claim subsidies for the milk they use under the scheme in their day centres and nurseries. About 10% of the educational establishments that receive the EU subsidy are covered by these claimant/managing bodies;
- *45 organisations* which supply milk directly to schools. Seven are dairy companies and the remainder are centralised kitchens or restaurant services. Large schools can let the milk supplier handle the administration of the school milk subsidy, rather than the Municipality or Council. This needs approval from the Swedish Board of Agriculture. About 1% of the educational establishments that receive the EU subsidy are covered by these claimant/managing bodies.

A1.5.4. Administrative procedures for managing/claimant bodies

The key procedures for claims by approved managing/claimant bodies are:

- schools, administrative authorities and suppliers must apply for one-off approval to be claimant/managing bodies;
- schools being claimed for by administrative authorities and suppliers must also be approved;
- schools or administrative authorities can elect for payment to be made direct to a supplier;
- those approved must renew their application each year and reapply if there is a major change to the circumstances previously declared;
- a separate form specifically aimed at ensuring that the maximum entitlement is not exceeded must be completed and retained by claimants. Invoices must prove entitlement of product;
- only one claim per term (January–June and July–December) is allowed by managing administrative authorities. Milk suppliers usually receive monthly payments;
- claims can be made on behalf of schools from the day of approval and must have a minimum value of 500 SEK (around £37);
- claim forms require total quantities supplied to be clearly indicated, together with volumes supplied to ineligible persons. Ineligible quantities are then deducted showing the eligible quantity claimed. Suppliers can either attach paid invoices to claims or elect to be subject to a pre-payment verification visit;
- documents must be retained for at least 10 years.

A1.5.5. Scheme monitoring method

Key features of inspection and penalties are:

- the Swedish Board of Agriculture monitors the scheme. It carries out on-the-spot inspections of school milk providers and educational institutions to minimise inaccuracy or fraud. About 10% of the institutions, selected by random sample, are checked each year;
- if the Intervention Agency finds any inaccuracies in claim forms, they judge the penalty according to the degree of fault. If an applicant's fault is minor the Intervention Agency could correct it or ask the applicant to correct it. Otherwise wrongful claims are penalised by repayment of the subsidy.

A1.5.6. Provision and distribution of subsidised milk products

Generally, milk and milk products are delivered directly to schools either by dairies or food suppliers. Small schools, nurseries or day care centres purchase the milk products from local shops. The distribution of milk within school premises is generally organised by canteen staff or teachers.

Since 1949, Swedish law requires that all pupils between the age of 7 and 19 (ie, from primary school to end of secondary school) get free lunch, which includes milk and milk products, at school. School lunches are financed by city councils/municipalities.

Parents pay a monthly fee for children in nursery schools and day care centres. This fee covers all costs including free lunch, during which milk products are served. Nursery children can drink as much milk as they want throughout the day.

Most Swedish schools have a canteen with a kitchen, and as such the storage of milk at a refrigerated temperature is not a problem. In most locations, milk is distributed from milk dispensers in canteens (ie, during school meals). In smaller schools, nurseries or day-care centres, milk is served from 1 or 1.5 litre milk cartons into glasses. As school milk in Sweden is given to pupils free of charge, vending machines for milk are not used.

Educational establishments in Sweden usually provide a choice of milk to pupils. Children can normally choose between 3% fat content milk, semi-skimmed milk and/or skimmed milk (less than 1% fat). Virtually no full fat whole milk is provided to children in Sweden.

A1.5.7. Up-take by schools

All educational establishments in Sweden offer milk and/or milk products to pupils. Table A1.3 shows the number of educational establishments that take-up the EU subsidy in Sweden. Of the total 12,664, two-thirds of these are nurseries and day-centres.

Table A1.3: Number of claimant bodies and educational establishments taking up the EU subsidy in Sweden

	Municipalities	County Councils	Companies and economic associations*	Others	Total
No. of registered claimants	288	20	1,079	45	1,432
No. of education establishments that receive the subsidy	11,228	94	1,239	103	12,664
Of which nurseries and day centres	6,797	0	1,041	44	7,882
Of which primary and secondary educational establishments	4,431	94	198	59	4,782

Notes: These are whole day care centres with a legal status and they are mainly run by parents. In Sweden, there are many of these day-care centres and they are generally quite small

Source: Swedish Intervention Board

The Intervention Board estimates that nearly all eligible primary and secondary schools provide products subsidised under the EU measure (ie, an up-take of slightly less than 100%), mainly because these products are part of the free school meal supplied to students.

However, not all eligible nurseries and day care centres take-up subsidies offered under the EU school milk measure. Actual up-take for this category of educational establishment is estimated to be about 85%. The main reason for this shortfall is that many small nursery schools and day centres generally consume only small amounts of milk and milk products and find it too time consuming and administratively demanding to warrant taking part in the scheme.

A1.6. Spain

A1.6.1. Milk products provided under scheme

The products that can be provided under the school milk scheme in Spain are:

- plain and flavoured whole milk and whole milk yoghurt (Categories I);
- plain and flavoured semi-skimmed milk (Categories II);
- fresh and processed cheese (Category III);
- other cheeses (Category IV).

It is up to each of the 17 Autonomous Communities (regional states) to determine exactly which products in the range will be available in their region. The product categories chosen are partly based on the region's particular consumption and food habits, and regional availability. The Autonomous Community of the Vasc Country, for example, only allows subsidies to be claimed on Category I and II products.

Subsidy cannot be claimed for products used as ingredients in the preparation of meals. The only products not provided are Category V (grana padano) and VI (parmigiano reggiano) and raw whole milk (Category VII).

A1.6.2. Eligible education establishments

The scheme beneficiaries are students regularly attending school centres, officially recognised by the competent authorities in education. These include the following:

- infant schools (nurseries and pre-school centres);
- primary schools;
- secondary establishments;
- special education establishments.

Holiday camps are also targeted by the scheme in Spain.

A1.6.3. Management of the scheme

EU subsidies for school milk products can only be claimed by approved managing/claimant bodies. Approval of these bodies is determined by the authorities of the 17 Autonomous Communities (AC).

