Swedish University of Agricultural Sciences
Department of Economics
P-O-Box 7013
S-750 07 Uppsala
Sweden

Organisational Models for Agricultural Co-operatives

A Comparative Analysis of the Irish Dairy Industry

Patrik Gunnarsson

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Supervisor: Professor Jerker Nilsson

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Summary

The aim of the thesis is to study *the effects that different financial solutions may have on the organisational mode of Irish dairy co-operatives*. Membership, marketing and management are examined in four different enterprises. These areas are examined using the agency theory and property rights theory. Glanbia Group PLC, Golden Vale PLC and Kerry Group PLC were all former traditional co-operatives transformed into Public Limited Companies (PLCs) in the 1980s. Dairygold remained a traditional co-operative. The environmental conditions of the Irish dairy sector are studied in order to better understand the accomplished changes into PLCs.

European co-operative dairy processors endeavour to expand their business operations internationally and into markets for value-added products. The organisational structure and the financial capability of the co-operatives confine investments in such businesses. *External investors* could be necessary in order to raise sufficient capital. The Irish dairy processors have such experiences.

The findings show that the Irish dairy farmers are acting on a "sellers market". The milk-quota regime, together with the intervention system, are guaranteeing the dispose of the farmers' milk to a satisfying profit. This combined with a large number of processors and a transparent price system implies that the farmers do not perceive any *market failure*. The farmers have small incentives in organising the processing of their milk vertically in co-operative firms according to the *transaction cost theory*.

The result of the interviews suggests that Dairygold, the traditional co-operative, plays an important role as *competitive yardstick* regarding the milk price paid to farmers. Notwithstanding, the substantial amounts of unallocated capital and the international businesses suggest that the patron role and investor role of the members are weak. This creates serious agency problems. Consequently, Dairygold could be considered as a *degenerated co-operative*.

Glanbia and Kerry could be considered as *entrepreneurial co-operatives*. The introduction of tradable shares in the PLC-part of the organisation has better defined the *property rights* and removed the *agency problems* associated with traditional co-operatives. However, the agency problems have remained within the farmers' new co-operative societies. The reason is the substantial amount of unallocated capital in that part of the organisation.

Golden Vale quoted the whole enterprise on the stock exchange market. The farmers in the original geographical area of where the firm is located retained control of some parts of the primary processing. Golden Vale could be considered as a *combination co-operative*. The organisation is not associated with any agency problems characterising traditional co-operatives.

There is no conflict between the external investors and the milk suppliers in the PLCs regarding the milk price, due to a *competitive market structure*. For the same reason the farmers' *formal influence* of the PLCs is of subordinated importance.

The introduction of tradable shares in the PLCs has made them more *market oriented*. It has opened the possibility for the PLCs to act from an organisational point of view and develop the potential of the skills and competencies of the enterprises. Dairygold is much more *producer oriented*.

The presence of a share price allows the PLCs to use a *senior management remuneration* system that give managers clear incentives of acting in the interest of the shareholders. The transformation into PLCs has probably increased the possibilities of recruiting managers from outside the "co-operative sphere". The usage of *external experts* on the boards of directors in the PLCs is enhancing the possibilities of finding competent and skilled directors.

Contents

1 Introduction

Almost everywhere in the world, Irish dairy products can be found. Dairy firms pursue growth on international markets due to favourable natural conditions and a relatively small domestic market. The Irish dairy industry has during the past ten years successfully expanded its businesses internationally, outside the green island of Ireland. The three largest dairy processors have showed a considerable increase in their turnover. The three enterprises; Glanbia Group PLC, Golden Vale PLC and Kerry Group PLC have enhanced their sale by three to five times their sales twelve years ago. They have also successfully diversified their businesses into the areas of food ingredients and meat processing.

Consumers in the western countries are nowadays generally more demanding. In order to meet these demands, dairy production has shifted towards products that provide higher added value.

There is a considerable concentration trend in the European retailing sector, resulting from the needs to achieve operating efficiencies. Combined with the trend of private labels it is a threat to manufacturers of dairy products.

The dairy policies in Europe are gradually becoming more liberalised and the future negotiations of the WTO (World Trade Organisation) will probably further reduce the impact of certain political arrangements on the dairy sector. The general trend of internationalisation and liberalisation has put hard competitive pressure on the European dairy industry.

These forces mentioned above are driving the dairy industry to be more market oriented. The processing firms endeavour to expand on international markets, on markets for value-added products and they are expanding in order to reap economies of scale. Venture capital is needed in order to accomplish investments in the aforementioned areas. However, the organisational structure of the traditional co-operatives, common in the European dairy sector, does not seem to be constructed for such ambitions. The members of the dairy co-operatives are not able to raise sufficient venture capital. External investors could then be necessary in order to finance substantial investments of the dairy co-operatives. The aim of this thesis is to examine the Irish experiences of external venture capital. The European traditional co-operatives most likely have something to learn from the experiences of the Irish dairy co-operatives.

1.1 Problem

Intending to enhance profitability, agricultural co-operatives expand their businesses downstream in the processing chain and into new markets on an international basis. Financing such investment entail a demand of more venture capital. However, problems arise in traditional agricultural co-operative firms concerning the financing of new investments. The profits of co-operative firms and the farmers' ability to finance larger investments are generally not sufficient. The traditional co-operative model is generally not adapted to the current economical environment as the governance and organisational structures of traditional co-operatives have some inherent problems. These problems become obvious when co-operative firms approach value-added production and expand the business onto international markets. The financing mode is the most crucial factor influencing the organisation of a co-operative firm. The subject considered in this thesis deals with the problem; how traditional

co-operative firms can find new organisational solutions in order to be organised in accordance with current and future economic conditions. The ability to grow on new markets is confined by the contribution of members' capital, consolidation of internal profits and the organisation of the traditional co-operative. This makes a change in the organisational model necessary. A possible solution is the adoption of tradable shares and use of external venture capital, i.e. people investing money without any interest as supplier to the co-operative. The experiences of external financing of co-operative firms are very demarcated in Europe. However, Irish dairy co-operatives have been using external financing since 1986 in order to make product development and international expansion possible. The three largest Irish dairy co-operatives, Kerry Group, Glanbia[1] and Golden Vale, were partly introduced on the Dublin stock-exchange market during the period 1986-90. They have chosen three different financial models, which influence the organisation of the firms in different ways. The long-term effects will most likely be visible, as the enterprises have been financed according to these models the past nine to twelve years. The fourth biggest dairy-enterprise, Dairygold, is still using the traditional co-operative model and is therefore compared with the others.

1.2 Objectives

The objective in this thesis is to study the effects that the different financial solutions may have on the organisational mode of the Irish dairy co-operatives. For understanding the background of the accomplished changes, former and present economical and environmental conditions are studied. Different areas of the co-operative organisation are examined, where the choice of financial model probably influences the elaboration of them:

- Membership - the members' position in the relationship with the co-operative firm.
- Management - the behaviour and performance of the management.
- Marketing - the firm's adoption of the market demand and the degree of investments concerning i.a. internationalisation.

Four Irish dairy-firms are included in the study, as mentioned above, all using different financial models. Three of them are financed with both farmers' and external investors' capital, the fourth solely with farmers capital. They are examined according to the areas of the aforementioned "3Ms" and, subsequently, the effects of the four different financial models of the co-operatives are compared.

1.3 Methodology

Agricultural co-operatives are described and analysed using appropriate theories in the field. The neo-classical theory and transaction cost theory explain the existence of co-operatives. The agency theory and the property rights theory emphasise the problems associated with the co-operative organisational form. These theories are applied in this thesis to deduct different co-operative organisational models appropriate for varying economical circumstances. Four different models together with a combination of these models are deducted using the theories.

[1] Formerly Avonmore Waterford Group PLC. The firm is referred to as Glanbia PLC in the thesis. With the exception of the interview-answers, as the interviews were conducted in 1998, before the firm changed its name in 1999.

The theoretical models are applied in order to analyse and compare the former and current organisational models used by the Irish dairy co-operatives. Primary and secondary sources of data were utilised in collecting the information required.

Primary data: All the primary research was conducted in Ireland on the Irish dairy industry. The Centre for Co-operative studies at University College Cork (UCC) was the base from which the accumulation of data was accomplished. Questions were deducted from the theoretical co-operative models. A qualitative approach with help of personal interview technique was used to gather the primary data required. In-depth interviews give good opportunities to study the effects of the changes of financial models within the studied organisations. The method offers the opportunities to get close to what the organisational members perceive as relevant changes. The interviews were conducted with key-personnel in the dairy co-operatives and external experts on issues regarding dairy industry and co-operatives. The interviewees were selected with the guidance of the staff at the Centre for Co-operative studies, UCC, and represent the dairy sector from different perspectives.

Using a qualitative research method one should be aware of the risk that the fallacy of findings may be distorted by the values of the researcher. It must also be acknowledged that the subject of the study may influence both interviewer and interviewee. After reviewing the literature, an interview framework was drawn to elaborate the areas that ought to be covered in the interviews. The interviews followed a predesigned structure where the interviewees were basically asked the same questions, slightly deviating as they represented different organisations and competencies. Eleven interviews were conducted. All interviews were recorded.

Secondary data: The interviews conducted were completed with secondary data. This data included such items as enterprise literature, annual reports, stock market documents for Irish co-operatives, newspaper articles and scientific articles and surveys.

1.4 Limitations

This thesis focuses mainly on marketing co-operatives. However, the theories and the findings of the study is in general terms applicable to supply co-operatives. The theory-section is limited to traditional agricultural co-operative models that have made or intend to make considerable investments in value-added production and/or try to expand on international markets. Small scale co-operatives or niche market co-operatives are not considered in this thesis. In other words, the focus of the theory is on co-operative firms intending to make investments using contribution of external capital. The Irish firms in the examination all operate to a substantial magnitude in the dairy industry, produce value-added products and carry on international businesses. The remaining Irish co-operatives are no large enough actors on the market to be of current interest.

1.5 Structure of the report

The chapters correspond to each other according to figure 1.

In *chapter 2* the structure of co-operative organisations is described using economic theories. The chapter is divided into five parts. In the first part different definitions of co-operatives are presented. The second and the third part explain why co-operatives arise using a neo-classical approach and the transactions cost theory. The fourth part gives a picture of the agency theory and how this theory may be applied to the co-operative structure. The agency theory delivers critiques against the co-operative structure claiming that some inherent problems exist. The origin of these problems is derived using the property rights theory in the fifth part.

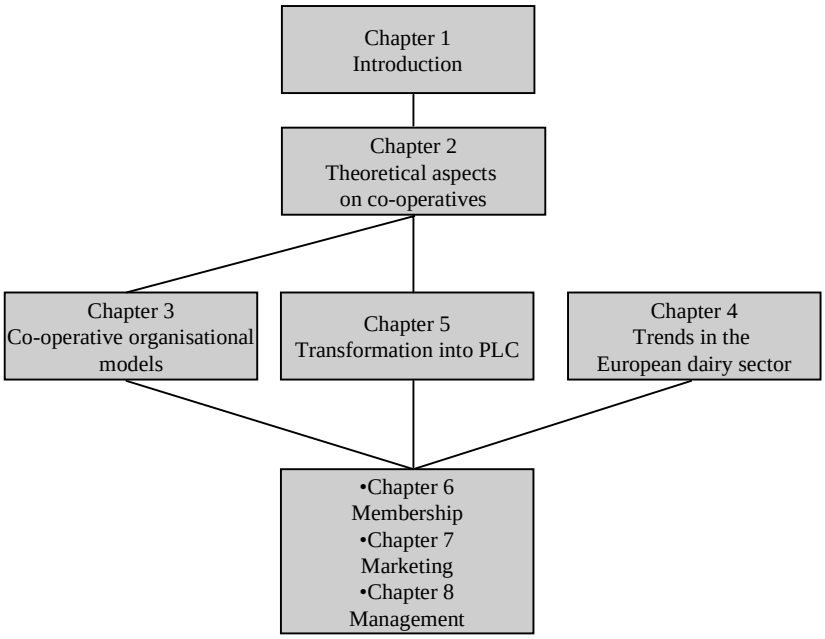

Figure 1. Structure of the report

In *chapter 3*, using the theories above, four different co-operative organisational models are analysed. The present environmental conditions stipulate the prerequisites to which the co-operative organisation must be adjusted. Four general models are presented together with a fifth model that is a combination of the other four models. These models are appropriate to analyse and discuss the models used in the case of the Irish dairy co-operatives.

It is important to know the current developments in the economic environment that influence the European dairy sector and in particular the Irish dairy sector, in order to understand the need of organisational models in the Irish dairy industry. In *chapter 4* the current trends in the European dairy sector are presented, including some of the important consequences affecting

the Irish dairy industry. The structure of the Irish milk production and dairy industry are also presented.

Four Irish dairy co-operatives have transformed into PLCs during the years 1986-1990. The reasons why are examined using the results from the interviews together with the results from earlier research studies in *chapter 5*. The explanations are analysed using the neo-classical theories and the transaction cost theory described in chapter 2. The background of the organisational transformations into PLCs and the environmental trends are fundamental in order to understand and analyse the structure of the current organisational models of the Irish dairy industry.

The effects of the different financial solutions on the members' positions in relationship with the different co-operative firms is examined in *chapter 6*. The four different organisational and financial structures in Dairygold, Glanbia, Golden Vale and Kerry are presented. The information is completed with interviews conducted with managers of the aforementioned enterprises and external experts. The results of the study are analysed comparing the co-operative models deducted in chapter 3.

The effects on the organisational changes in the areas of marketing respectively management are examined in *chapter 7 and 8* using the same methodology as presented in chapter 6.

Finally in *chapter 9*, conclusions of the thesis are presented.

2 Theories on Co-operatives

2.1 Definitions of co-operatives

There are several different definitions of co-operatives as economic organisations in the co-operative literature. Nilsson (1994) has found three common denominators characterising most of the definitions: *1) Co-operation is an economic activity, that is 2) conducted for the common needs of people (members), and which 3) is owned and controlled by these people themselves.* Organisations, which fulfil these characteristics, could be considered as co-operative organisations. Authors using similar definitions are among others Staatz (1987), and the US Department of Agriculture (Barton, 1989).

From the definition we can understand that the co-operative firm is the most essential in the concept of co-operation. The assignment of a co-operative firm is to satisfy the needs of its members, which co-operate insofar that they own and govern the co-operative firm, which with they trade. (Nilsson, 1994)

The term ”traditional co-operative model”, implies co-operatives that are formed in accordance to so-called co-operative principles (Nilsson, 1997a). The most well known principles are those advocated by ICA (the International Co-operative Alliances), which originate from co-operative schools like Raiffeisen and Rochdale. A co-operative firm, according to ICA, should be organised with respect to the seven co-operative principles that also are maintained to be universal and generally valid. The principles are presented below to give the background to the organisation of a majority of the co-operatives in Europe:

- *1st Principle: Voluntary and open membership;* Co-operatives are voluntary organisations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination.
- *2nd Principle: Democratic member control;* Co-operatives are democratic organisations controlled by their members. In primary co-operatives members have equal voting rights (one member, one vote) and co-operatives at other levels are also organised in a democratic manner.
- *3rd Principle: Member economic participation;* Members contribute equitably to, and democratically control, the capital of their co-operative. At least part of that capital is usually the common property of the co-operative. Members usually receive limited compensation, if any, on capital subscribed as a condition of membership. Members allocate surpluses for any or all of the following purposes: developing their co-operative, possibly by setting up reserves, part of which at least would be indivisible; benefiting members in proportion to their transactions with the co-operative; and supporting other activities approved by the membership.
- *4th Principle: Autonomy and independence;* Co-operatives are autonomous, self-help organisations controlled by their members. If they enter into agreements with other organisations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their co-operative autonomy.
- *5th Principle: Education, Training and information;* Co-operatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their co-operatives. They inform the general

public - particularly young people and opinion leaders - about the nature and benefits of co-operation.
- *6th Principle: Co-operation among co-operatives;* Co-operatives serve their members most effectively and strengthen the co-operative movement by working together through local, national, regional and international structures.
- *7th Principle: Concern for Community;* Co-operatives work for the sustainable development of their communities through policies approved by their members.

Within the frame of this work there will be no further treatment of co-operative principles, but it gives an idea what might have influenced the prevailing structure of several co-operative organisations. Nilsson (1997a) claims that the traditional co-operative principles do not have their roots in sound economic analysis of the present economic, social and political reality and that they can not be derived from the general definitions of co-operation. Nilsson uses the USDA definition, *"A co-operative is a user-owned and user-controlled business that distributes benefits on the basis of use"*, when he deduces the only three co-operative principles, which he explains are specified by the definition of co-operatives:

1) *The user-owner principle*. Persons who own and finance the co-operative are those which use it.
2) *The user-control principle*. Control of the co-operative is by those who use the co-operative.
3) *User-benefits principle*. Benefits of the co-operative are distributed to its user on the basis of their use.

Nilsson (1997a) asserts that the origin of the traditional principles is if anything the result of historical facts that have developed into ideological and cultural convictions. It can, however, be rational to govern a co-operative in accordance to the principles of ICA, provided that the same economic conditions are prevailing as when many co-operative firms were founded decades ago. They can not be valid for all types of co-operatives if it should gain the members economically, it is just for certain co-operatives, given the right business conditions.

Why do farmers choose to organise co-operatives and why does it seems like it is more frequent in the agricultural business compared with other sectors? These questions could be analysed with help of different economic theories and the most common are the neo-classical theories and the transaction costs theory, the most recent explanation to the existence of co-operative firms.

2.2 The neo-classical approach

The basic neo-classical model shows the relationship between welfare maximising consumers and profit maximising firms acting on a market with perfect competition. Perfect competition occurs in broad outlines in a market in which:

- There are a large number of firms and consumers.
- The firms are selling identical products.
- There are no restrictions on entry or exit the industry.
- The firms and the consumers are completely informed about the prices of the products.

- Consumers are fully rational individuals that endeavour to maximise their utility.
- Firms pursue to maximise their profits.

The firms act as *price takers* if the conditions above are predominant; i.e. they can not influence the market price. In a perfect market there no expectations exist concerning the particular form of the business organisations, and the prices reflect the actors marginal costs throughout the whole market. If just one of the aforementioned prerequisites characterising a perfect market is disturbed *market failures* occurs. Presence of market failure is, according to neo-classical theory, the rational economic reason to why co-operative organisations arise (Schrader, 1989).

There are several reasons as to why markets fail, depending on the prevalent economic and environmental conditions. Examples of specific situations where farmers might found co-operatives in order to compensate market failure are: oligopsony, spatial monopsony, competitive yardstick, asymmetric information, restricted bargaining and decreasing average costs.

As mentioned above a competitive market is characterised by a large number of buyers and sellers. For production processes in the agricultural processing industry there are considerable economies of scale due to effective technology in processing of agricultural products (Schrader, 1989). The agri-food industry, with decreasing average costs in the processing industry, is in other words an example of an *oligopsony*, in which a small number of processors and a large number of sellers exist. This is a situation where an oligopsonist may price to the drawback of suppliers of raw materials. In order to avoid oligopsony producers may form a co-operative to have some control over the establishment of prices and allocation of profits (Centner 1988).

Even in the cases where the economies of size are demarcated a spatial imbalance of market power may exist when the market area of firms are small compared to the economies of scale in the processing. It may not even be possible with more than one actor in the area, due to relatively high costs of duplication of processors. The farmers are victims of *spatial monopsony*, due to the processor's location far from any competitors. Under these conditions a co-operative can act without the risk that market power will be wielded at the expense of farmers. (Schrader, 1989)

Co-operative firms also have the possible role as *competitive yardstick*, which means that a major role is to maintain competitive and efficient systems to serve the farmers (Schrader, 1989). When the co-operatives are operating at cost it will cause the other actors to behave more competitively than otherwise and both members and non-members will benefit from this. The outcome will, however, hinge upon the co-operative being as efficient as its competitors or the other firms will earn positive profits because of higher effectiveness. However, empirical evidence of the occurrence of the competitive yardstick role is limited (Sexton and Iskow, 1992).

Buyers or sellers of agricultural products are not always fully informed about the quality of products as it is difficult to differentiate between quality and non-quality products. *Asymmetric information* gives opportunities for one part in a deal to renege while the resulting costs are borne by the other part. Historically, asymmetric information contributed to the

foundation of farm supply co-operatives in order to provide farmers with quality supplies. (Centner 1988)
Rogers and Sexton (1994) have identified some structural characteristics valid for the sale of raw agricultural products: Farm products are often bulky and/or perishable and accordingly they have high transportation costs confining the geographically mobility. Farmers' supply is subjected to be inelastic because of restricted alternative use of their investments, i.e. their assets are at least partially sunk and can not be used for other purposes. Provided farmers do not have a long term sales contract they are exposed to *restricted bargaining* as these structural conditions promote the exercising of market power. Buyers know that farmers are compelled to sell their products and may offer a low price that is bound to be accepted by the farmers. In this situation a co-operative could provide a guaranteed market, where the farmers can deal fairly with their goods. (Centner 1988)

The game theory offers some complementary explanations to why people form co-operative organisations. The primary reason, according to the game theory is that individuals act collectively provided that it improves their own well-being, i.e. rational people would not voluntarily form co-operatives if they do not benefit from it. The coalition must provide each member with a higher profit than any other possible formation to be a stable solution. (Sexton, 1986) In a situation where processing is characterised by continuously *decreasing average costs*, i.e. economy of scales, farmers could increase their benefit as individuals by acting collectively in a co-operative.

2.3 Transaction cost theory

The transaction cost theory belongs to the school of New Institutional Economics which complements traditional neo-classical theory, due to its shortcoming in explaining and describing problems in reality. The transaction cost theory relaxes some of the neo-classical assumptions regarding human behaviours and market conditions to enhance the understanding of complex problems. In this section the transaction cost concept of Oliver Williamson will help to additionally understand the existence of agricultural co-operatives and in particular why they emerge in the dairy processing industry.

According to Williamson the transaction itself is the fundamental unit of analysis in the transaction cost theory. Transactions occur whenever "a good or service is transferred across a technologically separable interface, which take place either across markets or within organisations" (Williamson, 1981). While Fahlbeck (1996) says there is no strong or reliable definition of transaction costs, in a broad context it would be the costs a firm has exchanging goods, services and information with other actors. Staatz (1987) uses the following definition, explaining the existence of agricultural co-operatives: "Transaction costs include the costs of gathering and processing the information needed to carry out a transaction, of reaching decisions, of negotiating contracts, and of policing and enforcing those contracts".

Williamson (1985) introduces some changes regarding the neo-classical assumptions of the human behaviour. Contrary to a rational human being that is fully informed and utility maximising, he postulates human beings to be *bounded rational* and *opportunistic.* His presumption of bounded rationality is based upon the idea that humans are intentionally rational, although to a limited degree because of cognitive constraints. Humans' cognitive ability is not completely rational due to our limited capacity to understand the complex world

around us and to communicate our real knowledge. This implies that humans try to be rational, but due to our cognitive constraints can never be completely rational. The postulate of opportunism is founded on people sometimes, if not always, behaving opportunistically. The potential possibility of such behaviour makes a big difference, as other people have to be prepared that some individuals will behave opportunistically. Williamson (1985) denominates it as "self-interest seeking with guile", i.e. some people behave deceitfully to reach their aims. The bounded rationality in combination with asymmetric information, due to a complex reality, will lead to opportunity for opportunism (Williamson 1985). The postulates of bounded rationality and opportunistic behaviour bring the transactions cost theory closer to reality compared to neo-classical theory and increase our understanding of why organisations, such as co-operative firms, integrate vertically (Fahlbeck, 1996).

The dimensions of transactions are, according to Williamson; asset specificity, uncertainty and frequency. These dimensions explain why there are rational economic reasons for organising a transaction, the basic unit, in different ways depending on environmental conditions. In other words, the dimensions help to understand and analyse why production and trade are organised in a certain way. (Williamson 1985)

An asset is specific when it has a noticeable lower value in an alternative use. This concerns investments, which are very dependent on a specific transaction. Williamson (1985) distinguishes between four different types of *asset specificity*:

- *Site specificity*; The asset is highly immobile once it is located. Therefore, the buyer and the seller operate in a close exchange relation as a response of when the assets are located in a close proximity to one another.
- *Physical asset specificity*; The specificity of the investments is an attribute to physical features specific to the transaction and which have lower value in alternative use.
- *Human asset specificity*; Investments in relationship-specific human capital that often arise through a learning-by-doing process.
- *Dedicated assets*; Significant investments by a supplier in existing plants on behalf of a particular buyer to sell a larger amount of products. If the contract is cancelled it will leave the supplier with significant excess capacity

The behavioural assumptions about bounded rationality and opportunism are closely connected with asset specificity. When two actors sign a contract to trade with one and another and one of the actors invests in transaction specific assets there is a high risk of opportunism from his partner once the investment is made. The latter actor then has an opportunity to realise a larger share of the gain of the trade as the other part's assets are considered as sunk. (Fahlbeck 1996)

Williamson's (1985) second dimension of *uncertainty* has its origin in the fact that the world is complex and that uncertainty is a factor of decision-making that will always exist. It is impossible for actors to foresee and guard themselves for all possible future courses of events. Hence, complexity and uncertainty in a market will always give a scope to opportunistic behaviour.

The dimension of *frequency* is about how often a transaction occurs. If one of two actors invests in transaction specific assets and the transaction frequency is high, he will be exposed to risk of opportunistic behaviour from the other actor. If the transactions only occur

occasionally they may not have to pay as much attention as if the transaction frequency were high. (Williamson, 1985)

The reasons to undertake *vertical integration* in the agricultural sector could be explained with help of transaction cost theory. Williamson (1985) claims actors will choose an organisational structure in such a way that they reduce the costs of transactions. He also argues that economising of transaction costs is the main reason to integrate businesses vertically, even if other motives may exist. With a high degree of transaction specific assets there will be higher incentives to undertake transactions within an internal organisation compared to an open market solution. Vertical integration is also a measure to safeguard assets with a considerable lower value in alternative use. (Fahlbeck 1996)

If the transaction involves conditions to be fulfilled in the future combined with high complexity or great uncertainty it might be difficult to write a contract to cover all future contingencies. Vertical co-ordination is a possible measure to avoid this. (Fahlbeck 1996)

Asset specificity
Fahlbeck (1996) says that, as many investments in the agricultural raw production include elements of sunk costs, most assets do not have an alternative use. The higher the degree of asset specificity, the higher the probability the transactions will be organised within an organisation to avoid opportunistic behaviour. For instance, most of the assets and the equipment in dairy farming have no significant alternative value. The buildings have a high degree of site specificity due to their immobility and the technical equipment, for instance a milking plant, is a physical assets specific to a certain transaction, i.e. milking cows. The farmers protect themselves from opportunistic private dairy companies by organising co-operatives. (Fahlbeck, 1996)

Ollila (1989) adds a fifth category of assets specificity to Williamson's four categories characterising agricultural production. *Time specificity* concerns assets which have a value that will depreciate if they are not cared for properly in time. Milk is an example of a product that is perishable with low storage suitability on production-site. Hence, milk is vulnerable to opportunistic behaviour from a buyer. Staatz (1987) states that the incentive for farmers to integrate vertically via a co-operative is greatest when a large part of the assets are sunk and when the product is highly perishable with confined possibilities of alternative markets.

In a situation with highly specific assets on both sides of the market, the two actors will have a mutual interest in trust, inducing the formation of vertical integration. According to Staatz this partially explains the frequent prevalence of co-operatives in the dairy sector. Milk processing plants are definitely assets that are sunk and dependent on the farmers. (Fahlbeck, 1996) However, in situations where one of the actors is relatively more dependent upon his production in comparison to the other actor, a potential threat to the weaker actor exists. In case the processor is working on a considerably larger scale it could, however, lead to an asymmetric distribution of the dependence. (Fahlbeck, 1996) In other words, an individual farmer is probably more dependent upon the large processors than vice versa.

Fahlbeck (1996) stresses that some of the traditional arguments of founding agricultural co-operatives have lost importance due to brand building by processors and the advent of information technology. There are limited possibilities for a processor to behave opportunistically without acquiring a bad reputation and affecting the investments in a label,

i.e. investments that are largely sunk. Ollila and Nilsson (1997) argue that the technology of transportation, conservation and packaging have improved and decreased the site-specificity of production. Fahlbeck's (1996) conclusion is that the transaction cost arguments do not give totally convincing support for the superiority of the existence of agricultural co-operatives, but they might explain why co-operatives were established.

Uncertainty
Ollila and Nilsson (1997) argue that agricultural production is always exposed to uncertainty caused by nature. The fluctuations in production caused by the weather conditions might lead to over-compensation in prices. This, together with consumers' relatively inflexible demand can expose the farmers to uncertainty. Ollila and Nilsson (1997) also claim that vertical integration is a way for a decreasing farmer population to maintain influence in a political uncertain environment.

Sexton (1995) says that vertical integration due to transactions cost arguments are most important in so called "thin" markets, involving a limited number of actors. The agricultural markets often consist of a small number of buyers, which reduce the market's ability to set prices. (Sexton, 1995) This could be avoided with co-operative firms assigned to give the farmers the best price possible.

Frequency
The co-operative model is a special form of vertical integration frequently used in agricultural business. An important reason Fahlbeck (1996) as well as Ollila and Nilsson (1997) discuss this is the fact that co-operative organisations integrate small scale primary processing and large scale processing. Fahlbeck (1996) states the suitability of the small-scale farming pivot on the specificities in farming, i.e. the problems of monitor and measure the linkages between input and output. The co-operative model has been a natural way to integrate small-scale farming and large scale processing (Ollila and Nilsson, 1997).

Milk-production is dependent upon frequent milk collection. Milk is a highly perishable product and it would be very uncertain not having a long-term relationship with the processor. This partly explains the high presence of dairy co-operatives compared to agricultural co-operative firms in other sectors.

To be able to analyse and value different co-operative organisational models, with the economic environment taken into consideration, the agency theory will be introduced as an analytical tool in following section.

2.4 Agency theory

2.4.1 General description

The agency theory enables analysis of how the organisational form of a firm affects its performance and efficiency. The agency theory will, in this thesis, be used to estimate the circumstances under which a co-operative firm versus an Investor Owned Firm (IOF) is more or less suited to improve economic co-ordination.

Agency theory deals with the relationship between a principal and an agent, e.g. the owner of a firm and the management, respectively. The theory takes into consideration the different interests of the actors and conflicts that may arise between them. To analyse this conflict of interest the theory is based on each actor, the agent as well as the principal, trying to maximise his own utility. In IOFs the stockholders are the principals while the members are the principals in co-operatives firms. In both organisational forms the management is designated as the agent.

Often the owner is also the manager in small firms, but as the firms get larger it is mostly beneficial to distinguish ownership and management between specialists in each area. However, this is also associated with some costs concerning the owner's control of the management's performance, compared to the owner and manager being the same person. The agency theory offers an analytical tool to analyse the costs that are connected to a division of the ownership and management.

Jensen and Meckling (1976) define the agency relationship as a contract in which the principal engages another person, i.e. the agent, to execute a piece of work on his behalf. This involves delegating some decision-making authority to the agent. If both parties act as utility maximiser there is good reason to believe that the agent not always acts in the best interest of the principal. To limit the divergence between the aim of the agent and the principal, the latter has to establish incentives for the agent to behave appropriately as well as a system to follow-up the achievements. The costs that arise due to an agency relationship are considered as *agency costs*. Jensen and Meckling (1976) define them as the sum of:

1) the monitoring expenditures by the principal,
2) the bonding expenditures by the agent and
3) the residual loss.

The monitoring expenditures are the costs for the principal to follow-up the agent's performance, otherwise the agent could behave in his own interest only. *The bonding expenditures* consist of the costs for the agent to ensure the principal that he will not behave deceitfully. However, it is generally impossible for the agent or the principal to fully guarantee or be guaranteed that the agent will not deviate from the optimal decisions made in the principal's interest. This reduction of the principal's welfare is referred to as *the residual loss*. (Jensen and Meckling, 1976)

When utilising the agency theory to evaluate economic organisations Fama (1980) considers the firm as a "nexus of contracts" between individual agents. The firm is merely a connection between the contracts. The central contracts in any economic organisation *specify the nature of the residual claims* and *the allocation of the steps of the decision process among agents*. The residual claims are defined as the right to the net cash flow from the firm when promised payments to fixed claim contracts are paid, i.e. the right to the profit when input costs are paid off. *The residual claimant* is also considered as *the residual risk-bearer*. (Fama and Jensen, 1983) In an IOF the residual claimants are the owners of the stock and in a co-operative firm the patron members; they all share the net-margin when all expenses are paid.

The agency theory divides the decision process into two main groups; *decision control* and *decision management* (Fama and Jensen, 1983). The agents, i.e. the management, handle the decision management and they initiate and implement the decisions on behalf of the

principals. The residual claimants, represented by the boards of directors, take care of the decision control, i.e. they ratify initiated decisions and monitor the performance of the decision management. The main difference between decision control in an IOF and in a co-operative firm is; in an IOF the residual claimants will also judge the management on the basis of return of invested capital, as the shares of capital are tradable. In a co-operative firm the shares are not tradable and the control of management is in the hands of the people representing the residual claimants, i.e. the members of the boards of directors (Condon and Vitaliano 1983). The lack of secondary market for co-operative shares reduces the residual claimants' possibility to control management's performance. Consequently, the co-operative board of directors must play a more active role in monitoring the management compared to their colleagues in IOF (Staatz 1989).

Combination of decision management and decision control in one or a few agents leads to an organisation where the residual claims are mainly restricted to these agents. Fama and Jensen 1983 identify that kind of organisation as *non-complex* and it means that information relevant to decisions are concentrated to one or a few agents. The owner of the firm both manage and control important decisions and consequently avoid opportunistic behaviour from other agents. Non-complex organisations are generally smaller firms and as the decision management, decision control and residual claim holdings are concentrated to very few agents they have no agency costs. (Fama and Jensen 1983) Farms and other small businesses are examples of non-complex organisations.

It could be beneficial to separate management from ownership in organisations of which activities are characterised by significant technological complexity, large capital requirements and high risks. Specialists in each area best perform the decision management and residual risk bearing. (Condon and Vitaliano, 1983) Schuster (1989) defines such organisation as a firm with *separated residual claim*, i.e. an organisation where the residual claimants do not have any other roles except contributing to risk capital. In the terminology of Fama and Jensen (1983) an organisation with the aforementioned traits is denominated as a *complex organisation*. The prime example of a complex organisation is the *open corporation with public marketable residual claims* (shares) that are characterised by a large number of shareholders free to transfer their shares. (Condon and Vitaliano, 1983) In this thesis an open corporation, with the aforementioned traits, is equivalent to IOF with tradable shares on a stock-exchange market. Fama and Jensen (1983) maintain that specialisation of residual risk bearing and decision management enhance a complex organisation's adaptability to changes in the economic environment, as the management staff is elected with respect to their skills and not because of wealth and willingness to bear risk. The separation of residual risk bearing from decision management leads to a decision system, as mentioned above, with separated decision management and decision control (Fama and Jensen 1983).

Separation and specialisation of the residual claims and the decision-making leads to agency problems between principals and agents. However it is possible to reduce agency costs due to public marketable residual claims. The transferability of the residual claims on a *stock market* gives rise to external monitoring e.g. the way a stock price that summarises the consequences the agents' decisions will have for the firms current and future net cash flows. *The market for take-overs* also gives rise to external monitoring through the potential threat from other firms that may purchase stock and replace the management. Different kinds of external monitoring put pressure on the decision process to concord with the interest of the residual claimants.