An approved claimant body has to be an organisation that supplies milk and milk products to the schools: a dairy or a milk product manufacturer.

A1.6.4. Administrative procedures for managing bodies

The exact responsibilities of the approved managing/claimant supplier are determined by each AC, and then approved by the Intervention Agency. In general, these are:

- maintain accounting records specifying the product manufacturer;
- record name and address of the school centres recipient of such products throughout the school year or holiday camps and the product quantities sold;
- label (either directly or with stickers) the packaging of products subject to aid with the following text:
 - name of the product;
 - sale or distribution outside schools prohibited;
 - supplier and registration number;
- supply products in accordance with the national technical sanitary legislation and Community legislation;
- provide the following documentation:
 - technical document for the production, distribution and/or storing facilities;
 - Registration Certificate in the Food Sanitary Registry;
 - Registration Certificate in the Agricultural and Food Industry Registry;
- claims are to be made by the approved suppliers either monthly or quarterly
 - claims are made in kilograms.
 - claims must be accompanied by a certificate or receipt issued by schools for the quantities actually supplied;
- suppliers provide declarations made by the schools that they will not use products as ingredients in the preparation of meals or exceed the maximum entitlement and that products will be supplied exclusively to school children;
- the subsidy levels claimed for are to be justified through invoices and/or despatch notes made available to the competent authorities in the Autonomous Communities. Invoices should separately indicate the price of the product subject to aid, the aid level, and be supported by a proof of payment;
- be subject to any control aimed at inspecting the accounting records or the quality of products delivered.

A1.6.5. Scheme monitoring method

Key features are as follows:

Operation

- Suppliers must be approved to claim subsidy by the Autonomous Communities in which milk products are supplied. Suppliers of products in more than one AC must be approved by SENPA, the Intervention Agency, to do so.
- Administration, control and payment is undertaken by the AC.
- The competent authorities in the ACs establish, for each school year or in the event of a change in the aid volume, the maximum price to be paid by a student for the different products;
- The ACs sets maximum prices annually and when subsidy rates change.
- Aid payments for applications meeting the corresponding requirements are made by the competent authorities in the ACs within a maximum period of four months from the date of their submission.

Inspection and penalties

- The ACs perform spot checks at a certain number of suppliers and schools each year. The checks cover:
 - compliance with maximum prices;
 - availability of supporting documents including invoices;
 - compliance with maximum entitlement rules;
 - evidence of fraud.

Authorisation as a claimant may be withdrawn if regular supplier audits show non-compliance.

Appendix 2: EU milk consumption patterns, UK, France and Germany

A2.1. The UK

a) Milk and milk products purchased

Total liquid milk purchases in the UK declined by 3.8% between 1991 and 1996 (Table A2.1). Over the same period total household purchases fell by 6.9%. The household sector accounts for by far the largest share of the liquid milk market with other sectors (including catering, schools and other institutions) representing only around 17% of the market in 1996.

Table A2.1: Liquid milk market (million litres) – England and Wales

Calendar Year	Total liquid milk purchases	Household purchases		
		Total	of which doorstep	of which retail
1991	5,752	4,927	3,242	1,685
1992	5,739	4,873	2,994	1,879
1993	5,719	4,812	2,739	2,073
1994	5,680	4,740	2,420	2,320
1995	5,568	4,633	2,063	2,570
1996	5,532	4,588	1,835	2,753

Source: MMD Ltd

Against the background of a decline in consumption of milk there has been a significant shift away from whole milk and skimmed milk consumption in favour of semi-skimmed milk so that by 1994 semi-skimmed consumption exceeded consumption of whole milk (Table A2.2).

Table A2.2: Household consumption of dairy products - Great Britain

Product	Litres per head per annum ¹				
	1992	1993	1994	1995	1996
Whole milk ²	52.0	46.8	45.3	42.3	40.6
Semi-skimmed milk	39.2	42.4	45.0	46.9	48.9
Skimmed milk	11.0	11.3	10.7	10.6	7.2
Total low fat milks	50.2	53.7	55.7	57.5	56.1
Dried and other milks ³	4.2	3.9	3.9	3.7	3.6
Condensed milk ²	1.5	1.2	1.2	1.2	1.1
Dairy desserts	0.9	0.9	0.9	1.0	1.2
Yoghurt and fromage frais	6.2	6.2	6.2	6.6	6.7
Cream	0.9	0.9	0.9	0.7	0.9
Butter ¹	2.1	2.1	2.0	1.9	2.0
Cheese ¹	5.9	5.7	5.5	5.6	5.8

Notes:

1. Except kilograms per head per annum of butter and cheese
2. Including welfare and school milk
3. Litres or equivalent litres

Source: National Food Survey

Other significant consumption features include the marginal fall in consumption of cheese between 1992 and 1994 although cheese consumption has subsequently increased, consumption of dairy desserts increased by a third between 1992 and 1996, while consumption of yoghurt and fromage frais increased by 8.1%.

b) Frequency of consumption in and outside the home

For the key target age groups for school milk, key features about their frequency of milk product consumption are as follows (Table A2.3):

- 94% of UK teenagers consume at least some milk every day;
- there are differences in consumption levels between the sexes with 97% of boys consuming at least some milk compared to 92% of girls;
- boys also generally consume more milk than girls over the course of a day with nearly a quarter consuming in excess of one pint;
- compared to UK dietary guidelines that recommend that most people, including teenagers, should have three servings each day from the group comprising milk, cheese, yoghurt and fromage frais, one third of children fail to meet this target and consume less than three daily servings of foods from this group (Table A2.4). Some have very low intakes of these foods – 6% had less than one daily serving of milk and dairy products. Girls were also found to be more likely to have lower intakes of milk and dairy foods than boys;

Table A2.3: Quantity of milk consumed in the UK 1997 (daily)

Quantity of Milk	Boys (%)	Girls (%)	Total (%)
None	3	8	6
¼ pint	18	33	26
½ pint	25	27	26
¾ pint	14	11	12
1 pint	17	13	15
More than 1 pint	23	8	15