The internal control in open corporations is delegated by the residual claimants to an *expert board* in order to govern the firm in best possible way. The corporate board should consist of members both from outside the firm and from internal management, all selected because of their skills and knowledge. Residual claimants do generally retain the right to approve decisions in issues concerning new stocks, election of board members and mergers. (Fama and Jensen 1983)

The residual claim and the decision management in a co-operative firm are also separated. However, there are some crucial differences between open corporation and co-operative organisations concerning the residual claimants' relationship to the co-operative and the transferability of the shares. Vitaliano (1983) define a co-operative as "an economic organisation whose residual claims are restricted to the agent group that supplies patronage under the organisation's nexus of contracts and whose board of directors is elected by this same group". Schuster (1989) uses the concept of *co-operative residual claims* as an economical organisation where the co-operative's activities have an immediate impact of the residual claimants business. The individual residual claimant, i.e. the member patron, possesses the residual claim merely during the time he has interest in the co-operatives business. It is possible for the residual claimants contribute some capital, however, the amount of capital is not connected to the value of the co-operative firm. If the co-operative has any surplus to distribute among the residual claimants it will be connected to the value of the trade between the member patrons and the co-operative, i.e. without any connection to the invested capital. The residual claimants do not have the possibility to freely transfer their shares. The value of the shares does not necessarily reflect the value of the co-operative. Accordingly, as the residual claimants withdraw they will return solely the nominal value of invested capital. (Schuster 1989) To sum up, the co-operative residual claim is not openly tradable.

2.4.2 Agency theory on co-operatives

The co-operative organisational form has some unique inherent agency problems, which gives rise to agency costs that will not be found in any other organisational forms. These agency problems are classified into five groups used by i.a. Nilsson (forthcoming) and Schuster (1989). They are presented below together with the unique problems of the boards of directors associated with co-operatives:

1) The horizon problem
2) The common property problem
3) The portfolio problem
4) The decision-making problem
5) The follow-up problem

The horizon problem deals with the fact that the members' access to the co-operatives' net cash flow ceases the day they withdraw. This is a consequence of the fact that the residual claims are non-tradable, therefore the residual claimants can not capture the benefit of earlier and current investments, after the day of withdrawal. Accordingly not all investments with positive present value will take place. (Schuster 1989) The horizon problem implies that residual claimants, i.e. members, have different time horizons regarding their membership and consequently different preferences concerning investment decisions. Not only do younger and older members have different planning horizons, the horizons differ also between members

and management as well as elected representatives (Nilsson, forthcoming). It is difficult for management to find solutions that suit all different member-categories. Due to the horizon problem investments with long time horizon tend to be generally less preferred in co-operative firms compared to investments with short pay-off time (Vitaliano 1983). Members who will withdraw before an investment pays back will probably raise objections to long-term investments. Horizon problems in co-operative firms therefore give rise to implications concerning investments and organisational growth (Vitaliano 1983).

Most of traditional co-operative firms practice the principle of open membership, i.e. new members have the possibility to join and deliver goods provided they fulfil the specific demand of that particular co-operative. When new residual claimants acquire the same rights to participate in the decisionmaking process and have access to the capital accumulated by earlier member generations on the same conditions as the existing members *the problem of common property* arises as a result. New members are seldom obliged to pay fees equivalent to the values they get access to (Vitaliano 1983). New members will dilute the equity of existing members as their share of the total assets diminishes. When a member exits the co-operative organisation he will not have access to the assets he has contributed to. Accordingly, members have small incentives to invest in the co-operative firm. (Nilsson forthcoming) Members are encouraged to act as *free-riders*; they have access to the accumulated capital when they join and have small incentives to voluntarily contribute with capital. The problem of free-riders is an effect of distorted market signals in co-operative firms.

The residual claimants of a co-operative firm have few possibilities to diversify their portfolio of assets and accordingly also their risks. They are required to buy a certain amount of shares, for instance proportional to the amount of goods they would like to deliver. The *portfolio problem* arises, as the members are not able to make investments in the co-operative with regard to their own risk-preferences and assets. Accordingly, non-tradable shares will lead to an ineffective risk-distribution as some residual claimants invest less than they really are willing to and vice versa. (Schuster 1989) According to Vitaliano (1983) the portfolio problem generally tends to favour decisions with lower levels of risk. Principals (members) and agents (elected representatives and managing directors) could have different views of how the portfolio should be composed, which can lead to conflicts. (Nilsson forthcoming)

The decision-maker problem arises in economic organisations with co-operative residual claims as consequence of a lack of tradable residual rights. The decision-making in co-operative firms is in the hands of a small group of people representing all the members. The preferences among the residual claimants are different and it is very difficult for the board of directors to weigh members' opinion and satisfy their interests. (Schuster 1989) In economic organisations with tradable shares it is possible for the management to get hints about what decision the members prefer.

The follow-up problem is prevalent in all economic organisations where the ownership and the management of the firm are separated. The principals will always have difficulties in following-up the result of the agents' work to plausible costs. This is a result of the inherent conflict between the interests of agents and principals and that management has not to take full economical consequences of their decisions. (Schuster 1989)

The agents could rise their utility *by consumption on the job*, i.e. nonpecuniary goods. That kind of consumption is hard for principals to guard. Examples of consumption on the job are

attractive job-conditions, consumption of spare time and talking with colleagues. Another conflict is the agents' incentive to expand the firms' size, even if it is not in the interest of the owners. There are several reasons behind that kind of behaviour, for instance it could give the agents possibilities to increase their consumption on the job, rise their wages as the firm get larger, advancement or maintain employment security. (Schuster 1989)

In open corporations a board of directors' does not exercise sole decision control. The market of the firm's shares will also control the management (Vitaliano 1983). If the residual claims, i.e. the shares, are separated and tradable on an open market the market-mechanism will reduce the agency costs. The share price gives the residual claimants an idea of current and future net cash flow in the firm. If the agents' decisions diverge too much from the interests of the principals the share price will deteriorate and increase the risk of take-overs, which may threaten the management's own position. In a co-operative firm there are not any share price or any financial analyse that follow-up the result of the agents decisions. (Schuster 1989) The only authority exercising decisionmaking control in a co-operative firm is the elected representatives in boards of directors, but their possibilities to judge the achievement of the agents are weak. Therefore one can expect higher agency costs in co-operative firms. Consequently, there is a potential risk of higher divergence between the aim of the principals and the agents in a co-operative firm compared to an open corporation (Schuster 1989). Nilsson (forthcoming) shows the problem of common ownership allows new members to become free-riders, as an effect of distorted market signals. When the market signal does not work properly a vicious circle will be created and reduce the members' incentives to get involved in the business of their co-operative firm. If the members lose their interest the management may take control and work for its own interests.

However, the residual claims of a co-operative firm are at least partially redeemable, which deprives the management's total control of the firm. The members of a co-operative organisation have the option to withdraw their membership and cease to patronise the firm and threat the management's objectives, like security of employment and growth maximisation. The extent of which the shares in a co-operative could be redeemed depends upon the alternatives for the patrons to find another partner to trade with. Another decision control mechanism is the right of residual claimants to change the organisational structure through, for instance, mergers followed by loss of employment or authority of decision managers. (Vitaliano 1983) To sum up these measures against deceitful behaviour of agents in co-operative firms they are regarded as relatively weak, compared to tradable shares in IOFs.

The residual claimants delegate most of the decision control to *the co-operative boards of directors* that ratifies and monitors decisions within the co-operative organisation. The board will consequently reflect the objectives of the residual claimants. (Vitaliano 1983) According to Fama and Jensen (1983) an organisation with marketed and immediately redeemable residual claims, i.e. an open corporation, has the possibility to delegate decision control to board members without any direct connection to the residual claims due to the inherent decision control in such an organisation. Accordingly the members of the board are elected wit regards to their skills and knowledge and not necessarily from inside the firm. Co-operative organisations lack that kind of inherent decision control because of the residual claims restricted marketability and immediate redeemability. A co-operative organisation has to wield its decision control through the board of directors. This explains why the members of the board are elected from the residual claimants group. Theoretically a co-operative board of directors has a weakness as the co-operative members have their skills and knowledge mainly

related to their own business and not necessarily to the business of the co-operative. (Vitaliano 1983) A weakness of the co-operative's board of directors is the confined selection of suitable members of the board, as the co-operatives are referred to their own residual claimants.

2.5 Property rights

The property rights theory delivers some critique against the co-operative organisational form, which could lead to severe agency problems. According to Tietenberg (1996) property rights refers to a bundle of entitlements defining the owner's rights, privileges and limitations for the use of resources. Efficient allocation of resources can only be attained by an economy that is conducive to efficiency, i.e. no market failure exists of non-attenuated property rights. In an efficient market, the property rights are essential precondition for trade. (Randall, 1987) The main characteristics of an efficient structure of non-attenuated property rights according to Tietenberg (1996) are:

- "Universality: All resources are privately owned, and all entitlements completely specified".
- "Exclusivity: All benefits and costs accrued as result of owning and using the resources should accrue to the owner, and only to the owner, either directly or indirectly by sale to others".
- "Transferability: All property rights should be transferable from one owner to another in a voluntary exchange".
- "Enforceability: Property rights should be secure from involuntary seizure or encroachment by others".

Traditional co-operative firms are not organised in concordance to the structure of the non-attenuated property rights. The principle of *universality* is not fulfilled as traditional co-operative firms generally have a substantial amount of unallocated capital, which entitlement is not fully specified and privately owned by the residual claimants. The member-patrons only have access to their own shares, which are a minor part of the total capital. Furthermore, they are only transferable to their monetary value. The unallocated shares, the major part of the capital owned collectively by the co-operative society, are *not freely transferable*. Revenue from unallocated capital invested in business operations do not necessarily accrue to the individual members patrons, instead it accrues to edification of additionally unallocated capital. As members withdraw, they only redeem the monetary value of their equity, hence, the unallocated capital is not *exclusive*. The principle of open membership combined with modest fees required to join a co-operative, dilute the equity of existing members. Accordingly, the patron members' *enforceability* of their property rights is poor.

Several problems are associated with the agency theory due to the separation of ownership and control of a firm. These problems become accentuated in co-operatives as, "the multiple interpretations of ... vaguely defined property rights lead to conflicts over residual claims and decision control, especially as co-operatives become increasingly complex in organisational structures" (Hackman and Cook, 1997). Nilsson (forthcoming) says "basically, the differences between IOFs and co-operative firms are due to diffuse property rights in co-operative firms." However, given certain conditions, members perception of a better functioning product market may outweigh the costs associated with diffuse property rights.

According to agency theory no unequivocal advantages with co-operative residual claims exist compared to complex organisations (Schuster, 1989). Even if there are some convincing

arguments, according to the agency theory in combination with property rights theory, contradicting the existence of co-operative firms, there are still many co-operative firms playing dominant roles in several different markets. The agency theoretical arguments will be nuanced with help of the neo-classical theory and the transactions cost theory later in this thesis to explain the circumstances under which a co-operative firm is superior relative other economic organisational forms.

3 Co-operative organisational models

There is a current trend of traditional co-operatives seeking new organisational structures in order to adapt the co-operative organisation to changing economical conditions discussed in the previous section. The development of new organisational structures treated in this thesis are primary valid for traditional co-operatives with business operations further downstream the processing chain.

Nilsson (forthcoming) has developed a model, which roughly explains the two different roles of members of a co-operative business, the *patron role* and the *investor role*. Depending upon the business conditions the members perceive, they experience the two roles to different degrees. The patron role is obvious in co-operatives where the members consider the firm as effective in correction of market failure. Consequently, the investor role is suppressed, as the purpose of investing in the co-operative business is to be able to conduct trade with it. The investor role is generally apparent in co-operatives, which have tradable residual rights. Based on the discussion about the agency problems in preceding section it may be assumed that, in co-operatives with suppressed investor role, the monitoring problems are probably more serious. Figure 2 below presents the four extreme types of co-operatives according to Nilsson (forthcoming). Naturally, there also exist intermediary forms of co-operative organisations also exist. (Nilsson, forthcoming)

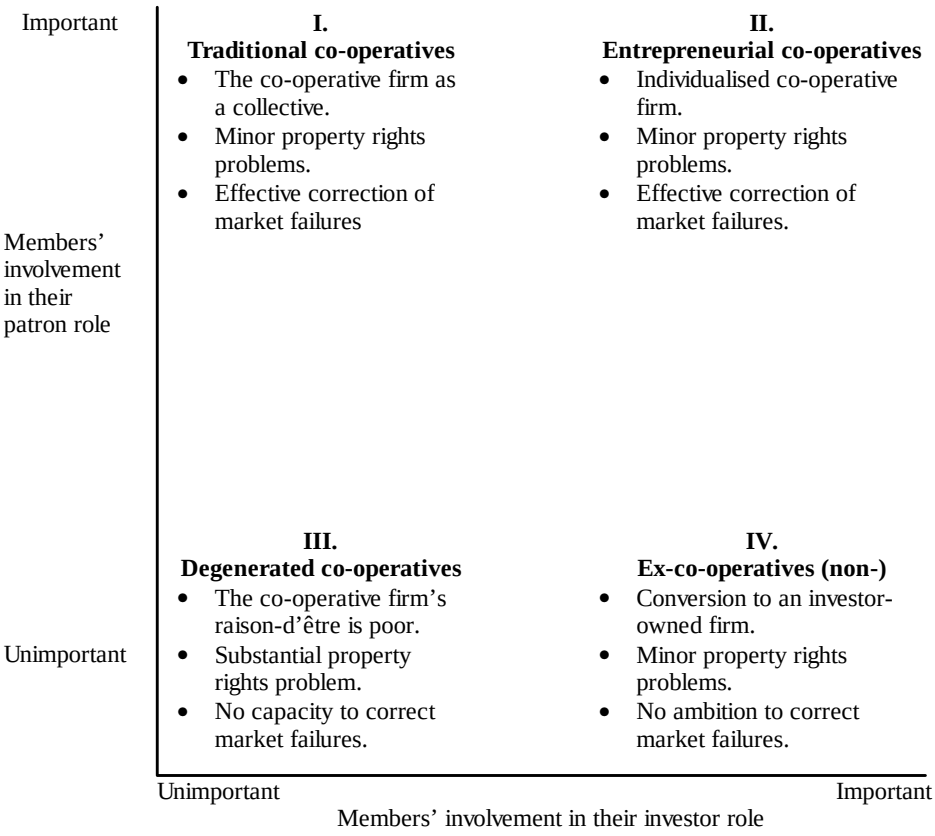

Figure 2. Types of co-operatives as dependent upon members' perceived roles. Source: Nilsson (forthcoming)

Type I: Traditional co-operatives
Provided the members consider the co-operative able to correct market failure, the patron role is dominating over the investor role. Traditional co-operatives are probably devoted to operations in the primary processing, closely related to the members own operations. Such operations are generally characterised by large size as they are easily standardised, routinised and automatised. Accordingly, the investments are probably small. As the members are highly involved in the co-operative's operations and generally a homogeneous group, they will probably not have any difficulties in monitoring the firm.

Type II: Degenerated co-operatives
Most degenerated co-operatives were originally traditional co-operatives. The co-operative does not correct any market failure, consequently, the members do not appreciate their patron role. Provided the members also have small interest as investor, the co-operative firm has very small raison-d-être. The membership is probably very heterogeneousous. The monitoring problem is large and there is a risk the management takes control and promotes its own interests. Consequently, the co-operative's business operations are probably inefficient and the management makes investments beyond the members interests.

Type III: Entrepreneurial co-operatives
The co-operative is effective in strengthening members' market position when the members are highly involved both in their patron role and their investor role. The residual claims are tradable and members get remuneration on their capital. Accordingly, they are willing to make considerable investments in the co-operative business. As the production further downstream the processing chain entails more complex business operations and an increased need for capital, it is probably necessary to have well defined property rights. The new generation of co-operatives and the PLC co-operatives are examples of entrepreneurial co-operatives.

Type IV: Ex-co-operatives
This type of co-operative is an IOF rather than a co-operative. Firms that convert into an ex-co-operative are generally degenerated co-operatives, unsuccessful in correcting market failure and promoting the members' interests. Probably the co-operative is sold to investor(s), consequently the firm is no longer a co-operative.

A degenerated co-operative can also transform itself into a combination of the other four co-operative models, i.e. a *combination co-operative*. The primary processing, provided market failure, could remain in a traditional co-operative. The value-added operations requiring considerable investments could be transformed into an entrepreneurial co-operative and unrelated business activities could be sold out, i.e. turned into an ex-co-operative.

From the brief description of the four different types of co-operatives it is understood that serious problems concern only the degenerated type, i.e. when both the patron role and investor role is perceived as weak by members. In order to reinforce the position of a degenerated co-operative, the organisation should introduce measures to strengthen either the patron role or the investor role, or both. Such ameliorations entail a conversion of degenerated co-operatives into another type of co-operative or some combination of these. (Nilsson, forthcoming) The subsequent sections give a thorough description of the different co-operative models and the possible routes of degenerated co-operatives.

3.1 The traditional co-operative model – superior under certain conditions

Farmers have originally formed co-operatives in order to ameliorate market failure or reduce high transaction costs they may experience in dealing with private trading partners. By acting within the framework of a co-operative firm the farmers will increase their influence in the market. They benefit from a better functioning market and balance the costs caused by agency problems.

Nilsson (1997a) denominates co-operatives formed in accordance to the so-called co-operative principles as "traditional co-operatives". He means the co-operative principles can not give supervision to all types of co-operative firms, i.e. the principles are not valid for all types of market failure. Given certain environmental conditions the principles could be rational for certain co-operatives.

This section deals with:
1) General economic conditions, reducing the agency costs in a traditional co-operative firm.
2) Specific conditions, both reducing agency costs and making traditional co-operative principles rational.

3.1.1 Agency costs

According to Nilsson (forthcoming) the criticism of the agency theory will have less relevance if the following two qualities are fulfilled by the membership of the co-operative firm:

- the business corrects market failures for members
- members experience certain trust in internal relationship

Nilsson (forthcoming) shows there should be some trust between the members in a co-operative firm in order to work properly. He express that in terms of "low interpersonal transaction costs between the members as concerns how the co-operative should be run" (Nilsson, forthcoming). The transaction costs should be so low that the members can reach consensus in crucial questions regarding running the co-operative firm. The agency problems still exist, but the members perceive them as small since better market conditions outweigh them. To sum up, the membership of a co-operative firm should be homogeneous.