Source: NDC survey of teenagers, 1997

Table A2.4: Daily servings of milk and dairy foods in the UK 1997

Average number of daily servings	Boys (%)	Girls (%)	Total (%)
Less than 1 serving	4	8	6
≥ 1 but less than 2 servings	11	16	13
≥ 2 but less than 3 servings	14	15	14
≥ 3 but less than 4 servings	13	16	14
≥ 4 but less than 5 servings	11	15	13
≥ 5 but less than 6 servings	11	11	11
≥ 6 but less than 7 servings	9	6	7
7 or more servings	28	14	20

Source: NDC survey of teenagers, 1997

- amongst teenagers, milk is most frequently consumed with cereals, followed by as a drink on its own or as a milkshake (Table A2.5). The majority of children (67%) have milk with cereal at least once a day, but only 45% have milk on its own or as a milkshake at least once a day. About one in four children (26%) eat yoghurt or fromage frais at least once a day. Similarly, about one in three children (30%) eat cheese at least once a day;

Table A2.5: Frequency of consumption of milk and dairy foods -1997

Food	Frequency of foods consumed (%)						
	≥ 4/day	3/day	2/day	1/day	5-6/week	2-4/week	1/week
Glass of milk/milkshake	8	6	12	19	6	12	17
Milk with cereal	4	3	10	40	11	8	8
Milk in tea/coffee	14	9	14	15	6	10	8
Milk in puddings/sauces	2	1	2	9	5	11	21
Cheese	3	2	7	18	10	21	19
Yoghurt/fromage frais	3	2	6	15	8	16	18

Source: NDC survey of teenagers, 1997

- for teenagers, fizzy drinks such as cola are very popular, with 60% consuming at least one drink each day and 22% having four or more drinks each day (Table A2.6). In contrast, only 49% of children had at least one glass of milk each day, and only 11% had four or more per day. Drinks of squash were also consumed frequently, with nearly half (48%) having at least one drink daily and 16% having four or more glasses daily. Fruit juice was also consumed in large amounts - 20% of the children had three or more glasses each day. Hot milky drinks and milkshakes were consumed less often – only 23% drank them at least once a day.

Table A2.6: Frequency of consumption of all drinks amongst teenagers in the UK -1997

Food	Frequency of foods consumed %							
	≥ 4/day	3/day	2/day	1/day	5-6/week	2-4/week	1/week	None
Glass of water	19	9	11	17	6	10	10	19
Glass of milk	11	8	11	19	5	10	12	24
Glass of fruit juice	11	9	12	17	8	11	11	21
Milk drinks/milkshakes	4	3	5	11	6	10	19	42
Fizzy drinks	22	12	14	12	9	13	9	9
Fruit squash or cordial	16	10	12	10	7	8	8	30

Source: NDC survey

c) UK milk purchases by type and packaging

By type

Whereas whole milk accounted for more than half of total milk purchases in 1991, by 1996 its share had fallen by about a third to under 40% (Table A2.7). Hence, low-fat milks now account for the majority of consumption with semi-skimmed being the largest single segment (half of the total market in 1996 compared to 30% in 1991). Other types of milk, such as low lactose, represent only 1% of the total liquid milk market.

Table A2.7: Household milk purchases by type – England and Wales 1991 and 1996

Product	% of total household milk purchases	
	1991	1996
Whole milk	56.9	37.7
Pasteurised	49.1	33.5
Homogenised	3.9	1.9
Sterilised	2.9	1.6
Channel Islands	0.5	0.2
UHT	0.5	0.4
Semi-skimmed	30.2	48.3
Pasteurised	26.8	45.6
Sterilised	2.5	1.2
UHT	0.8	1.4
Skimmed	11.9	13.1
Pasteurised	7.8	7.7
Sterilised	1.0	0.5
UHT	3.0	4.9
All low-fat milks	42.0	61.5
Other types	1.0	0.9

Source: Taylor Nelson AGB

In terms of milk treatment, pasteurised milk accounts for 87.1% of total household milk purchases (a small increase in its share of the total market since 1991). The other forms of treatment include ultra-heat treatment which accounts for 6.7% of the market with the balance accounted for by homogenised and sterilised (these latter two forms of treatment are declining in importance).

By packaging

Table A2.8 differentiates retail milk sales in England and Wales by type of container. Sales in plastic containers accounted for 69.5% of total retail milk sales in 1997 followed by cartons (23.4%). Over the period 1994 to 1997 there has been an increase in the use of plastic and other containers for milk and decreases in the use of glass bottles and cartons.

Table A2.8: Milk sales by container type in shops (England and Wales)

Type and size of container	Percent of sales through grocery outlets			
	1994	1995	1996	1997
Container type				
Carton	32.3	27.3	23.4	23.4
Glass bottle	2.2	2.0	1.6	1.2
Plastic container	63.6	68.2	69.7	69.5
Other container	1.9	2.6	5.4	5.8
Container size by milk type				
Pasteurised				
1 pint	10.5	9.0	8.4	8.1
2 pint	14.1	11.2	11.3	10.6
4 pint	44.0	43.6	35.4	33.7
6 pint	11.3	13.4	13.6	14.3
0.5 litre	1.4	1.4	1.1	0.9
1 litre	3.0	4.8	6.5	6.4
2 litre	0.9	2.1	9.2	10.0
3 litre	2.8	3.1	3.5	5.2
UHT				
1 pint	-	-	-	-
0.5 litre	1.6	1.4	1.3	1.3
1 litre	8.7	8.7	8.3	8.2
Sterilised				
1 pint	0.4	0.3	0.4	0.3
0.5 litre	0.2	0.1	0.1	0.1
1 litre	0.9	0.8	0.8	0.8

Source: A C Nielsen

The vast majority of pasteurised milk is sold in Imperial measurements rather than in metric units, although the use of metric measurements is increasing. The most popular size of pasteurised milk container is four pints, although the proportion of sales of four pint containers has decreased by 23% since 1994. The main size categories for which there have been increasing sales are six pint containers, and one, two and three litre containers.

d) UK consumption and expenditure on milk and competing drink products

Milk consumption per capita in 1996 was 2.1 times higher than that for carbonated soft drinks, the nearest drink product rival (Table A2.9). This ratio has however declined since 1992, when milk consumption per capita was 2.7 times higher than for carbonated soft drinks.