The *problem with common property* is less significant provided that the members are a homogeneous group and the common assets are relatively small. Presuming the co-operative is exclusively active on a market where the members are the objects of market failure, follows demarcated capital investments. The market failure problems of the members acting on agricultural markets are in the first stages of the processing. Accordingly, it is surmountable for the members to raise the necessary capital to finance the co-operative. When the members withdraw they only return the nominal value of the invested capital, but the "loss of capital" is limited, instead they have benefited from their membership. (Nilsson, forthcoming) Thus, when new members join the co-operative the free-rider problem is marginal, the dilution of the equity will be restricted as long as the capital invested in the co-operative firm is small (Nilsson, 1997a).

Additional argument for the co-operative to operate exclusively in the primary processing is that if the co-operative is active further downstream in the processing chain, there is a potential risk the market prices for the farmers' products become distorted if the profits from the value-added operations affect the raw material price. It could cause a situation where the market-mechanism does not work properly. (Nilsson, 1997a)

Some unallocated capital is not a serious problem. It could be activated as a "shock absorber" to protect the transaction specific investments of the members, for instance in situations when the product price is greatly fluctuating. The unallocated capital reduces the risk that the co-operative suddenly gives up the business. (Nilsson, forthcoming)

Under the assumptions of homogeneous membership and the co-operative firm correcting the members' perceived market failure, *the portfolio problem* is not significant. Under these circumstances all members benefit from all investments provided the firm undertake businesses closely related to the members' own activities. The members do not have the possibility of diversification regarding their own risk-preferences. Provided that the co-operatives business operations are straightforward, less capital intensive and stable over the years the problems with unallocated capital and non-tradable shares are considered as limited. (Nilsson, forthcoming)

The loss in efficiency because of *the horizon problem* is small provided homogeneous membership and small investments in the co-operative firm. Members gain from a better functioning market as the co-operative firm operates in the primary processing close to their own business. The co-operative's business functions are probably uncomplicated and stable over the years, consequently the members are willing to make the investments as they are limited and regular. (Nilsson, forthcoming)

High member-commitment is likely provided homogeneous membership and the co-operative correct market failures relevant to the members. From this follows, *the decision-maker problem* and *the follow-up problem* are probably small as the members are interested in giving the management their opinion about the decisions to make and follow-up the result of them. (Nilsson, forthcoming) Due to the homogeneous membership, the members' opinions are probably similar and the co-operative business easy to follow-up as it is known and closely related to the members own business.

3.1.2 Co-operative principles

The co-operative principles originate from the certain economical conditions valid decades ago or even more than hundred years ago. Under similar conditions traditional co-operatives may still be considered as economically rational (Nilsson 1997a). The economical condition under which the traditional co-operative model is appropriate is designated as a certain type of market failure. Given the economical circumstances below, the agency costs are small and the traditional co-operative principles are considered as rational for all members. These conditions were prevalent when a majority of the agricultural co-operatives of today were founded. They are according to Nilsson (1998):

1) *The co-operative's average cost curve*, describing the processing costs per unit, *is continuously declining*, expressing substantive economies of scale. This is a reasonable

assumption when the processing conducted by the co-operative consists of the collection of produce from the farmers, homogenisation, classification, limited processing, and finally sales to consumers, retailers or other food manufacturers. In other words, very simple tasks that can be made routine, standardised and automated.

2) *The market price*, at which the co-operative is selling to other processors, to the trade or to the consumers is fixed, i.e., *is not affected by the co-operatives sales volume*. Either the co-operative is such a small player on the market that it is a "price taker", or the price is guaranteed by the state's agricultural policy.

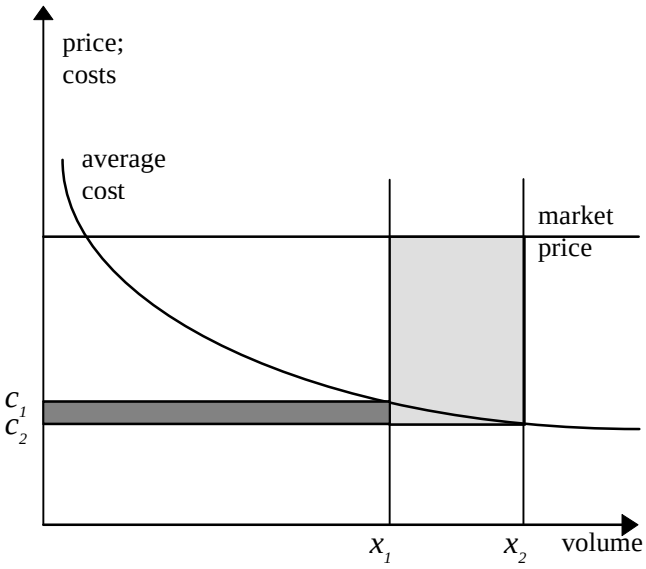

Figure 3. Continually declining average costs and a constant sales price implies a growth goal. Source: Nilsson (1997a)

Given these certain conditions, it is in all members' interest to expand the co-operative's business operations. It would be beneficial for all current members to increase their own production and/or to recruit new members in order to increase the volume and reduce the co-operative firm's average cost. Figure 3 shows that current members are willing to relinquish the part of their profit corresponding to c1-c2 in order to gain the profit from the volume increase, x1-x2. However, this is provided that the enhanced volume does not influence the market price, which could be the situation if the co-operative is a small actor on the market or if the political system guarantees a constant price. Historically, the agricultural co-operatives in Europe have been working under these circumstances, which explains the success of traditionally organised co-operatives. (Nilsson 1997a)

The co-operative principles could be logically derived from the fact that it is rational to increase the volume on the presumption that the co-operative firm is devoted to simple processing and selling the products to constant market prices. Below, the theories behind the rationale of the co-operative principles and generally used as common practice in co-operative firms are shown.

The principle of open membership: It is in all members' interest to increase the delivered volume and accordingly reduce the average costs. Hence, with open membership it will be easy to recruit new members to reach the aim of increasing the volume. (Nilsson, 1997a)

The principle of equality: All members should be treated equally, and accordingly they should all receive the same product price, regardless of business volume. More efficient members benefit from less efficient members as the former contributes with enhanced volumes that decrease the average cost. (Nilsson 1997a) Price differentiation based on quantity or quality is not always applied in order to facilitate the recruitment of new members and encourage existing members to remain in the co-operative. (Nilsson, 1998) Another way to encourage new members to join a co-operative is to offer them equal influence, i.e. one member - one vote, independent of the amount of delivered volume to the co-operative firm. (Nilsson 1997a)

The principle of neutrality: The individual member's identity regarding political, ethnical or religious issues are of secondary importance as long the co-operative firm receive the goods. (Nilsson, 1997a)

Delivery obligation and delivery rights: It is common practice in traditional co-operatives that members are obliged to deliver all their goods to the co-operative. Likewise, the co-operative is obliged to accept all members' goods. It is in the interest of all members that the delivered amount should be as large as possible in order to reduce the average cost. (Nilsson, 1998)

In order to keep members within the co-operative and facilitate the recruitment of new members, *issues on ideology and solidarity* generally play an important role in co-operative firms (Nilsson 1998).

Co-operatives working under the aforementioned conditions want to avoid a decrease in its production volume. Therefore, *withdrawal is generally difficult* from a co-operative firm. For instance, the members have to wait to receive their invested capital or even pay a resignation fee. (Nilsson, 1998) Contrary, it is generally *easy to join* a co-operative firm as new members contribute with more goods. In order to encourage new members to join, they generally pay a small or no entrance fee at all (Nilsson, 1997a). Co-operatives sometimes go in for *non-membership trade*. Generally this is ideologically a sensitive issue, however, as the supply from non-members lower the average cost for all members (Nilsson 1998). Consequently do all members benefit from non-membership trade.

Generally co-operative firms pay the members very *low or no interest* at all on investments in the firm. As an effect, the price on raw-materials increase and consequently the delivered volume increases and reduces the average cost (Nilsson, 1998). *A high degree of unallocated capital* in the co-operative firm is also considered as cheap capital, as it does not require any payments to the members. The members benefit from increased prices of their supply. (Nilsson, 1997a)

According to Nilsson (1998), co-operative firms almost without exception have *idle capacity*. The co-operatives are building up a larger capacity than actually utilised, in order to be prepared for volume increase.

Traditional co-operatives tend to be *production-oriented*. The fundamental reason is of course as a consequence of the farmers' production, the co-operatives are founded to take care of the farmers supply. Besides, a given market with fixed prices influences the firms to focus on output, accordingly the market orientation is subordinated the production orientation. (Nilsson, 1998) An effect of poor market-orientation and concentration of the production to the first stages of the processing is that co-operative firms are generally *economical in*

investments on research and development (R&D). Traditional co-operatives are devoted to activities in the primary processing, using simple operations and consequently less intensive regarding R&D.

3.2 Degenerated co-operatives - Traditional co-operatives may be deficient

The section above gives the background of the organisational structure characterising quite a number of existing agricultural co-operative firms within EU. Given other economical conditions than these mentioned above, the traditional co-operative model is detrimental to the members. In this section the consequences to the traditional co-operative model if the prerequisites change will be explained. The economic environment surrounding the co-operative firm and the farmers may have changed in such a manner that the co-operative firm does not fulfil the farmers requirements properly any longer. Nilsson (forthcoming) expresses this problem as incongruence between the characteristics of the farmers and the characteristics of the co-operative.

As argued in the proceeding section, quite a few traditional co-operative firms have expanded their business into business-areas further down-stream the processing chain in order to reap larger benefits. The traditional co-operative model is not adapted to production on markets where the transaction cost theoretical arguments are not prevalent, like international markets or markets for value-added products. Nilsson (1998) presents some arguments which question the prerequisites appropriate for the traditional co-operative model in value-added production. These includes:

Economies of scale are undermined by increased marketing costs: The graph in the section above (fig 2) depicts the decreased average costs in production. Economies of scale also exist to certain extent in the area of marketing. However, the market will finally become saturated and expensive marketing efforts are necessary to sell the products. In other words, as the marketing costs per unit increases an enlargement of the production would reduce the firm's profit.

The shape of the average cost curve might be different for processed goods: When it comes to highly processed goods, economies of scale may not be evident. The average cost may increase due to lack of raw materials, difficulties with distribution or a saturated market. Substantial investments are necessary in order to reduce the per unit cost again by increased volumes.

Market prices for highly processed goods are supply sensitive: Products developed to sell on niche markets give chances of good profitability. However, products on such market are very supply sensitive. If the supply exceeds the consumers' demand the price will fall dramatically.

The traditional co-operative model is not adapted to the extended business operations further downstream the processing chain. The inherent problems in the traditional model become obvious, as the prerequisites are not solely associated with high transaction costs. The agency problems and the traditional co-operative principles will cause substantial costs on markets where market failure is not prevalent.
Nilsson (forthcoming) argues that the critiques against the traditional co-operative model is valid when:

1) the co-operative firm is collectively financed and run, and if at the same time at least one of the following conditions are fulfilled;
2) the co-operative does not correct market failures to any significant degree;
3) the degree of trust within the membership is low, i.e. the heterogeneity is high.

Former actors that caused market failure may have changed over time, consequently the need for co-operative organisations to correct market failure may have vanished. Members' commitment in such co-operatives is naturally reduced. The heterogeneity among the members may have increased due to the co-operative firm's expansion, i.e. in size or into new business operations. Therefore the degree of trust within the membership may have decreased, as a consequence of the co-operative's business activities not in correspondence with all the members interests. (Nilsson, forthcoming)

The horizon problem, the portfolio problem and the common property problem probably prevent heavy investments required in value-added business operations. Investments in such operations have a long-term perspective. Due to *the horizon problem* investments with long time horizons are less preferred as the preferences in heterogeneous member-categories divergence. The members' residual claims can not be transferred as they withdraw, consequently they merely consider what the co-operative offer in short-time perspective. The co-operatives investments will be suboptimal. (Nilsson, forthcoming)

The portfolio problem arises, as the members are not able to make investments with regard to their own risk-preferences. Investments with higher levels of risk tend to be less favoured, which is detrimental for large investments and investments in business operations further downstream the processing chain. (Nilsson, forthcoming)

Provided open membership and substantial investments *the problem of common ownership* become significant as new members get access to and dilute the equity of existing members, i.e. members are encourage to act as free-riders. Consequently traditional co-operative firms have problem to raise the necessary capital even for investments with prospect of success. (Nilsson, forthcoming) The horizon problem, the portfolio problem and the common property problem all contribute to the obstruction of investments in traditional co-operative firms with value-added business operations.

Another factor contributing to the problems of financing traditional co-operatives is the fact that farmers are often not even able to finance heavy investments (Nilsson, 1997a). A reasonable explanation is may be that farmers' own businesses are capital intensive, accordingly it could be difficult to raise enough capital to make considerable investments on both farm- and co-operative-levels.

Traditional co-operatives operating far downstream the processing chain may contribute to seriously distorted market prices for raw-products (Nilsson, 1997a). This could be the case if the co-operative firm pays the profits from the value-added production in the form of increased product prices to farmers. The value-added production may also subsidise less beneficial production within the co-operative, e.g. the primary processing. The consequence is sub-optimal allocation of resources, e.g. the structural rationalisation in the agricultural operation and in the co-operative firms primary processing may be hampered.

Heterogeneous membership and value-added production far from the farmers own business reduce the motives of members to become involved in the business of the co-operative firm. The *follow-up problem* is in particular prevalent in business operations further downstream the processing chain. The members are probably less skilled and less inclined to evaluate the business far from their own operations (Nilsson, forthcoming). If the members lose the interest to monitor the business, it is a potential risk that management takes control and increases their utility by consumption on the job. Examples of that are: higher salary, higher prestige, expansion of the business maybe not beneficial for the members or out of interest of the members' own business.

The decision-maker problem is probably significant in large scale, complex organisations with heterogeneous membership. Heterogeneity of the membership makes it difficult for the management to assess the opinions of the members and it becomes serious when it comes to complex business decisions (Nilsson, 1997a). The members' interest is probably larger in the production close to their own business than the business operations further downstream the processing chain. Therefore, the management in particular may get poor feedback concerning value-added production. A consequence of the decision-maker problem may be "unduly much power to the management" (Nilsson, 1997a)

Unallocated capital is, with very few exceptions, dominating in traditional co-operative firms. As argued in the preceding section, it could be advantageous to a certain extent, however, this is generally not the case in co-operative firms. Generally, only a minor part of the equity is allocated to the individual members, i.e. a substantial part of the capital is in the hands of the members collectively by means of the co-operative society. Consequently, the market signal between the co-operative and the members are distorted as the product prices offered may not be in line with the actual costs, i.e. farmers receive excess payments when selling their goods (Nilsson, forthcoming). The unallocated capital does not promote an active governing. Consequently, there is a potential risk that members lose control to the benefit of management, as the members as individuals have less interest in the collectively owned capital relatively the individual capital. The management may instead promote its own interest by "consumption on the job".

One important prerequisite for the traditional co-operative model to be successful is if the price on raw material is determined by an another actor, e.g. an IOF or guaranteed political price. Any one co-operative firm can not affect the price. Nilsson (1998) argues, however, that traditional co-operative firms are dominating several agricultural markets. Accordingly he means there are good reasons to believe that there are several examples of traditional co-operatives wielding price leadership. The traditional co-operatives are created to maximise the supply volume of raw material. The price is not independent of the delivered volumes, hence the traditional model contributes to create a downward pressure on the price. This situation influences the market price and consequently all firms on the market are affected by the same downward sloping demand curve, i.e. co-operative price leadership lowers the market price.

Provided an average cost curve not continuously declining and a market price affected by the co-operatives sales volume, the traditional co-operative principles are detrimental for the members of the co-operative. Nilsson (1997a) designate the traditional co-operative principles as measures not compatible with market principles as they artificially increase the production volume. The traditional principles stimulate the production by a variety of cross-subsidisation

measures where, among other things the capital subsidises the production and efficient farmers subsidise less efficient farmers (Nilsson, 1997a).

The traditional principles and the other general attributes of traditional co-operatives presented in the preceding section all aim at increasing the production volume. This is in particular adverse to traditional co-operatives devoted to production further downstream the processing chain as excess supply will diminish the profit of value-added production.

The traditional co-operative is not suited for vertical integration, i.e. value-added business operations further downstream the processing chain. Nilsson (1997a) explains the considerable agency problems of highly vertically integrated traditional co-operatives by poor defined property rights. Unallocated capital is according to the property right theory not universal, exclusive, transferable or enforceable. The unallocated capital in traditional co-operatives complicates the governance of such firms. Nilsson (1997a) means the agency problems have one least common denominator, it is the lack of market for the shares.

There are several possible solutions for a degenerated co-operative firm. The degenerated co-operative must take measures in order to strengthen either the members perceived patron role or their perceived investor role, or both.

3.3 Entrepreneurial co-operatives

In entrepreneurial co-operatives members are strong in both their patron role and investor role. Highly vertically integrated co-operative firms with complex business operations imply an increased need for capital. It is necessary with well-defined property rights in the form of equity shares that are transferable and appreciable in order to strengthen the investor role and reduce the agency costs (Nilsson, forthcoming). The agency costs tend to be considerable in a traditional co-operative operating further downstream the processing chain. Through the adaptation of tradable equity shares the members become willing to invest in value-added production and simultaneously the agency costs are reduced. Provided market failure in the primary processing, the members are still highly interested in their patron role. There is probably no market failure prevalent in value-added processing, consequently the patron role is weaker there.

All the unique and inherent agency problems of the co-operative organisational form will definitely disappear in an entrepreneurial co-operative with tradable shares. However, the agency costs connected to the separation of the owner and the management remain. The effects of the adoption of tradable shares in co-operative organisations are divided into three areas; membership, marketing and management. The motive of the subdivision of the theoretical effects is in order to facilitate the comparison between the presumed and real effects in the case study.