Table A2.9: Household consumption of various drinks - Great Britain

Product	Litres per head per annum				
	1992	1993	1994	1995	1996
Milk	102.2	100.4	101.0	99.8	96.7
Fruit juices	11.6	12.3	12.5	12.7	13.5
Carbonated and other soft drinks	37.7	40.4	41.7	47.3	46.2
Mineral water	5.1	4.6	4.7	5.7	5.4

Source: National Food Survey and NDC

Whilst milk consumption fell (by 3.8%) between 1992 and 1996, consumption of fruit juice, soft drinks and mineral water increased by 16.4%, 22.5% and 5.9% respectively.

For drinks consumption within schools, Figure 2 shows that in 1990, milk accounted for 25% of drinks consumed by school children, similar to consumption levels for carbonated drinks, but well below squash consumption levels. By 1996, the proportion of total consumption accounted for by milk had fallen to 17%, but increased to 27% and 37% respectively for carbonated drinks and squash.

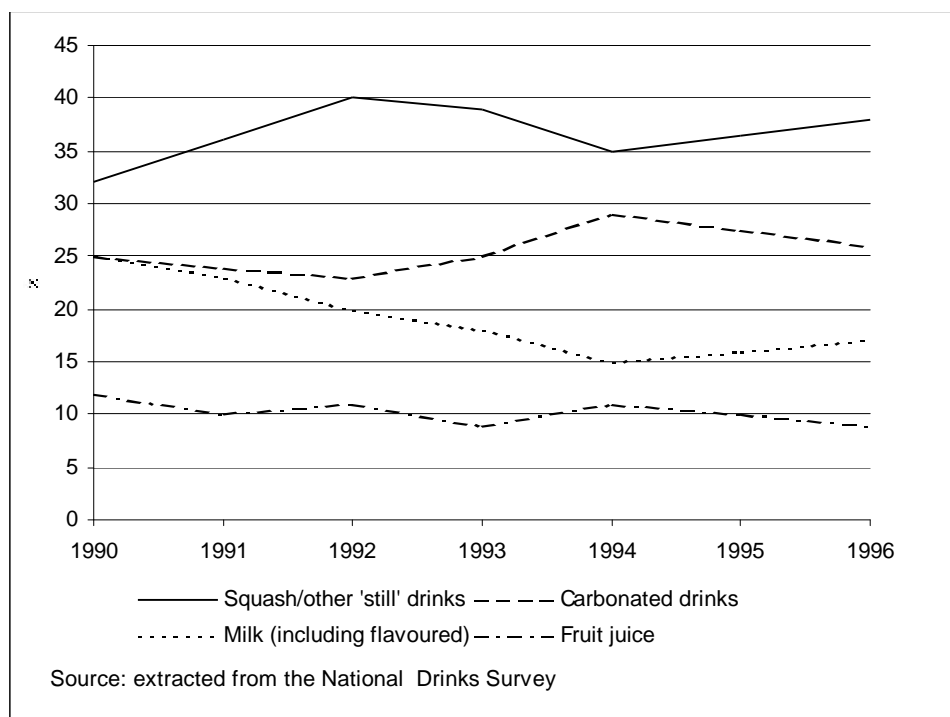


Figure 2: Drink trends at UK schools 1990-96

In terms of average household expenditure on milk and soft drinks, expenditure on liquid whole milk (per week) declined by 13% between 1994 and 1996 (table A2.10), whereas expenditure on semi-skimmed milk increased by 6.6%, expenditure on skimmed milk declined by 33% and spend on soft drinks increased by 16%.

Table A2.10: Average household expenditure – milk and soft drinks - Great Britain 1994-96

Product	Pence per head per week			% of total food expenditure		
	1994	1995	1996	1994	1995	1996
Whole milk ¹	45.2	42.3	39.2	3.05	2.70	2.38
Semi-skimmed milk	45.2	47.1	48.2	3.05	3.01	2.93
Skimmed milk	10.3	10.3	6.9	0.70	0.66	0.42
Soft drinks	43.8	49.2	50.8	2.95	3.15	3.09

Notes:

1. Including school and welfare milk
2. Dried milk, skimmed milk powder, instant milk powder, infants milks, goats' milk, sour milk

Source: NFS

A2.2. France

a) Milk products purchased

Liquid milk consumption in France was about 4.4 million tonnes (table A2.11) in 1997. This represents a decrease in consumption of 2.8% between 1991 and 1997. In contrast, consumption of

all other milk products increased between 1992 and 1997 (eg, by 5% and 14% respectively for cheese and yoghurt). Within cheese, this increase in consumption has predominately been of pasteurised hard cheese, with consumption of fromage frais and soft cheese remaining fairly stable.

Table A2.11: French milk and milk products consumption, 1992-97

'000 tonnes	1992	1993	1994	1995	1996	1997
Liquid milk	4,504.0	4,471.0	4,390.8	4,426.0	4,400.0	4,422.0
Cheese	1,306	1,315	1,321	1,346	1,360	1,370
Cream	190.5	196.0	202.0	207.0	215.0	225.0
Butter	470.0	472.0	478.0	480.0	485.0	485.0
Yoghurts	989.2	999.9	1,025.7	1,056.0	1,081.5	1,117.0
Desserts	360.0	378.0	384.0	390.0	402.0	410.5

Source: Cniel

b) By age group

Table A2. 12 breaks down milk product consumption by age group. This illustrates that milk tends to be consumed at above average levels by those aged 17 and under with babies under two years of age being the largest consumers.

Table A2. 12: French milk product consumption by population group, 1994

Index base 100 = total consumption	Babies <2 years	Infants 2-11 years	Adolescents 12-17 years	Boys 2-17 years	Girls 2-17 years	Adults 18-55 years	Seniors 56+ years
Milk	221	130	111	129	117	80	81
Butter	44	91	99	93	95	107	106
Cheese	39	84	92	84	89	109	125
Yoghurt	86	110	119	117	107	95	95
Desserts	63	126	133	135	121	89	85
Total milk products	89	104	106	106	103	97	109

Source: Baromètre Cidil 1994

In contrast, butter and cheese are consumed at above average levels by adults, especially those over 56 years of age. However, for yoghurt and desserts consumption is highest amongst younger age groups.

c) Consumption frequency

In terms of consumption frequency, Figure 3 shows that the number of times milk is consumed per week generally declines with age. It may also appear that consumption preferences change with age. Additionally, males consume milk with greater frequency than females up to the age of twenty, after which females tend to be more frequent consumers.

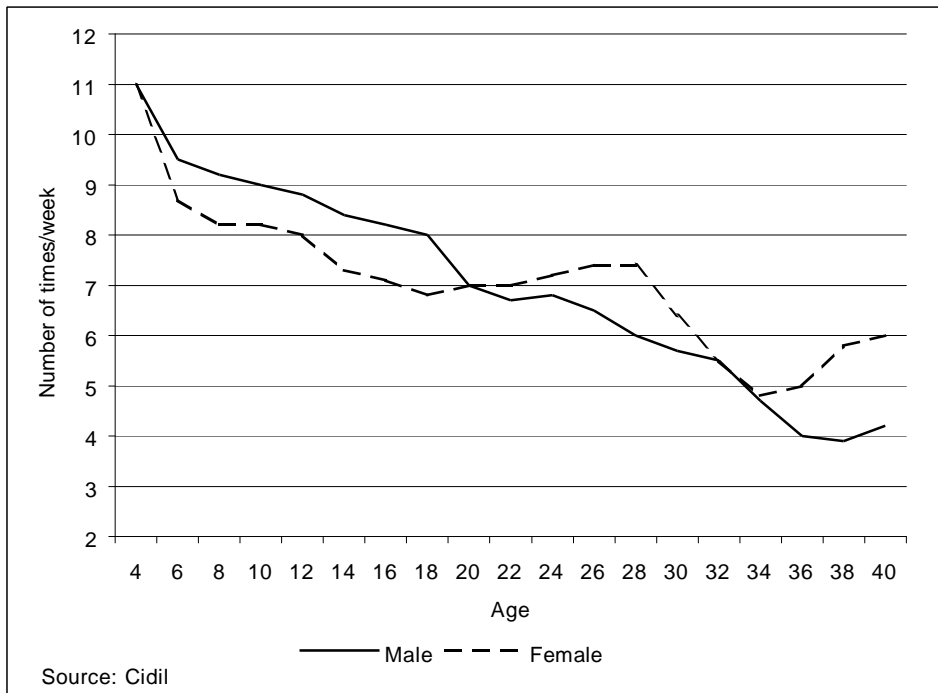


Figure 3: Number of times milk is consumed in a week, 1994: France

In contrast to liquid milk consumption, frequency of cheese consumption per week generally increases with age (Figure 4). This may suggest a change in cheese preference with age. By sex, males tend to consume cheese with greater frequency than females from the age of sixteen.

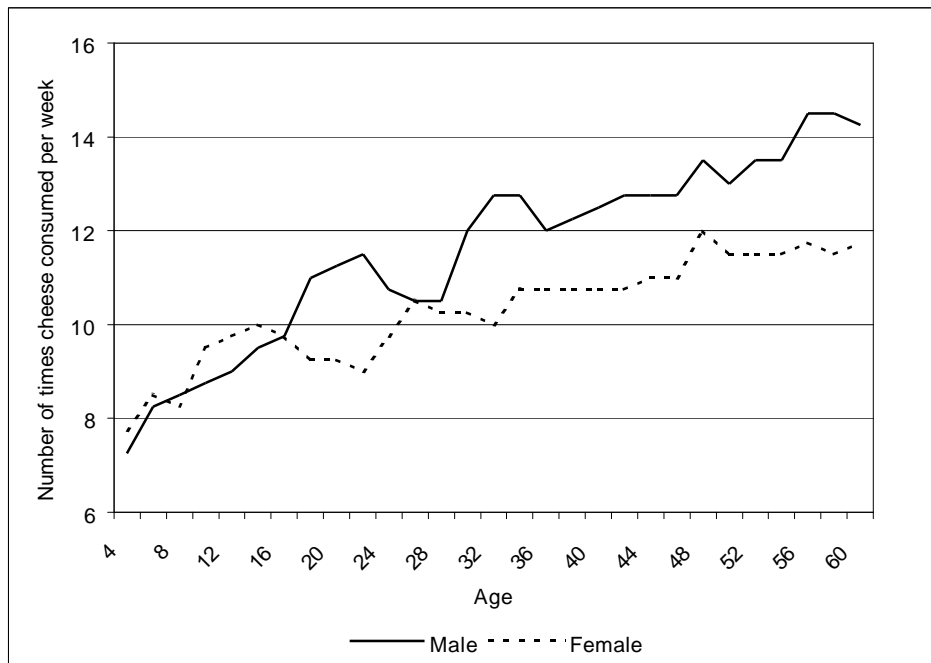


Figure 4: Cheese consumption by age and sex in France, 1994

c) *Frequency of consumption in and outside the house*

A profile of the mode of milk product consumption can be drawn from the information Table A2. 13. This suggests that about 80% of French consumers take milk or yoghurt with a meal each day and 95% take cheese with a meal each day. Liquid milk is mainly consumed at breakfast time, while cheese was mostly eaten at lunch and dinner time.

Table A2. 13: Structure of milk product consumption by meal in France, 1994, %

	% of consumers	of which breakfast	of which lunch	of which tea	of which dinner	of which any other time
Milk	81	70	5	13	6	6
Cheese	95	3	44	4	45	3
Yoghurt	79	9	35	11	40	5

Source: Cidil 1994

Milk purchases by type and packaging

By type

Within a profile of declining overall liquid milk consumption (-3.8% between 1992 and 1997 Table A2.14), semi-skimmed milk accounts for nearly three-quarters of total consumption. Since 1992, consumption of semi-skimmed milk has remained fairly stable whilst consumption of whole milk has declined and skimmed milk increased.