3.3.1 Membership

As the *horizon problem* disappears, the members can capture the benefit from current and earlier investments as they withdraw from the firm. Different time horizons between members is no longer an obstacle to substantial long-term investments. Members who withdraw before

investments pay back can capture the benefits from the expected future profits when selling their shares.

There is no *problem of common property* as the shares are tradable. From this follows an enhanced ability to raise the necessary capital for investments. In order to join the co-operative firm new members need to buy equity shares, i.e. they are not encouraged to act as free riders. It is possible to have open membership provided new members are obliged to buy shares, consequently they do not dilute the equity of current members. Members' influence in the co-operative firm is connected to the amount of shares they possess, i.e. the voting right is not necessarily one member - one vote even if it is possible. The problems with unallocated capital disappear, as all capital is allocated to individual shareholders. Accordingly, market signals between the members and the co-operative firm are not distorted due to unallocated capital. A co-operative business dominated by unallocated capital will not necessarily be shut down even if the members need for the firm disappear or the profitability is low. In a co-operative firm with tradable shares, the business operations will probably be redirected, as the shareholders, strong in their investor role, want the highest possible interest on their capital. Unallocated capital is generally considered as "free capital", as the co-operative firm does not pay any visible rent. Consequently there is a risk of inefficient use of the unallocated capital. Therefore the use of capital in an entrepreneurial co-operative is probably more efficient as the equity shares have a visible price.

The portfolio problem disappears, as the members are able to contribute with equity-capital to the extent of their own risk-attitude and fortune. Consequently, the risk diversification is effective as the members have the possibility to diversify their portfolio of assets.

The price paid to the farmers should be at market rate, i.e. the same price the firm would have paid someone else. Profits made by the processing firm should not be paid as higher raw-material prices seeing that the market signals get distorted, i.e. the farmers would then extend their production volume beyond the demanded volume. The profits should benefit the members' investor role, accordingly the money should be paid as dividends to the farmers as shareowners. Another suggestion of distributing the profits include "windfall money", money the farmers are not able to predict and take into account when making their production decisions. Investments in R&D may result in new business activities to be handed over to members via shares in a new subsidiary. (Nilsson, 1997a)

An important consideration is to get good co-ordination between production and demand. Entrepreneurial co-operatives conduct business like IOFs and differentiate the prices in accordance with all types of costs. (Nilsson, 1998) There is still a principle of equality in terms of all farmers should bare their own costs dependent upon e.g. quality and quantity of delivered goods and distance to processing plant. To sum up, the market signals will be better transformed and cross subsidisation avoided due to price differentiation.

Entrepreneurial co-operatives are generally not devoted to traditional *co-operative principles*, provided they are not in the interest of business operations. The enrolment of new members should be based on economic considerations, the co-operative firm should not necessarily be open for everybody (Nilsson, 1997a). Issues on ideology, solidarity or neutrality should promote the co-operative's interest and not necessarily be restricted to the traditional co-operative principles dictated by ICA. In traditional co-operatives, no or low interest is paid on investments in order to increase production. Entrepreneurial co-operatives remunerate the

shareholders in their role as investors with help of dividend and growth of share price, of course depending on the firm's performance.

3.3.2 Marketing

With the aim of earning more money for their members a large number of co-operatives have embarked on a vertical integration strategy. The co-operatives orient their business toward branded products, value-added activities and technologically advanced products. Agricultural co-operatives with such business, closer to the final consumer, tend to be more *market oriented*. However, this does not necessarily mean the co-operatives become less member oriented, instead they translate the market signal to the raw-material production. (Bekkum and Dijk, 1997) Co-operatives with tradable shares do not necessarily need to be production oriented. They have possibilities to develop their competencies, e.g. on the market place or production methods, into new business operations based on other raw materials than them the members produce. The members benefit from their investor role and get rewarded in the form of new shares or higher share price, the latter of course provided successful business operations.

As mentioned above, the value added business operations do not necessarily have substantial economies of scale and the goods may be very supply sensitive. From this follows that the production probably is more streamlined in co-operative firms with tradable shares, in order to avoid undermining profitable business operations. (Nilsson, 1998) Consequently, such firms do not practice any obligations to accept goods. On the contrary, the members are probably obliged to deliver a certain amount as per contract or other agreement.

Entrepreneurial co-operatives probably invest more resources in R&D and international business activities. The shareholders are willing to contribute with risk-capital in such projects as they have the possibility to receive remuneration on the capital, of course provided the project's prospect of success are good. Accordingly, entrepreneurial co-operatives are probably involved in R&D and international business activities to a higher degree compared to traditional co-operatives, where the members' incentives of such investments are weaker.

3.3.3 Management

The *decision-maker problem* disappears with tradable shares. Even if the preferences among the members are heterogeneous, the management receives inputs from the share price which reflects the members preferences. It is particularly important that the management get the right signal as the co-operative is operating far ahead in the processing chain.

The *follow-up problem* is reduced due to tradable shares. The managements' achievements are judged with assistance of the share price and not only by the board of directors, as in a co-operative firm. "Stock prices are visible signal that summarise the implications of internal decisions of current and future cash flows. This external monitoring exerts pressure to orient a corporation's decision process toward the interests of residual claimants" (Fama and Jensen, 1983). Vitaliano (1983) means the monitoring assignment of the stock price is augmented by the information provided by stock analysis specialists the shares are tradable on a public stock exchange market. Agency costs due to diffuse property rights are reduced to a large extent,

consequently the risk of management promoting its own interest is minimised. The absence of unallocated capital prevents the management of making decisions out of the members' interest.

According to Cook (1994), a successful manager of a co-operative firm need skills in addition to those required of an IOF business manager. Because of the diffuseness and broadness of the co-operative firm's objectives, managers must be comfortable with vagueness and complexity. The breadth of the scope in goals makes defining task achievement more difficult in a co-operative versus an IOF. For this reason it is harder to be a successful manager in a co-operative than in an IOF. Co-operatives could be confined in their recruitment of management within "the co-operative sphere" as unique skills associated with the organisational form are required. An entrepreneurial co-operative probably has a larger base of recruitment as they can recruit managers from outside "the co-operative sphere" as well.

The management in a firm with tradable shares probably has clearer incentives in acting professional. According to the agency theory, it is difficult to assess the performance of the management in a co-operative firm. Hence it follows that it is troublesome to estimate the capability of the management in a co-operative firm. In an entrepreneurial co-operative the share price reflects the management's performance and consequently they have stronger incentives of doing well.

In firms with tradable shares, there is a possibility of implementing measures of remuneration. Several different systems exist, however, the least common denominator is the use of tradable shares. The management in a firm with tradable shares may be remunerated in accordance with the development of the share prices, i.e. the management are compensated well when the firm is doing well and vice versa. It is difficult with a similar system in a traditional co-operative firm, as the performance of the co-operative is hard to measure. This is an additional argument which strengthens the conclusion above, about more evident incentives of performing well.

3.3.4 Examples of entrepreneurial co-operatives

There are different models of entrepreneurial co-operatives. Factors like, for instance, the firm's objectives and the environmental conditions influence the design of the firm. No definite definitions of the entrepreneurial co-operatives exist and those that do designated with different terms. Two common models of entrepreneurial co-operatives are according to Nilsson (forthcoming) the New Generation Co-operative model and the PLC Co-operative model.

The New Generation Co-operatives (NGC) are characterised by delivery contracts, closed or restricted membership and far-reaching forward vertical integration. The NGCs are very market driven, they identify small market segments in order to reap large profits on value-added products. Shares corresponding to the members' deliveries of raw products finance these firms. The shares are tradable, generally within the membership or after approval from the boards of directors in case of new members, i.e. new members are recruited on economic consideration. There are generally no external investors, except banks or similar institutional investors. Nilsson (1996) However, according to Nilsson (forthcoming) the NGC model is restricted to firms with business activities not characterised by substantial economies scale.

The explanation of that is, NGCs are devoted to niche markets, where the demand of raw material is limited. From the niche-market production follows a restricted demand of investment capital required, i.e. the members manage to contribute a sufficient amount of risk capital.

Figure 3: Ownership of a PLC co-operative

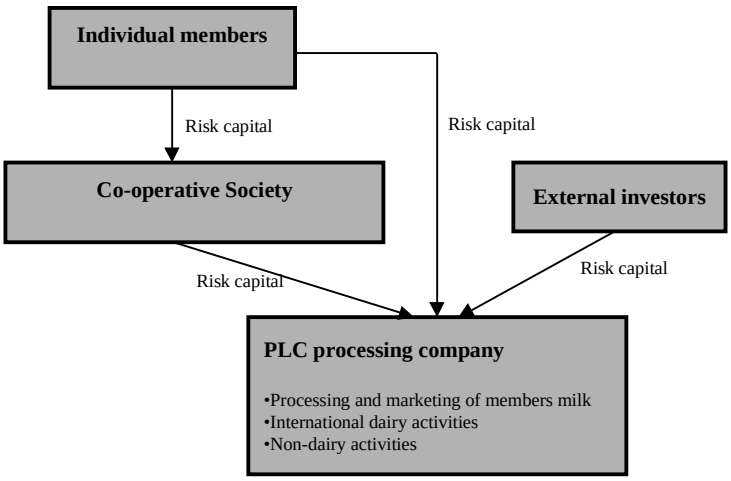

Figure 4: Ownership of a PLC co-operative

PLC co-operatives are characterised by joint ownership; the co-operative society, the members and sometimes external investors (see figure 4). Such co-operatives are active in production with considerable economies of scale. All business activities remain in the same group, i.e. the PLC. Hence, the members may not be able to provide the co-operative with enough risk capital in order to finance major investments in e.g. international expansion and R&D. A possible solution is the use of external shareholders such as other co-operatives or institutional and private investors. Nilsson (forthcoming) lists three examples of traditional co-operatives converted into stock-listed PLC co-operatives, e.g. Saskatchewan Wheat Pool, ICA a Swedish retailer co-operative that will get listed during 1999 and Irish dairy co-operatives. The Irish experiences of transformation from degenerated co-operatives, active in business operations with substantial economies of scale, into entrepreneurial co-operatives are examined in the subsequent sections.

3.3.5 External investors

The financial advantage of external investors is obvious, it is easier to attract risk capital. The objective of external investors is, according to Zwanenberg (1997), maximising the profits, with the highest possible dividends and the highest possible value for the shares. Their role in the firms is solely that as investor. The presence of external investors put pressure on the PLC co-operative to act as effectively as possible from the investor's point of view, as they are not rewarded in the role as patrons. Consequently, in order to attract external risk capital, PLC co-operatives are forced to act effective in the areas of marketing, membership and management.

The presence of external risk capital may lead to conflicts between the member patrons and the external investors. From the external investors perspective the raw material price should be as low as possible (Zwanenberg, 1997). Otherwise the raw-material price will affect the profit of the firm, accordingly the dividend and the share prices are influenced. The member patrons want the price to be as high as possible. The solution of this dilemma in the Irish dairy industry is examined in the subsequent section. From the presence of external investors follows a permanent potential threat of decisions incongruent with the suppliers' patron role. The external investor may for instance suggest moving the business to another country where the raw-material is cheaper. Consequently the suppliers are badly affected in their patron role, as they may then have nowhere to deliver their goods.

Zwanenberg means that, as long as the members have at least 50.1% of the shares they will keep full control. However, he also says even if no-members have more than 49.9% of the total share it does not mean they will not have any influence as concessions have to be made to minorities. Power is not merely wielded by the formal majority.

3.4 Combination Co-operatives

A degenerated co-operative could also transform itself into a combination of the other types (see figure 5). Provided the farmers perceive market failure on the agricultural market and the basic business operations are simple and straightforward with small need of capital, such processing could remain in a collectively organised co-operative. The business operations further downstream the processing chain that require more investments could be divided into different subsidiaries where individual members and external investors can make investments. Unrelated business activities could be sold out, i.e. transformed into ex-co-operatives. (Nilsson, forthcoming)

There are several advantages of the division of business activities into different organisational models. The market failure problems concern only the first stages of the processing chain. These problems are solved by the traditional co-operative. The members can be expected to be motivated and knowledgeable enough to control the first stages of business operations, consequently the agency problems are outweighed by better trading conditions. The value-added activities do not constitute any market failure problems for the farmers, as they do not act on those markets, accordingly it is not necessary to exercise full control. The advantages of value added production within the entrepreneurial organisations are the members gain from return on investments and not higher prices, the shares are individually owned and it is possible to invite external financiers. (Nilsson, forthcoming)

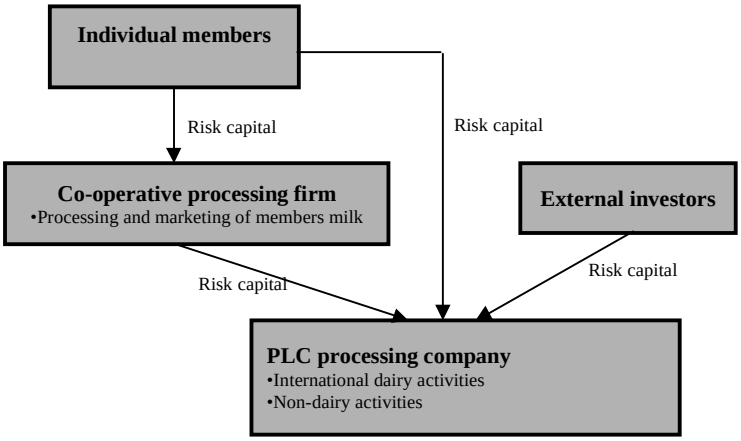

Figure 5. Ownership of a combination co-operative

In the case study four Irish dairy co-operatives are examined. Three of them are quoted on the stock exchange market in Dublin and accordingly organised as PLC co-operatives, the fourth is still organised as a traditional co-operative. They have all chosen different co-operative models. The aim of the study is to examine the influence of these differences on the organisation concerning marketing, management and membership. The firms and their financing system are first presented. The expected differences are there shown. Finally, the different organisational models and their differences are analysed with help of the analytical tools presented in the preceding sections.

4 Trends in the European dairy sector

4.1 Trends in the economical environment of the dairy-industry

The growth of *consumption* has stagnated on the European dairy market. The major determinants of the marginal growth of consumption are the change in the demographic structure. The population is ageing. Consumers are nowadays generally more demanding and aware of freshness, healthiness and convenience of the dairy products. Consumers are more concerned than ever to have "user-friendly, ready-to-serve, high quality and good tasting food, at better value". (Boccaletti, 1998) In order to meet these demands, the dairy production in the mature food market of the western countries has shifted towards products which provide higher added value.

There is a considerable concentration trend in the European *retailing sector*, resulting from the need to achieve operating efficiencies. The large food retailers have entered an internationalisation process with business activities abroad. Parallel to this process, cross boarder alliances and Pan European groupings have also emerged in order to gain strength in negotiations with manufacturers. (Collins, 1998) The use of private labels is another important element, which helps retailers to exert pressure on their suppliers. The manufacturers producing products sold under the retailers' own brand can very easily be exchanged. (Bekkum and Dijk, 1997) This is a threat to manufacturers selling branded products, in particular, as the private labels tend to expand into high value segments of the food market. (Collins, 1998)

Changes in the European *public policies* play a decisive role for the dairy industry. Price supports and production quotas affect the European dairy production while subsidies, import levies and similar trade barriers influence the export of dairy products. Reformation of CAP (Common Agricultural Policy) together with the recent GATT-agreement (General Agreement of Tariffs and Trade) and future negotiations under the WTO (World Trade Organisation) reduces the impact of certain political arrangement on the dairy sector (Bekkum and Dijk, 1997). The dairy policies are gradually liberalised and the coming WTO negotiations will probably put heavy pressure on EU to deregulate. The introduction of the European Monetary Union (EMU) has lifted the borders between the countries and increased the competitive pressure within EU (Bekkum and Dijk, 1997) The general trend of *internationalisation and liberalisation* will put hard competitive pressure on the European dairy industry. The enlargement of EU to Eastern Europe will require reformation of the CAP in order to narrow the gap of the support price paid between the EU and Central and Eastern European countries, where the prices are lower (ABN-AMRO, 1996). Free trade under world market price is probably inevitable. The quota-limits on production inhibit rationalisation and stifle innovation and development of the dairy industry. Major investments in the dairy production technology are hampered, as there is no prospect of increasing the capped output. The obstacles of increasing milk production reduce the possibilities of capturing market shares on growing consumer markets, for example in Asia, to the benefit of Australia, New Zealand and USA. The EU share of world dairy export will probably fall from about 50% to 45% by the year 2000 due to the existence of the quota system in the presence of rising world production. (ABN-AMRO, 1996) The milk-quota regime will remain in its current form until 2006. However, the EU intends to reform the quota regime beginning in 2006.

4.2 Trends in dairy manufacturer strategies

The forces mentioned above is driving the dairy industry to be more *market oriented*. The food industry conditions have changed from being product driven to be more market driven. Market orientation is a natural part of an IOF's strategy, such firms base their production on market needs. Consequently, such dairy firms purchase merely the amount of milk corresponding to the consumers' demand. Bekkum and Dijk (1997) say there is a current trend among agricultural co-operatives towards an increasing degree of market orientation. They also mean it is no contradiction to the member-orientation, as it is generally in their own interest.

The processing firms are expanding on the *international markets* and on the market for *value-added products* in order to reap larger benefits. They need to strengthen their positions in a gradually liberalised world with demanding consumers and increasing power among food retailers. Branding and product development are necessary strategies in order to gain market power dealing with the concentrated retail-sector. (Bekkum and Dijk, 1997) New product introduction is vital for food processors, which compete in a highly saturated market. Market segmentation, competition through differentiation and quality of products replace price competition. (Keane, 1998) According to ABN-AMRO (1996) the best performing dairy enterprises are "those adding the most value". ABN-AMRO (1996) means that the dairy market is divided into low-value commodity where growth prospects are poor and higher value-added branded products where growth will be faster. Dairy enterprises pursue moving toward more value-added products as a response of the consumers' demand. (Tozanli, 1998)

According to Tozanli (1998) there is a "high concentration process ubiquitous in the European dairy industry where the major tendency is towards an undeniable oligopolistic market structure." Large manufacturing firms, less than 30 in number, are the dominant players on the European dairy market. The European dairy processing firms use mergers and acquisition operations and strategic alliances between food manufacturer in order to reap *economies of scale*. (Tozanli, 1998) Bekkum and Dijk (1996) show that there is a trend among co-operative firms by means of mergers and acquisitions and establishment or purchase of production plants abroad in mostly the same way as IOFs. The degree of internationalisation within the food-industry is inevitably increasing. Examples of mergers within the co-operatives sphere is among others the merger of the Irish PLC co-operatives Avonmore and Waterford into Glanbia PLC during 1997 and the merger of the Dutch dairy co-operatives Friesland Frico Domo and Coberco.