Table A2.14: Liquid milk type consumption per capita in France, 1992-97 (kg/head)

	1992	1993	1994	1995	1996	1997
Whole	20.1	19.1	17.3	16.7	15.6	14.7
Semi-skimmed	54.4	54.6	54.9	55.9	54.2	55.2
Skimmed	3.0	3.0	2.6	2.6	4.6	4.7
Flavoured	1.0	0.9	1.0	0.9	0.9	0.9
Total	78.5	77.6	75.8	76.1	75.3	75.5

Source: CNIEL

In terms of milk treatment, UHT milk accounts for 84% of total liquid milk purchases (Table A2.15: a small increase in its share of the total market since 1992). The other forms of treatment include pasteurised and raw which account for about 10% of consumption (declining share) and sterilised which accounts for about 5% of total consumption (small increase in share).

Table A2.15: Evolution of purchases of liquid milk by treatment in France 1992-95, %

	1992	1993	1994	1995
Long life (UHT)	82.2	83.3	83.8	84.0
Pasteurised and raw	12.5	11.4	10.3	10.0
Sterilised	4.7	4.7	5.1	5.0
Other	0.6	0.6	0.8	1.0

Source: Cidil/Secodip

By packaging

The authors were unable to identify any data on milk sales by type of packaging. However, the limited statistics available show that the vast majority of liquid milk in France is sold in containers of less than

2 litres. Most of the milk is sold in cartons, although in recent years purchases of liquid milk in plastic containers has increased.

Consumption of milk relative to competing products

In 1992, consumption of liquid milk was marginally higher than that of mineral water, and nearly double that of carbonated drinks and cordials (Table A2.16). However, since 1992 milk is the only drinks product for which consumption has declined. Mineral water is the most consumed drink in France (13% higher consumption than milk in 1996).

Table A2.16: French consumption of milk and alternative drinks 1992-96 (million litres)

	1992	1993	1994	1995	1996	96/92 change
Total liquid milk	4,504	4,471	4,390	4,426	4,400	-2.3%
Mineral water	4,444	4,646	4,810	5,007	4,970	+11.8%
Carbonated drinks and cordials	2,298	2,306	2,314	2,332	2,352	+2.3%
Fruit juices and nectars	679	742	805	867	844	+24.3%

Source: Cidil, RTS Associates

Also, whilst milk consumption remains higher than consumption of carbonated drinks, cordials and juices, consumption of these products has increased since 1992, most notably for fruit juices (Table A2.16).

A2.3. Germany

a) Milk products purchased

The German market for milk and milk products is characterised by a decline in milk and buttermilk consumption between 1992 and 1997, and increased consumption of yoghurt, cheese, cream and fermented milk products (Table A2.17).

Table A2.17: German consumption of milk and milk products 1992-97 ('000 tonnes)

	1992	1993	1994	1995	1996	1997
Total liquid milk	5,183	5,046	5,167	5,286	5,146	4,992
Cheese	1,473	1,489	1,565	1,620	1,645	1,668
Fermented milk/milk products	1,742	1,675	1,744	1,798	1,887	1,905
Yoghurt	917	914	1,014	1,049	1,074	1,105
Curd/fresh cheese	646	646	687	723	706	715
Cream	564	570	591	608	631	634
Buttermilk	225	219	220	196	172	189

Source: ZMP Bilanz Milch 1998

The main areas of consumption expansion have been of yoghurt (+20.5%) and cheese (+13.2%).

b) Frequency of consumption in and outside the house

Key points to note concerning the age, frequency and location of milk purchases in Germany are:

- two thirds of German households regularly drink milk, with consumption highest amongst children between the age of 6 to 11. People aged between 30 and 40 drink least of all (source: GFK Household Panel, 1996);
- liquid milk is mainly consumed as a drink at supper. Children also tend to drink plain or chocolate milk at breakfast or have milk with cereals. Some Germans also drink milk as a refreshment

between meals, although at work, mineral water, coffee (with milk), fruit juices, tea and soft drinks are preferred drinks;

- dairy product consumption outside the home is estimated to account for between 20 and 40% of total dairy product purchases. This varies by product (30% for liquid milk, 20% for cheese and 40% for yoghurt: source CMA, 1996).

c) Milk product purchases by type and packaging

By type

Liquid milk is mainly consumed as whole milk (66%) and semi-skimmed milk (29%), the remainder being accounted for by flavoured milk (figure 5). However, between 1992 and 1997, the consumption of whole and semi-skimmed milk declined by 12% and 6% respectively. The only milk product to show any increase in consumption was flavoured milk, the consumption of fermented milk, plain and other yoghurt also increased between 1992 and 1997.

In terms of milk treatment, UHT milk is the preferred form in Germany accounting for 63% of the liquid milk market in 1997 (Table A2.18). This share has increased from 56% since 1992 and has been at the expense of pasteurised milk, which has declined in importance from 65% to 37% (1992-97).