The dairy co-operatives are still heavily weighted towards production of low-value commodities, i.e. bulk products. However, quite a few co-operative firms are active in developing new products and investing in R&D in order to keep up the competition with the IOFs. (Bekkum and Dijk, 1997) Such movements require considerable investments, but smaller dairy enterprises and co-operatives can hardly afford such investments (Tozanli, 1998). There are some co-operatives making radical changes regarding their capital structure, becoming more market-oriented and producing more value-added products (ABN-AMRO, 1996). The crucial point of success or failure of the European co-operative dairy firms on the current and future markets is according to Noeme (1998), the solution of their *financing problems*. In order to keep up the pace in the areas of R&D, product development, international expansion etc. the co-operative firms have to solve the problem of getting risk-

bearing capital. There is a big distinction between the IOFs and the co-operatives regarding their access to risk-bearing capital. Public dairy companies have unlimited access to new equity capital, provided they can convince investors that their business operations are profitable. The co-operatives' problems consist of "advanced payments to their adherent members resulting in a great deficit problem and financing bottlenecks" (Noeme, 1998). Noeme (1998) means these financing problems inhibit the co-operatives to grow beyond their local and regional markets. The key question is whether the members merely should finance their co-operatives or whether external investors should contribute with risk-capital. The disadvantage with solely member financing is the limitation of the members' ability or willingness to contribute with sufficient capital. Members in co-operatives with non-member capital bear instead the risk of losing influence in the firm. However, still new market conditions necessitate the traditional co-operative firms to solve their financing problems and move toward more value-added business operations. To sum up, the traditional dairy co-operatives probably have to follow a more entrepreneurial logic to cope with current and future market conditions.

4.3 The Irish dairy sector

Agriculture occupies a very important position in the Irish economy. In 1997 about 14% of the GDP, IR£48.2 billion, was contributed by the Agri-food sector, of which the gross agricultural output was 6%, i.e. primary agriculture. The dairy sector contributed with 37% of the gross agricultural output. This is a considerable level by EU- standards, where about 18% of the total agricultural production refers to dairy production. The primary agricultural production accounted for 10% of the employment in 1997 (134 000) and the agri-food sector in total about 13% of the employment. (DAF, 1997) Currently there are about 40 000 dairy farmers, however, the number is continuously declining.

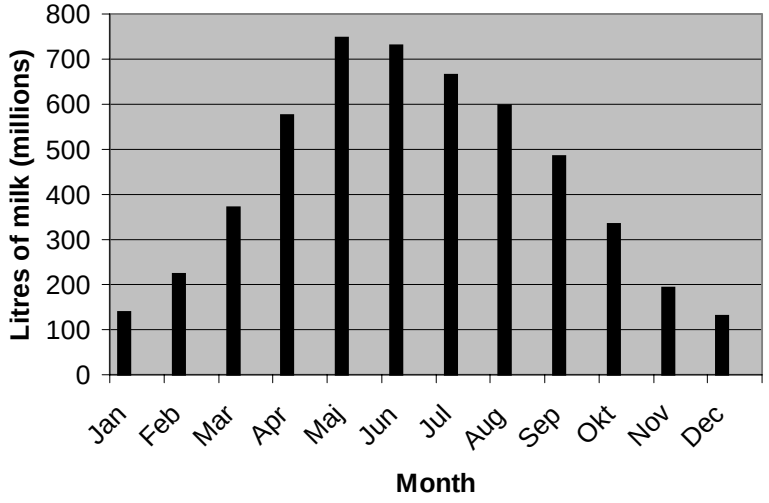

Figure 6. Volume of monthly milk collection, Ireland 1996. Source: Donellan (n.d.)

The pattern of milk production in Ireland is in nature highly seasonal as it is a grass based production system. Milk production is linked to Ireland's mild climate, which allows a very lengthy grass-growing season of approximately nine month. This causes production to be mainly concentrated into the period of April to September. About 70% of the milk is produced

at this time (see figure 6). Most cows in EU countries are fed indoors for perhaps 6 months. From this follows a more even milk supply. (Keane, n.d.)

The Irish annual total milk output in 1996 was 5,197 million litres, approximately 5% of EU's total milk supply. The national dairy herd consists of 1,320 million cows and the milk yield per cow in Ireland is about 4,000 litres, approximately 80% of the average amount of milk per cow in EU. (CSO, 1997)

The milk production system is structured along two segmented lines viz.

- Liquid (drinking) milk production.
- Manufacturing (creamery) milk production.

The liquid milk is produced by a distinct group of milk producers, contracted on a pre-specified volume of milk for delivery on a year round basis. Accordingly they are compensated with a higher milk price, approximately 10% higher relative to the manufacturing milk over the year due to the higher costs associated with winter-feeding of the cows. The liquid milk is processed exclusively for the Irish market. The demand of liquid milk is dictated by domestic consumption patterns. Consequently the production of liquid milk is relatively static, approximately 10% of the Irish milk supply is produced for the domestic liquid market. (Donnellan, n.d.)

Manufacturing milk suppliers produce milk for use in the manufacturing of butter, cheese and SMP (Skimmed Milk Powder). About 90% of the milk supplied to the market in Ireland is processed into manufactured milk, i.e. milk essentially produced during the grazing period. The usage of the milk is presented in figure 7.

The major part of the whole milk, 5,300 million litres, is used for butter and cheese, 60% and 18%, respectively. About 46% of the skim milk, 3,700 million litres, is used in the manufacture of SMP and a further 40% is used in the manufacture of casein. (Donnellan, n.d.) Ireland is the highest ranked EU country in terms of percentage of milk allocated to butter, casein and SMP. (Keane, n.d.)

Keane (n.d.) explains the Irish dairy manufacturers' product choice by the influence of three powerful factors that have resulted in a product portfolio, which differs substantially from other EU countries. It is the consequence of a combination of the EU dairy policy, peripheral location and the seasonality of the milk supply.

In EU terms, the Irish milk supply pattern is unique due to the highly seasonal milk deliveries. The total milk supply has about a 5.5:1 peak:lowest month milk deliveries. This is far higher than any other European country (see figure 8). From this follows, compared with other European dairy countries, substantially lower average costs on farm level. However, extra costs have to be made in the processing industry to deal with the high peaks in milk supplies. It creates major disadvantages at assembly, processing, storage, distribution and marketing level. The annual plant utilisation is much lower, approximately 55% of the annual capacity. The return for the processed milk is relatively low, since it is difficult for dairy processors to get a high return for the peak milk on the market, as the consumption pattern is comparatively even. Consequently the highly seasonal milk deliveries induce a product portfolio weighted heavily toward long-term storable products. According to Keane (n.d.) the benefits of

manufacturing, provided an even supply pattern, is substantially less than the increased cost at farm level. However, if market opportunities in value-added segments are identified, which require an even milk supply pattern, then these opportunities have to pay the extra cost associated with an even supply.

The other two factors affecting the Irish product portfolio are the EU dairy policy and Irelands peripherality in an EU context. The EU policy involves a price support system in the form of an intervention price maintained by trade policy, i.e. import levies, export restitution's, and limited production with help of the quota regime introduced 1984. Most internal EU countries are more than 100% self sufficient in dairy products. From this follows that Ireland is unfavoured within EU due to higher transportation costs and the perishable character of several milk products. The world market has a concentration on dried products. Consequently the Irish dairy manufacturers are reduced to export dry storable goods to EU's guaranteed intervention price to third countries. (Keane, n.d.)

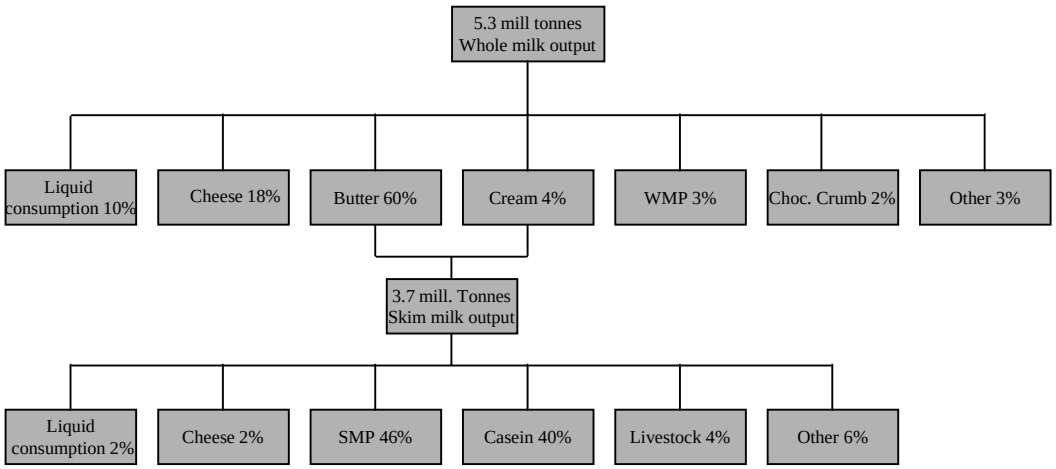

Figure 7. Representation of milk usage in Ireland. Source: Donellan (n.d.)

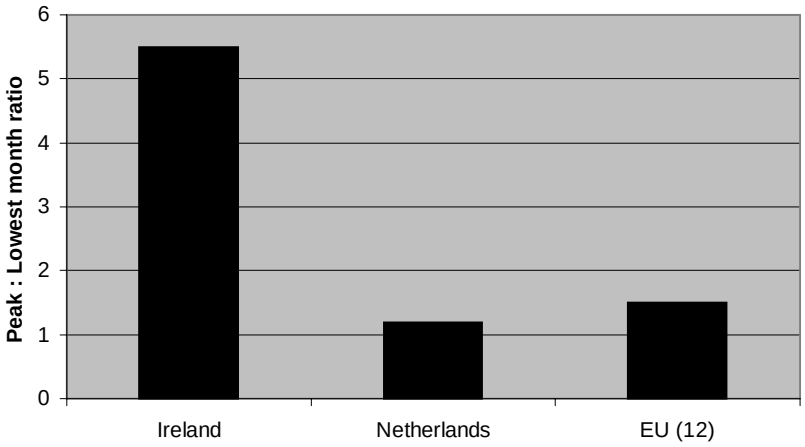

Figure 8: Seasonal milk supply pattern. Source: Keane (n.d.)

Ireland is only a minor producer in world terms, 1% of the total world milk output (470 million tonnes - 1997). However, due to a high level of production relative to domestic consumption, 75% of the milk output is estimated to be exported. (Donellan, n.d.) The world trade of dairy products is rather limited, about 10% of the world milk production. Hence, Ireland's importance as an exporter of dairy commodities is considerably greater than its position as producer. Irish dairy exports are as much as 5% of world dairy exports. (Donnellan, n.d.)

If the home market is excluded, intervention sales as a proportion of export availability is of the order of two-thirds in the period of 1990-91 (Keane, 1992). *The interviewee's representing the dairy processors claim that the processors in general sell the commodities to intervention price with a satisfying profit due to the low costs in the production of raw milk.* To sum up, the Irish dairy industry is very dependent on the export of commodities and intervention sales. The larger processors are aiming to move toward more value-added products in order to reduce this dependency. The industry is in a vulnerable position remaining dependent on intervention arrangements which have an uncertain future as argued above.

4.4 The Irish dairy industry

Processors within a co-operative structure, controlling about 95% of all milk delivered, dominate the Irish dairy industry. There are 36 dairy co-operative registered in Ireland (ICOS, 1997). Over 70% of the milk-supply is controlled by four of these co-operatives. The smaller co-operatives have tended to remain as commodity producers with few exceptions, while the four largest have diversified into many different product areas. The latter are Dairygold Co-operative Society Limited, Glanbia Group PLC, Golden Vale PLC and Kerry Group PLC, all ofwhom are located in the southern parts of the country (see figure 9).

The dairy co-operatives generally reflect a mix of operations and are considered as multi-purpose co-operatives. Other major operations outside dairy processing the firms are involved in; farm inputs, meat processing and livestock marts. The Irish processors were all organised as co-operatives until 1986, when Kerry then exchanged its assets into a public limited

company (PLC). A few years later, Avonmore, Waterford and Golden Vale followed the PLC route in order to attract outside investment capital. Dairygold decided to retain the traditional co-operative structure. The firms that have changed into the PLC structure are partly still considered as co-operatives by ICOS (Irish Co-operative Organisation Society). The reason is that co-operative societies in the organisational structure still exist in these firms. However, here they will be called PLC co-operatives.

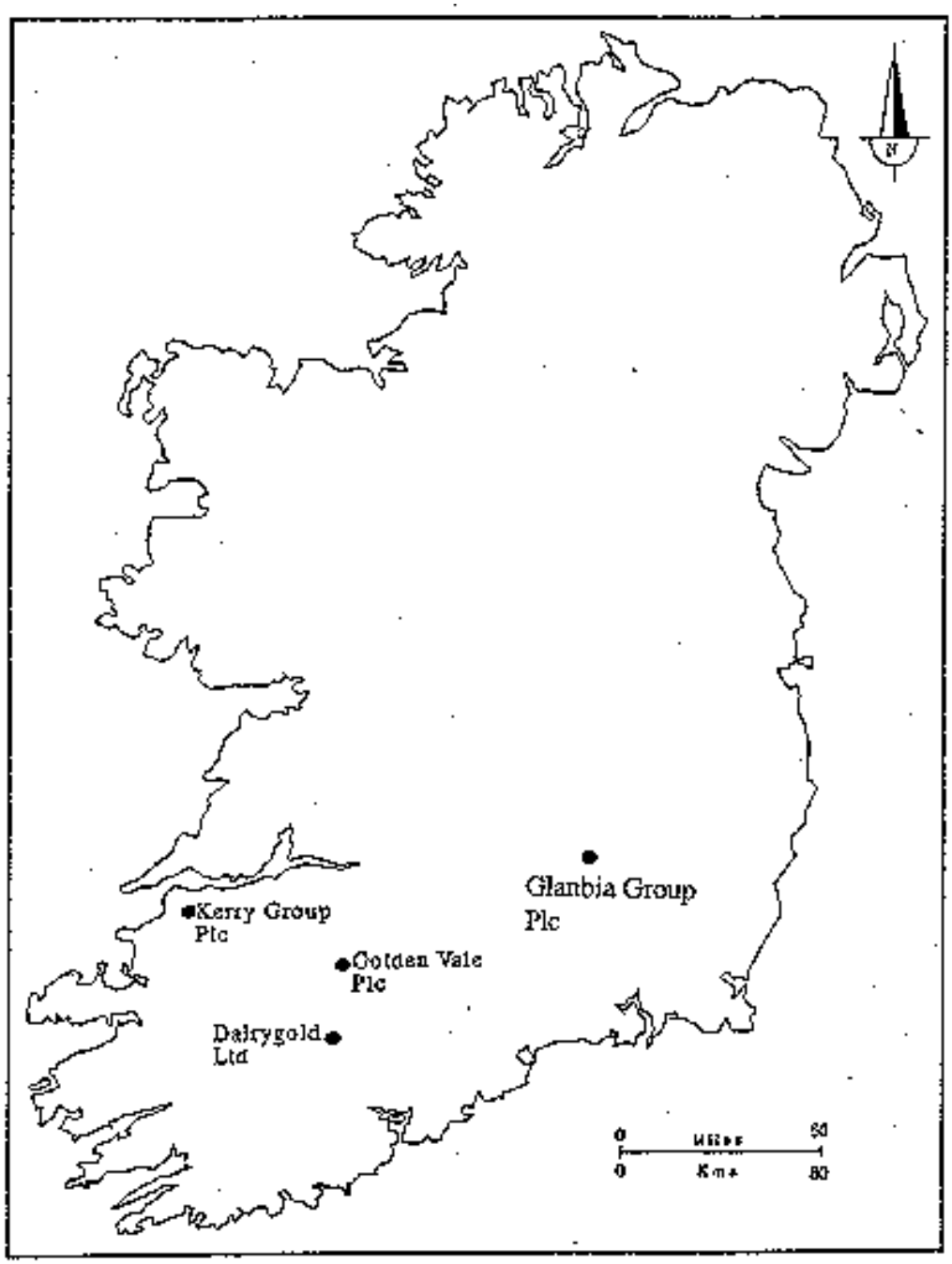

Figure 9. Location of the "big four" dairy co-operatives in Ireland.

5 Transformation into PLC

In order to understand the current organisation of the Irish dairy processor the conversion from traditional co-operatives into PLC co-operatives will be analysed using the analytical tools presented in the former sections. The problem is examined mainly using the research studies of Jacobson and O'Leary (1990) and Harte (1997), supplemented with the interviews made with people involved in the Irish dairy industry. In the survey conducted by Jacobson and O'Leary, they state essentially two primary and one secondary reason as the cause for the co-operatives transformation into PLCs.

1) Gain additional capital for growth.
2) Provide the shareholders with a current market value for their shares.
3) Provide a mechanism to motivate and reward executive management.

These objectives are analysed in the following section using the theories presented in the preceding sections.