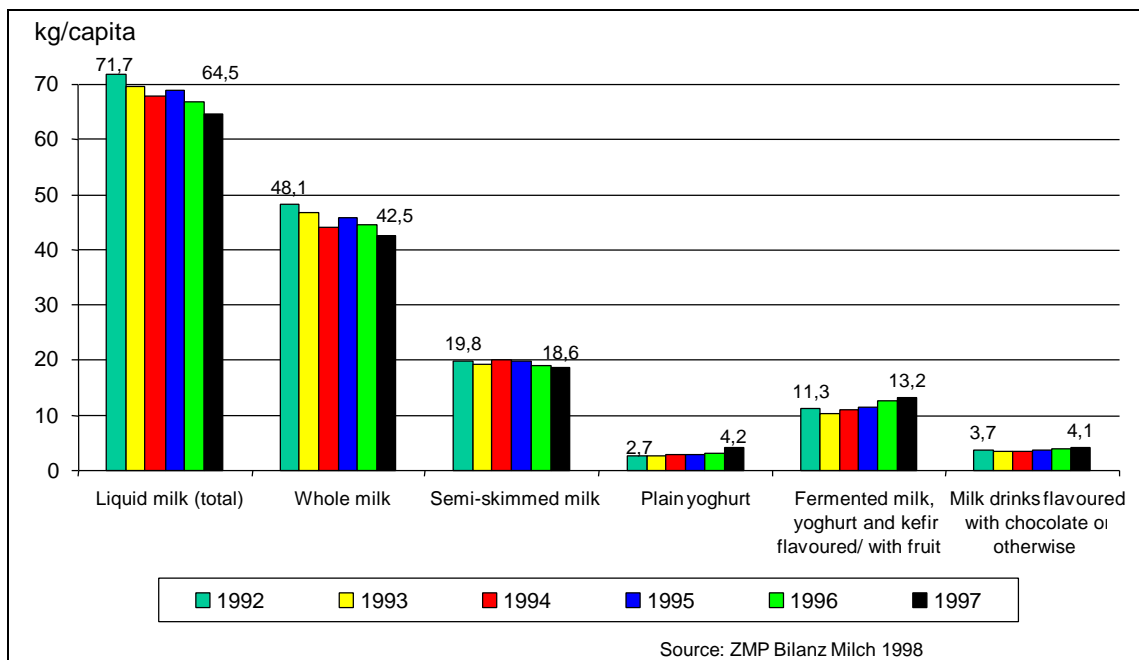


Figure 5: Per capita consumption of milk by type in Germany (kg), 1992-97

Table A2.18: Production of liquid milk in Germany by treatment, 1992 to 1997 ('000t)

	Pasteurised milk	UHT milk	Sterilised milk	Total liquid milk
1992	2,276	2,955	15	5,242
1993	2,173	3,067	14	5,255
1994	2,171	3,255	11	5,437
1995	2,256	3,338	9	5,603
1996	2,171	3,414	24	5,613
1997	2,057	3,441	6	5,503

Source: ZMP Bilanz Milch 1998

By packaging

Sales of milk in carton boxes dominate German retail milk sales (62% of sales in 1996) (Figure 6). The remainder was accounted for by plastic bags (21%) and returnable bottles (16%). In recent years however, there have been some significant changes in sales by packaging with sales in bottles having declined by a third whereas sales in 1 litre plastic bags have increased from 2% in 1993 to 21% in 1996.

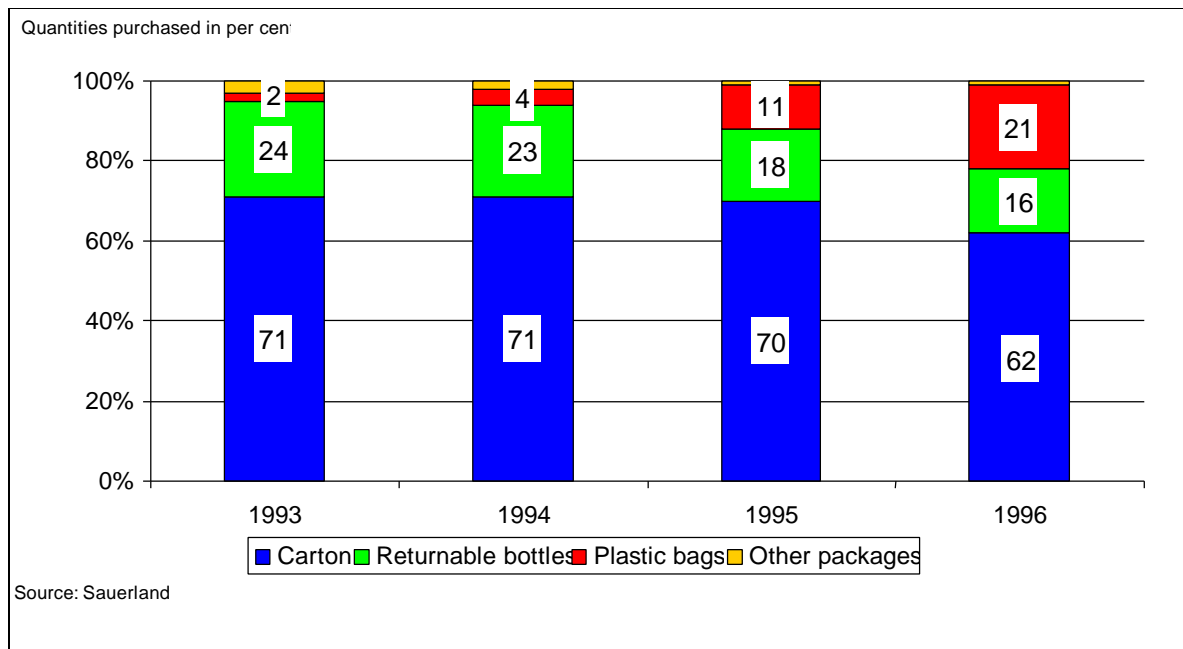


Figure 6: Development of German milk sales by type of packaging, 1993-96

d) Consumption of milk relative to competing products

Germany is the largest carbonated soft drinks market in the EU and consumption of carbonated and other soft drinks (such as iced tea) was significantly higher than consumption of liquid milk (Table A2.19). However, mineral water is the main drink consumed. Fruit juice is the only drink product with a lower per capita consumption than milk.

Table A2.19: Per capita consumption of milk and alternative drinks in Germany (kg)

	1995	1996	1997
Total liquid milk	69.0	66.7	64.5
Mineral water	97.9	96.7	101.7
Carbonated and other soft drinks	93.1	92.8	95.6
Fruit juices, including fruit nectars and vegetable juices	40.7	41.1	41.5

Source: ZMP Bilanz; Ifo-Institute, Getränkeverbrauch in Deutschland

Milk was the only drinks product to exhibit a decline in per capita consumption between 1995 and 1997 (by 6.5%). In contrast, consumption of carbonated soft drinks, mineral water and fruit juice increased by 2.6%, 3.9% and 2% respectively.