5.1 Gain additional capital for growth

As the milk-quotas were introduced in 1984 a limit was placed on the expansion of milk production and consequently on the scope for expansion for dairy processors. Against this background, in combination with the increasing globalisation of economic activities, the scope of growth of the larger processors has been in overseas expansion through acquisition of existing facilities. Up to then the dairy co-operatives had in general only grown organically. The introduction of the quotas was also followed by changes within the firms. Greater attention was i.a. focused on added value products and manufacture of dairy ingredients for specific end-uses. (Enright, 1997) Enright (1997) says "the need for funds to finance this more commercial and international outlook has led to the adoption of the financial structures of several of the large processors to avail of capital from the stock market." Jacobson (1992) has a similar explanation to the emergence of the PLC activity among the dairy co-operatives. He says that additional capital was required to pursue various growth objectives and that the introduction of milk-quotas was a factor placing pressure on the dairy enterprises to seek additional milk supplies or/and to diversify in various ways. The growth objectives dominated the discussion of going PLC. (Jacobson, 1992)

The interviewed experts and managers by and large confirm the view of Jacobson and Enright about the co-operatives' pronounced strategy of growth, before they transformed into PLCs.

"The equity requirements was based on strategic plans which essentially said more value-added products were needed. They were interested in moving from commodity into value-added products. The larger co-operatives were looking more and more outwards as they recognised they had scale-problem compared with their competitors." (O'Donohoe, pers.comm.)

"They could not expand within Ireland in the dairy sector because of the milk quotas. They started to talk about acquisitions internationally and they needed to finance that. Kerry

already had an international and value-added strategy, but they could move it along much better by going PLC." (Keane, pers.comm.)

"Kerry started the process, they had a desire to grow their business and expand their business into foreign markets." (Ward, pers.comm.)

"The quota introduced in 1984 closed off the possibility to expand the dairy core business and took away the need for funding. The real use of the funding was to diversify the business away from the core dairy sector and eventually diversify internationally." (Harte, pers.comm.)

"The main reasons were the introduction of the milk quota regime in EU and we realised that the production was limited. Consequently the scope to grow the company was also limited. The companies needed to diversify to grow. In that diversification we realised that the cash-flow from the existing business had a very limited profitability from milk. The profit stream was going to be limited in the future from the core business. The strategy to grow and diversify could not come from the core business it had to come from acquisitions. To fund these acquisitions the core profit stream was limited so we had to have new sources of funds." (Flynn, pers. comm.)

"Initially it was twofold. In the first instance it was a mechanism that released the wealth accumulated by farmers as a co-operative for many generations. It allowed farmers to cash in their value, as they before were only redeemable to a limited extension. It gave the members opportunities to cash those shares and invest the money in their own farms if the wanted to. The second objective was to raise cash relatively inexpensively." (Lynch, pers. comm.)

"Our management and farmers were looking for something dynamic that would ensure that their industry would survive. In 1980 it became apparent to us that relying on milk was not the way forward. Milk-quotas were glomming our future and we would then have the straitjacket of production control. To grow in a sustainable way we wanted to ensure following three elements: strategy, capability and capital. We had a good strategy with casein production and value-added products. We also knew that having all the eggs in the same basket was not the way to go. In terms of capability we had invested and recruited in top people, which were well educated and moveable. However in these days were very little capital available, many co-operatives were not profit and growth orientated. In 1985, Kerry had identified a number of areas in which we wished to grow, and we then set on to solve the capital issue. It became apparent that there was only one way forward and that was to become a public company." (Heyes, pers. comm.)

The general conclusion is that the Irish dairy co-operatives had ambitions to expand their businesses. The objectives of growth due to the production limitations of the quota regime were away from commodities into value-added products, diversification into other businesses and international expansion. A secondary reason was probably providing the members with a market value of their shares.

5.2 Management urge organisational changes

The investments described above were probably not induced by the members. Jacobson (1992) explains that the growth objectives were management driven rather than member oriented. The leadership thought it was necessary to grow in order to survive. They wanted to increase market shares, economies of scope and scale and they saw rewards to management that could not be realised under the traditional co-operative structure. The answers from both the experts and the people representing the dairy enterprises suggest that the expansion of the firms was very much driven by the management of the dairy co-operatives.

"The members were not demanding a change, the management were the movers." (Keane, pers.comm.)

"At that time I would say it was initiated by the management." (Lynch, pers.comm.)

"It was induced by the management and the board members, that reflected the view of the members. I think the inducement came originally from the management. They were looking for opportunities and then came back to the board and reported that." (Heyes, pers.comm.)

"There is a push from the management side as well. They realise there are tremendous benefits in going PLC, they become aware that once the business get privatised they have very attractive compensation packages and share options." (Briscoe, pers.comm.)

"The management initiated the PLC discussion. Kerry decided to expand the business in an organisational perspective. They did not want to rely on merely the dairy production in an organisational perspective. " (Harte. pers.comm.)

The management thought it was necessary to expand the business from an organisational point of view. Before the co-operatives transformed into PLCs they were not practising any management reward system at all. Accordingly the managers as individuals could benefit from an organisational change.

5.3 The Irish co-operatives had departed from co-operative principles

Before some of the Irish dairy co-operatives converted into PLCs, they were in general organised according to the traditional co-operative principles quoted by ICA. They practised open membership, one member one vote, limited interests on capital etc. Hence, they could be considered as traditional co-operatives. The survey conducted by Jacobson and O'Leary in 1989 comprised among others the four enterprises studied in this thesis. However, the "big four" enterprises were the "big six" enterprises at the time for their survey. The former "big six" altogether have about 41 000 members and 55% of the co-operatives members are milk suppliers (see table 1).

Dairy processors 1999	Dairy processors 1989	Total shareholders	Milk suppliers	Dry shareholders	Non-member milk suppliers	Dead or non-traceable shareholders
Glanbia	Avonmore	13 000	4 000	6 000	Nil	3 000
	Waterford	7 000	3 218	2 750	1 000	1 000
Dairygold	Ballyclough	4 419	3 431	1 353	1 007	few
	Mitchelstown	4 500	2 877	2 500 (a)	900	700
	Golden Vale	7593	4243	4350 (a)	1000	-
	Kerry	6000	5000	500	2000	-
	Total	41012	22786	17453	5907	4700
	% of total shareholders		55.6%	42.6%	14.4%	11.5%

(a): Some of the dry shareholders may be patrons although they are not milk suppliers

Table 1. The share-holding structure of six Irish dairy co-operatives 1989. Source: Jacobson and O'Leary (1990)

About 43% of the members are classified as dry shareholders, i.e. shareholders who no longer patronise the co-operative or members who only patronise the non-dairy section of the co-operatives. Approximately 12% of the shareholders are dead or cannot be traced and about 14% of the suppliers are not shareholders. The data suggests, according to Jacobson and O'Leary (1990), that the membership of their co-operative may be largely irrelevant to many farmers as many milk suppliers do not even become members and shareholders do not or cannot redeem their shares. Suppliers may perceive little or no benefit in membership and retiring members usually do not bother to resign their membership. According to Jacobson and O'Leary equity redemption policies among the dairy co-operatives were almost non-existent.

The Irish farmers have historically shown very small interest in direct investments in the co-operative firms. Table 2 illustrates that the financing by contributed share capital is only 3.5% of the total sources. Internally generated funds have provided 66% of the capital subscriptions.

Sources	£000	%
Generated from operations	240 707	66.2%
Capital grants received	29 049	8.0%
Additional share capital	12 713	3.5%
Annual additional borrowings	81 299	22.3%
Total	363 768	100.0%

Table 2. Sources of funds between 1974 and 1983 in the largest six co-operatives, i.e the co-operatives conducted in this thesis. Source: Butler and Mohn (1985)

There has been very little allocation of annual surpluses by the six largest dairy co-operatives. Virtually all of the surpluses have been designated as unallocated reserves. In the surveyed organisations shareholders equity allocated are only 9.7% on average (see table 3). The co-operatives have been financed by a substantial amount of unallocated capital. The share par value is stipulated to £IR1. From this follows wide disparities in market values and par values. The implicit value of the shares is substantial. There are some Irish experiences where co-operatives have been taken over by outside investors due to substantial numbers of inactive shareholders and lack of allocation and redemption of equity shares.

		Total assets	Share capital	Shareholder reserves (unallocated)	Total shareholder interest (member equity)	% of shareholder equity allocated	Equity as % of total assets
Glanbia	Avonmore	190,750,000	8 042,000	76,225,000	84,267,000	9.5%	44%
	Waterford	87,851,000	4 859,000	46,456,000	51,315,000	9.7%	58%
Dairygold	Ballyclough	54,349,000	3 576,000	27,808,000	31,384,000	11.4%	58%
	Mitchelstown	85,602,000	746,000	46,459,000	47,205,000	1.6%	55%
	Golden Vale	49,616,000	4 079,000	17,502,000	21,581,000	19.0%	43%
	Kerry	276,757,000	7 219,000	51,043,000	58,262,000	12.4%	21%
	Total	744,925,000	28,521,000	265,493,000	294,014,000	9.7%	39.5%

For the PLCs with a co-operative in their structure the data are for the co-operative component of the organisation. At this time Golden Vale was not converted into PLC.

Table 3: Allocation of sharecapital (1988). Source: Jacobson and O'Leary (1990)

Jacobson and O'Leary's (1990) conclusion is that, given the circumstances above, it was no surprise the farmers were unwilling to invest capital in the co-operatives. The authors state that "it was not co-operative principles that were deficient, but rather the failure to adhere to co-operative principles that undermined member investment in the co-operatives."

5.4 A transaction cost explanation

Harte (1997) does not agree with the explanation of Jacobson and O'Leary, that the shift away from the co-operative organisational form is a consequence of carelessness of adhering to the co-operative principles. Nor was the reason a need to provide the co-operative dairy business with more equity funding. Harte (1992) asserts that the Irish dairy industry had generated more money between 1984-91 than was needed in order to fund the core dairy business. The reason was rather the very low growth of the dairy sector since 1984 when the quota regime was introduced. The demand of equity in the late 1980's was probably based on investments needs and potential of diversification into other businesses. The developments of the PLCs were probably not in the interest of the dairy farmer shareholders. (Harte, 1992) He states that the move into PLCs is a more fundamental change, which is justified on transaction cost grounds.

According to Harte (1997) the need for the Irish dairy farmers to vertically integrate in co-operative firms into downstream processing and marketing is weak or non-existent. This is deducted from his statement of that there is little evidence of market failure on the Irish dairy market. He considers the Irish dairy market to work well as there is a relatively large amount of potential purchasers of milk and the concentration of the largest buyers is proportionally low. In 1994 there were 54 registered purchasers of milk and the concentration ratio of the four largest purchasers, i.e. Avonmore, Dairygold, Golden Vale and Waterford, were estimated at 52%. Their possibility to exercise local monopsony power is limited due to a relatively homogeneous product and high market transparency, through the milk price comparison such as the Irish Farmers Journal Milk League. The scope of local exploitation is restricted. The farmers may perceive they are in a weak bargaining position due to their large number and small size. But their power has been enhanced by the quota regime in that it creates a higher entry barrier in dairy farming. Farmers are not allowed to produce milk

without quota. (Harte, 1997) Even if two of the dairy processors have merged the dairy market is still competitive from the farmers perspective (Harte, pers. comm.).

The interviewees largely confirm the view of a relatively competitive market situation on the raw milk market, without any general traits of market failure.

"That is realistic, over the years we have lost suppliers that have changed processors as outprice was not competitive. It is a sellers market in the perspective that the capacity was built in prequotas days and there is a cap on the supply. The capacity is greater than the supply pattern. It has been largely a position that favours suppliers. There has been some attempt to recruit suppliers from other processors every now and then by offering a better price." (Lynch, pers.comm.)

"If they are close to the border they could switch. But if they live in the middle of the geographical area of a processor they would not have that possibility. Provided the processor is proceeding reasonable well compared to the competitors they will probably stay. If they are proceeding badly there is a possibility that there are blocks of them that will move." (Myers, pers.comm.)

"We do not have any particular problems with that, the tendency is that farmer rather come to us than go away from us. We have requests from time to time from people that want to join us." (McCormack, pers.comm.)

"It is possible, but in some areas geographically it is difficult. Physically it is possible a lot of processors overlap each other's areas. There is a potential threat that they might move." (Briscoe, pers.comm.)

"It is a kind of seller's market, but not in the sense milk is moving outside the processing areas. There is a sort of gentlemen's agreement. Farmers are changing processors on the fringe but never in the middle of the areas." (Flynn, pers.comm.)

"These sort of concerns have not been with us for 20 years, we have not had that experience." (Heyes, pers.comm.)

"It is not so very easy to change milk supplier. That is an indicator that it is not totally competitive. There are certain procedures and they have to give a note in three month advance. But they have the possibility. The transport cost or quality problems is not an obstacle in changing processor." (Keane, pers.comm.)

"They have the possibility at the margin. At the same time there is not much possibility to change in the middle of for instance the Avonmore Waterford area, but on the periferbility there is a possibility. The transparency that is in the price comparison is some protection to farmers even in the centre of one area. There is a potential threat that farmers might change dairy company." (Harte, pers.comm.)

The conclusion is that the farmers in general have the possibility to change processor if they are discontented with the prevailing conditions. Even if the farmers in the middle of an area of a processor do not have much possibility to change, the transparency of the price protects

them. The processors in the survey do in general perceive a potential threat that farmers might move, if they do not pay a sufficient price.

5.5 Analysis of the transformations into PLCs

The article by Harte (1997) and the interviews suggest that there are good reasons to believe that the farmers on the Irish milk market are not exposed to *market failure*. There are a large number of processors and the actors are fully informed about the price. The milk-quota system restricts the supply of raw milk and entry into the primary production. The intervention system guarantees that the processors' dispose of the commodities. The low production costs due to the Irish natural prerequisites implies that the processors in general can sell their commodities with a satisfying profit. Accordingly, the raw milk is very coveted due to the restricted supply and the profitable sale. The Irish milk market could be considered as a "sellers market". Consequently, the processors have small incentives of behaving opportunistically against the farmers. Therefore, the farmers do not have to integrate vertically in order to protect their specific assets in milk production or due to their dependency of frequent collecting of milk. The conclusion is that farmers have small incentives according to the *transaction cost theory* in organising the processing of their milk in co-operative firms.

The Irish dairy co-operatives did not correct any market failure. Therefore the members did not appreciate their *patron role*. The large number of non-member suppliers and dead and non-traceable members confirm this. The suppliers and members perceived very little benefit in membership. The large number of "dry shareholders" and the multipurpose strategy of the co-operatives suggest that the membership probably was very heterogeneous.

The members also had a small interest in their *investor role*. The financing by contributed share capital is almost non-existent and there has also been very little allocation of annual surpluses. The use of unallocated funds has financed most of the investments.

The members' weak interest in both their patron role and investor role suggests that they probably had substantial *property rights problem* and *agency problems*. The former traditional co-operatives could therefore be considered as *degenerated co-operatives*. There was no immediate threat against the political system guaranteeing the disposal of the milk and the quota regime at the time of the transformation into PLCs. The investments were most likely in the interest of the processing firms in an organisational perspective. Changes were necessary in order to stimulate the development of the processing firms. The *heterogeneous membership* had small incentives of monitoring the co-operatives due to the absence of market failure, which also increased the risk of agency problems. The *follow-up problems* probably gave the management a larger freedom of movements and from a perspective of organisational growth they could induce the conversions into PLCs. The investments into value-added processing, diversification into other business and international business activities were probably not primary in the members' interest. This is supported by the fact that no extra funds were needed at the time of transformation in order to finance the core dairy business. The adoption of a management reward system was probably subordinate to the growth of the businesses. Expansion of enterprises' size into businesses out of interest of the owners is referred to as the *portfolio problem*. The investments were not made with regard to the members' own risk preferences. The heterogeneous membership suggests that the board of directors and the

management of the co-operatives probably had difficulties in assessing the members' opinion regarding investments, i.e. the *decision-maker problem* was present.

The high proportion of unallocated capital probably supported the agency problems. Unallocated capital does not promote an active governing and increases the likelihood of that management takes control. The co-operatives had substantial property rights problems. Due to the large amounts of unallocated capital the members had no claim on substantial parts of the assets. The shares were only redeemed at their nominal value. Consequently the members had small incentives of investing in the co-operative firm as their residual claims could not be transferred when they withdrew, i.e. *horizon problem*. The use of open membership encouraged members to act as free riders and entailed the *problem of common ownership*.

The Irish dairy co-operatives could be considered as *degenerated co-operatives* before the transformation into PLCs, due to the members' weak patron role and investor role. The reason is the lack of the co-operatives correction of market failure to any significant degree, which lead to substantial property rights problems and agency problems. These problems associated with degenerated co-operatives could be solved by introducing *tradable shares*.

6 Membership

6.1 Dairygold Co-operative Society Limited

6.1.1 Production and marketing

Dairygold Co-operative Society Limited is the largest non-PLC co-operative in Ireland. It is a relatively new co-operative that was born out of the merger of Mitchelstown and Ballyclough in 1990. The volume of milk processed in 1997 was 755 million litres (Annual report 1997).

Dairygold's total turnover in 1997 amounted to IR£ 617 millions, of which 58% was realised in Ireland, 27% in the UK, 15% in the rest of Europe and 10% in the rest of the world. Dairygold has subsidiaries mainly in the UK. Dairygold is a multipurpose co-operative. The co-operative has business activities in the areas of meat production and agri-trading besides the processing of milk. 52% of the turnover was realised in dairy products, 26% in meat products and 22% in agricultural and retailing. Dairygold processes about 482,000 pigs and 151,000 cattle. The products in the enterprise is divided into four divisions:

- *Consumer Products:* The Consumer Products division is active in producing natural and processed cheeses. Other areas are the processing of spreads and fresh dairy products like yoghurt, deserts and liquid milk.
- *Food Ingredients:* This division is processing products like, skim milk and whole milk powder, butter, casein and whey powder.
- *Galtee Foods:* The Galtee Foods division is producing beef and pork products.
- *Agri-Trading:* The Agri-Trading division manufactures and sells animal feed and fertiliser to its suppliers.