Information relating to the profile of who drinks what can be drawn from GFK household panel data. This shows that mineral water is mainly consumed by adults with the highest incidence of fruit juice consumption and of soft drinks being amongst younger elements of the population.

Appendix 3: Milk promotion: educational role in improving nutrition

In this section a brief overview is presented of the underlying link between milk and milk product consumption and improved nutrition amongst the younger age groups of the population. This acts as a base against which educational and promotional activities to encourage milk consumption are compared. The analysis does not contain any new primary research, being limited to a brief review of existing literature.

A3.1. Overview of milk and nutrition amongst the young

Good nutrition is widely perceived to be the cornerstone of good health and diet in childhood. It is especially important for several reasons:

- children need sufficient nutrients and energy to meet the demands of growth and development. Demands for nutrients such as protein, calcium, iron and zinc are relatively high, and adolescents require quite large amounts of the B vitamins – thiamin, riboflavin and niacin;
- approximately 45% of the adult skeleton is laid down during adolescence. Retention of calcium in adolescence averages 160mg per day, but at the peak of the growth spurt it is estimated to be about 200 mg/day in girls and 300mg/day in boys;
- to some extent, eating habits established during childhood, adolescence and early adulthood dictate the type of diet consumed throughout later life. It is important, therefore, that during school years, children and teenagers become accustomed to eating a healthy and balanced diet;
- some of the potentially preventable diseases prevalent in European society may, in part, be linked to eating patterns established much earlier in life (eg, dental disease, coronary heart disease, osteoporosis, anaemia, obesity and certain forms of cancer).

Although no food is a complete diet in itself (except breast milk for the first few months of life), cows milk contains nearly all the constituents of nutritional importance to man. As well as providing calories which are essential for growth, milk also provides a wide range of nutrients which are well utilised by the body – for example the calcium needed for strong and healthy bones. These attributes are briefly detailed below:

- milk contains a wide range of nutrients, essential for growing children – in particular, milk provides energy (calories) and is a good source of protein, calcium, zinc and vitamins A (whole milk only), B₂ (riboflavin) and B₁₂. Milk also makes a valuable contribution to intakes of iodine, niacin (a B vitamin) and vitamin B₆. Other minerals present in moderate amounts include selenium. Vitamins A and D are contained in the cream fraction; they are therefore present at higher concentrations in the higher fat milks;
- skimmed milk contains only traces of these vitamins. Conversely, the other constituents of milk (the protein, carbohydrate, minerals and water-soluble vitamins) are present in slightly higher quantities in skimmed and semi-skimmed milks. Skimmed and semi-skimmed milks are in fact lower in the fat-soluble vitamins – A and D – and also in energy (calories), but have a slightly higher protein and calcium content than whole milk;
- milk is a nutrient dense food – the amount of nutrients supplied by milk is high in relation to its calorie content. Milk is therefore a particularly valuable food for children, whose nutrient needs are high in relation to their calorie needs;

- milk is one of the richest sources of calcium, and calcium in milk and in other dairy products, such as cheese and yoghurt, is better absorbed by the body than calcium from some other foods. The reason for this is that milk and dairy products contain a favourable balance of calcium, magnesium and phosphate, plus lactose (milk sugar) which, together with digested milk protein, make absorption of calcium easier. Calcium is an essential nutrient which must be provided regularly in the diet. It is vital for the structural integrity of the skeleton and of teeth. There are considerable volumes of medical evidence to indicate that the achievement of peak bone density at the end of the growth period is greatly assisted by consumption of a diet that provides adequate amounts of calcium. It has been shown that a 1% increase in peak bone density translates into a 12% reduction in osteoporosis risk;
- equally important is the role of calcium in regulating various metabolic processes such as contraction and relaxation of muscles, especially the heart muscle, blood clotting and in the transmission of impulses in nerve cells;
- milk is kind to teeth – milk contains a type of sugar (lactose) which does not harm teeth. Lactose is, compared with table sugar (sucrose), less cariogenic to teeth and relatively free from sweetness. Tooth decay occurs when bacteria present on the tooth surface ferment sugars provided by the diet, producing acid as a by-product which attacks the enamel on teeth. It is thought that protein in milk helps buffer any acids produced by bacterial digestion of lactose at the tooth surface. In addition, milk provides calcium and other minerals needed to repair the effects of the early stages of acid attack (re-mineralisation of enamel);
- milk contains considerably less fat than many people assume 4g/100g (4%). Semi-skimmed milk typically provides 1.8% and skimmed milk less than 0.1%. About 28% of the fat in milk is monosaturated (as milk provides the same fatty acid contained within olive oil). Milk also provides small amounts of essential fatty acids.

Overall, milk and milk products are widely perceived to make a valuable contribution to children's health. Due to the important contribution of milk and milk products to nutrient needs, there is considerable medical evidence that limited up-take could be detrimental to the nutritional needs of some children. Furthermore, the alternative drinks to milk are not as beneficial (table A3.1).

Table A3.1: The nutrient content of milk compared with other drinks

	Calories (kcal)	Calcium (mg)	Protein (g)	Vitamin B ₁₂ (ug)	Riboflavin (mg)	Vitamin C (mg)
Whole milk	136	238.0	6.6	0.8	0.36	2
Semi-skimmed milk	95	244.0	6.8	0.8	0.39	2
Orange juice	76	24.0	1.2	0.0	0.04	100
Carbonated drinks	78	8.0	Trace	0.0	0.00	0
Squash	43	3.2	Trace	0.0	Trace	Trace

Source: NDC

The vitamin C in fruit juice helps to absorb iron, however, fruit juice contains a poorer provision of nutrients than milk and is considered damaging to teeth if consumed in large amounts. Carbonated soft drinks and squash at best provide little nutrition and at worst can damage teeth, particularly if consumed frequently or between meals.

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BLE

BMELF

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