6.1.2 Membership

Dairygold has retained its traditional Irish co-operative structure. The co-operative is applying open membership. New members are expected to buy a minimum of IR£50 of shares plus 3 pence for every 100-kg of milk supply based on yearly milk-quota. They are free to buy more shares up to a limit of IR£20,000. The members are entitled to one vote in the co-operative. (Cunningham, 1993)

A person who withdraws from the co-operative is entitled to redeem his shares at the par value of the shareholding. Members' membership could also be terminated if they do not supply farm products or purchase goods from the society. The shares should then be cancelled and invested capital repaid. Dairygold has about 1500 dead or non-traceable members according to McCormack (pers.comm.). In the rules of the society, policies are put in place in order to deal with unclaimed shares of deceased members and untraceable members. If the inactive members or their relatives do not lay claim on the shares, the society can suspend their membership. However, McCormack says they do not force the inactive members out of the society. It has been practised in the past, but people were upset and felt they were thrown out of the co-operative. He explains it was not worth it and that it is not a problem to retain those members in the co-operative except that they keep their voting rights.

The milk is delivered by the 5527 milk suppliers, of which 87% are members of the co-operative (Zwanenberg, 1997). Dairygold has non-member suppliers in both Ireland and UK.

In 1993 the Dairygold board examined the possibilities of changing the co-operative into a PLC and it was decided that for the foreseeable future the question of converting into PLC was off the agenda. The reaction of the milk suppliers was very positive; their view was that the co-operative structure was their best means of obtaining the optimum price for milk supplied. (Zwanenberg, 1997) The board also felt according to Zwanenberg (1997) that the co-operative has no need for stock market funding to fund acquisitions. Dairygold has a very high degree of solidity, about 89%, i.e. there is probably no immediate need for risk-bearing capital (see table 4). The largest part of the capital consists of unallocated reserves, only 17% of the shareholder funds are allocated to the members.

Capital and reserves (IR£ 000)	
Share capital	34,926
Capital reserves	10,831
Revaluation reserve	38,619
Profit and loss account	117,066
Convertible Stock (a)	258
Bonus reserve (a)	2069
Shareholders funds	**203,769**
Capital grants	8506
Creditors (b)	16,519
Provision for liablilties and changes	1950
Total assets	**230,384**

(a): Capital still not allocated, but can be converted into ordinary share base.
(b): Bank loans falling due after more than one year.

Table 4. Dairygold, consolidated balance sheet. Source: Dairygold, 1997, annual report.

Dairygold pays share interest to its members based on their allocated share capital. A part of the profit is allocated to the members in the form of bonus shares in proportion to their milk supply. Convertible capital is allocated to the non-member suppliers in order to encourage them to participate in the co-operative affairs. The convertible stock can be converted into ordinary shares when membership commences. The convertible stocks carry an interest payment that is also converted when the suppliers join the society. (Cunningham, 1993)

6.2 Glanbia Group PLC

6.2.1 Production and marketing

Glanbia Group PLC emerged in 1997 from the merger between Avonmore Foods PLC and Waterford Foods PLC. With a total milk pool of 4,500 million litres the firm is the fourth largest dairy enterprise in the world and the largest milk processor in Ireland. The domestic milk pool of the firm amounts to 1,700 million litres. The merger has provided Glanbia with a strong base in Ireland, the group controls about one third of the domestic milk-quota. The two

original enterprises both entered the stock exchange market in 1988. Since then they have been very active in acquisition activities on an international basis.

The turnover of the group was IR£ 2.369 million in 1997. The sale outside Ireland represents 75%, in particular with a strong presence in the UK and US dairy industries, Before the merger, Avonmore Foods was originally a dairy firm that diversified from the core business into pork processing and food ingredients, Waterford Foods remained a dairy producer. After the merger, the dairy operations were organised into two activities, Consumer Foods and Food Ingredients. The others are the Meat division and the Agri-trading division.

- *Consumer Foods:* The Consumer Foods division consists of businesses engaged in the processing and marketing of dairy consumer products. The division includes the processing of yoghurts, butters and cheeses and activities on the liquid milk market in UK and Ireland with a 50% national share. Glanbia is also the largest supplier of pizza cheese in Europe with a 25% share of the EU market. The division represents about 45% of group turnover in 1997.
- *Food Ingredients:* The division supplies food-manufacturing companies with a wide range of dairy-based food ingredients. The division accounts for 27% of Group turnover and is operating in Ireland and US. Products include whey protein and milk powder.
- *Meat Division:* The division is active in pig, lamb and beef processing of products marketed on consumer markets mainly in Ireland and UK. Glanbia is the second largest meat processor in Ireland with 35% of the pig kill and 10% and 25% respectively of the beef and sheep kills. It is also a major player in the UK with 5% of both the pig and lamb-slaughtering sector. The division accounts for 20% of the group turnover.
- *Agricultural Trading Division:* The trading division is responsible for the production, distribution and marketing of animal feeds, grain purchasing, sales of farm inputs and providing advisory service for farmers.

6.2.2 Membership

Avonmore Food and Waterford Food were quoted on the stock exchange market almost simultaneously as the second respectively, third enterprise. Their financing and membership structure could be considered as similar even if they were two different firms,. The financial structure of Glanbia is in a broad sense similar to Kerry's with one vital exception; it is still statutory in Glanbia that the co-operative society shall hold a majority of the voting power, i.e. more than 51% of the shares. The society holds 160 million ordinary shares in Glanbia Group PLC after the merger, which represents 55% of the firm's 291 million issued ordinary shares (see figure 10) (Annual report, 1997). The farmers' share of the enterprise has steadily been decreasing since the original firms transformed into PLCs. Flynn (pers.comm.) thinks they will decrease under 50% in the future. The farmers are holding about 10-12% of the shares privately in the PLC (Flynn, pers.comm.).

The co-operative society has approximately 20 000 shareholders of which about 7 000 are milk suppliers, 9 000 dry shareholders and 4 000 dead or non-traceable members (Jacobson and O'Leary, 1990). The co-operative society applies open membership provided the individual farmer applying for membership fulfils the certain requirements of the society, like access to milk-quota and that they belong to the geographical catchment area of the firm. New members are obliged to buy a certain amount of shares prescribed by the board of the society.

However, it is generally a relatively small amount. According to the Rules of Avonmore Waterford Co-operative Society Limited (1997) untraceable members and members not supplying or trading with the enterprise should be repaid their share capital and their membership cancelled. According to Flynn (pers.comm.) there is reluctance on the board in doing that, as the non-trading members think their co-operative shares are worth more than the nominal value of IR£1. Accordingly they want to stay in the society. He says the society is discussing a similar reclassification of the share rights as the one adopted in Kerry, i.e. all members have full monetary rights to the shares, but differentiated voting rights.

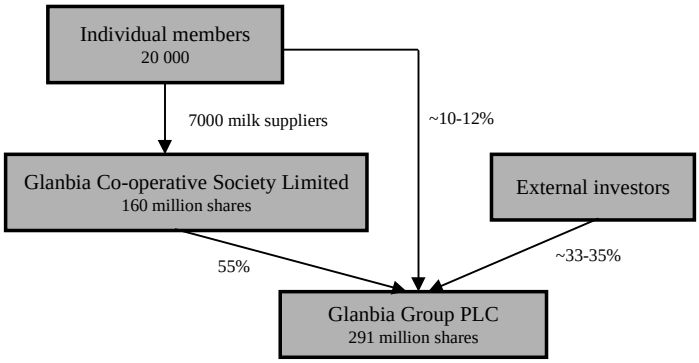

Figure 10. Ownership of Glanbia Group PLC

Dividends paid by the PLC to the society are allocated to the members in the form of interest, bonus shares and loan stock. All dividends are allocated to the members based on the co-operative shares according to Flynn (pers.comm.). Nothing is kept as unallocated capital in the society. However, as dealt with in section 5.3, there was a substantial amount of unallocated capital before the two original enterprises transformed into PLCs, which is still not allocated to the members.

6.3 Kerry Group PLC

6.3.1 Production and marketing

Kerry Co-operative was founded in 1974. The structure of the firm changed in 1986 when Kerry Group PLC was formed and placed on the stock exchange market. Prior to going public,

dairy and meat processing in Ireland dominated Kerry's business. The firm has grown rapidly. It is now a leading food ingredient and consumer meat processor in Europe and North America. The group has reoriented its business from its original base into expansion in food ingredient market. (ABN-AMRO, 1996)

The group processes more than 10% of the Irish milk pool, i.e. about 530 million litres. The milk is produced by its own suppliers and complemented with milk purchased from other firms. Through a serie of acquisitions, Kerry has diversified away from primary dairy processing. According to ABN-AMRO (1996) it accounts for less than 15% of group operating profits. Kerry's turnover in 1997 was IR£1.344 million and the sales outside Ireland represent about 70% (Annual report). The group's business activities are divided into three main areas.

- *Kerry ingredients:* Kerry ingredients is a major manufacturer of dehydrated food ingredients in North America and Europe. The division manufactures a wide range of powdered food additives and proprietary food ingredient systems including cheese powders, seasonings, powdered fats and emulsifiers. The division is based both in Europe and America. This is the group's largest divisions, representing approximately 59% of the turnover.
- *Kerry Foods:* Kerry Foods, the consumer foods division, manufactures and distributes a wide range of prepared consumer foods throughout Ireland and UK. The division is active in the areas of porkmeat products, dairy products and convenient foods. Products produced include bacon, sausages, meat pies, liquid milk, butter, spreads and creams. Kerry Foods represent 38% of the group's turnover.
- *Kerry Agribusiness:* Kerry's agridivision is responsible for the Group's milk collection activities, animal feed and fertiliser supplies, cattle breeding service. These activities are integrated in one form or other into Kerry's food division.

6.3.2 Membership

In 1986 Kerry Co-operative Creameries Limited was the first Irish co-operative to transform all its assets in a PLC. A total of 168 million shares represent the ownership of Kerry Group PLC. 62% of the shares, i.e. 104 million shares, are owned by individual investors and investment groups (see fig 11). The remaining 38% of the shares are owned by Kerry Co-operative Creameries Limited, i.e. the new co-operative society. (Annual report, 1997) The 7000 shareholders in the co-operative society indirectly own 64 million of the shares in the PLC, i.e. they own them collectively as in an traditional co-operative. 4200 of the members are milk suppliers. The others are what are called dry shareholders. The number of dead or non-traceable members is small. (Hayes, pers.comm.)

The shares are entitled to one vote. Until 1997 the co-operative was statutorily required to hold at least 51% of the shares issued. This was changed, as a majority of the members supported the proposal of relinquishing the 51% requirement. The current statutes allow the co-operative holding to drop to 20%. To go under that level would require a further meeting. The proportion of share capital held in co-operative control has steadily been decreasing since the firm was quoted on the stock exchange market (see table 5). The reduction of co-operative shares has been very lucrative for the member shareholders, as the collectively owned co-operative shares have become marketable and distributed among the members. The farmers

probably have quite strong incentives to reduce the collectively owned part of the firm as their holdings in the co-operative still is unallocated to a substantial degree.

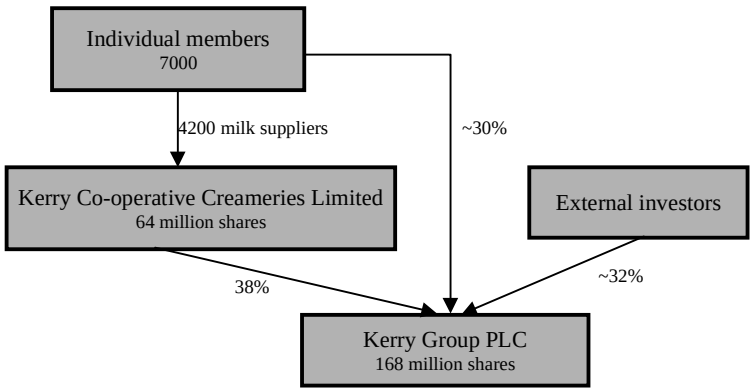

Figure 11. Ownership of Kerry Group PLC

1986	1987	1988	1989	1990	1991	1992	1993	1996	1997
83.1%	78.7%	66.0%	60.0%	60.0%	57.7%	57.7%	54.8%	52%	38%

Table 5. Proportion of ordinary share capital held in co-operative control at year end for Kerry Group PLC (% of issued share capital). Source: Harte (1997) year 1986-1993 and Annual reports year 1996-97

"*If we had not had this development from 50% and below the farmers would probably stand the future growth of the PLC. It was a way to unlock the value and get out a real price on those shares and enable the development of the company. In the absence of a real market people were selling the co-operative shares on a grey market to crazy prices. The people were voting for value." (Hayes, pers.comm.)*

The co-operative society applies open membership, provided the farmers have a milk-quota and are producing milk within the catchment area of Kerry. New members are obliged to buy

a minimum number of shares. In order to join the co-operative society farmers pay IR£1 per delivered 500 gal (2 250 litre).

The PLC pays dividends to its shareholders set on an annual basis proportional to the ownership. Accordingly the co-operative society receives 38% of the dividends in order to distribute the money among the active members in proportion to their patronage of the co-operative society, i.e. as interest. The entire sum is, according to Heyes (pers.comm.), not disbursed to the members, but used to build up a surplus within the co-operative society. A part of the surplus is allocated in the form of bonus shares and convertible stocks. The members receive a part of the co-operative dividend as cash and part of it as bonus shares. Non-member suppliers receive convertible stocks. One new share is issued per every 2 250 litres milk delivered per annum and can be converted into ordinary shares when membership commences. The purpose of the patronage system according to Heyes (pers.comm.) is to ensure that new milk suppliers come in and seek membership. Consequently they have no non-member suppliers. Before Kerry transformed into a PLC, a substantial amount of the capital was unallocated (see section 5.3). There is a good reason to believe that a considerable degree of the capital within the co-operative society still is unallocated. The amount is however unknown by the author.

The members have also invested in the PLC as individuals, the co-operative members hold about 30%, or even more, of the PLC-shares privately (Heyes, pers.comm.). Farmers, who possess A-shares in the PLC, do of course directly receive the dividends paid by the PLC.

The shares of the co-operative society have been divided into three categories since 1997, reflecting diversified rights of vote. Members holding A shares in the co-operative society are active milk suppliers. Those who are still farming and not supplying any milk possess B-shares. Those who do not farm at all possess C shares. The A-category is entitled to vote in all questions and to be nominated for elections of the society. A member of the B category is not entitled to be nominated for elections or vote in meetings considering amalgamation or sale of the society. Finally, the C category is not entitled to anything except the monetary rights of their shares. If a member retires from milk supplying they are transferred into the B or C categories, i.e. no share is withdrawn. Shares of untraced members are cancelled, provided the sum does not exceed IR£100.

Heyes (pers.comm.) explains that, in general, the members are more interested in the enterprise now compared to before Kerry transformed into PLC. He thinks, apart from getting a leading milk price, their interest is enhanced by the fact that they have a substantial capital base in the co-operative society and receive an annual dividend from the co-operative society and the PLC.

6.4 Golden Vale PLC

6.4.1 Production and marketing

Golden Vale PLC was the last enterprise quoted on the stock exchange market. In 1990 the members of the society voted to transform the co-operative into a PLC. The processing of Golden Vale is mainly related to dairy activities, about 88% of total sales is accounted to such business operations (Goodbody Stockbrokers, 1993). The objective is not to diversify into

other food products. The primary objective is rather to maximise returns from the domestic milk pool, amounting to 550 million litres per annum according to Goodbody Stockbrokers (1993). The group has a strong presence in Northern Ireland and processes approximately 15% of the total milk supply on the island of Ireland, i.e. the Republic of Ireland and Northern Ireland (Annual report, 1997). The enterprise has acquired businesses above all in Northern Ireland and UK in order to expand the business.

The turnover of Golden Vale in 1997 was IR£565 million. Golden Vale's operations are divided into three divisions, Consumer Products, Butter and Milk Powder, Agri Trading.

- *Consumer Products:* This sector comprises the Group's businesses in cheese, spreads and retail butter, fluid milks, cream liqueurs and UHT products. The Consumer Products division acts both in the home and export markets. The combined turnover in 1997 accounted for 54% of sales. Golden Vale is one of the leading producers of processed cheeses in Europe and has also a strong presence in the liquid milk markets in Ireland and UK.
- *Butter and Milk Powders:* This business comprises the manufacture and sale of butter, milk powder and ingredient products. The division represents 20% of the sales of the group.
- *Agri Trading:* Golden Vale's Agri Trading division is responsible for the sale of animal feeds, fertiliser, hardware and other farm inputs. It also includes the manufacture of animal feeds.

6.4.2 Membership

Golden Vale was the last enterprise to follow the PLC-route. However, they have chosen an organisational structure differing from the one adopted by Kerry and Glanbia. Instead of offering A-shares to members and external investors and keeping a majority of the shares within the co-operative society, Golden Vale introduced a system where all issued shares are tradable, i.e. they became a "full" PLC. According to Dijsselbloem et. al.(1992) they used two criteria when going public, the farmers must keep control and all shares must be marketable.

The farmers received shares in the Golden Vale PLC (the PLC) to replace their old co-operative shares in Golden Vale Co-operative Creameries. A total of 163 million shares were issued and 127 million shares were distributed among the co-operative shareholders. Suppliers, employees and customer were offered to invest for 22 million shares and eventually 14 million shares, i.e. 8% was offered to corporate investors initially. Later the PLC was quoted on the Dublin and London Stock Exchanges. The members of the old co-operative were also given one new share in the new co-operative society Golden Vale Food Products Limited (the co-operative), i.e. altogether the 4 243 members were holding 4 243 shares (see figure 12). The other 2 million shares in the new co-operative are held by the PLC, i.e. more than 99% of the holdings. The co-operative is formally regarded as subsidiary to the PLC. However, the PLC has only one vote out of the 4 244 votes in the co-operative (Dijsselbloem et. al., 1992). The co-operative is still responsible for the milk assembly and parts of the milk processing i.e. activities that could be regarded as primary processing, in the original geographical area of Golden Vale (Annual report, 1997). The conclusion is that the farmers in the area of Charleville, where the firm was founded, still have the formal control of the milk

supply. Dijsselbloem et. al.(1992) says it is unclear what would happen if the farmers were to decide to stop supplying the PLC with their milk.

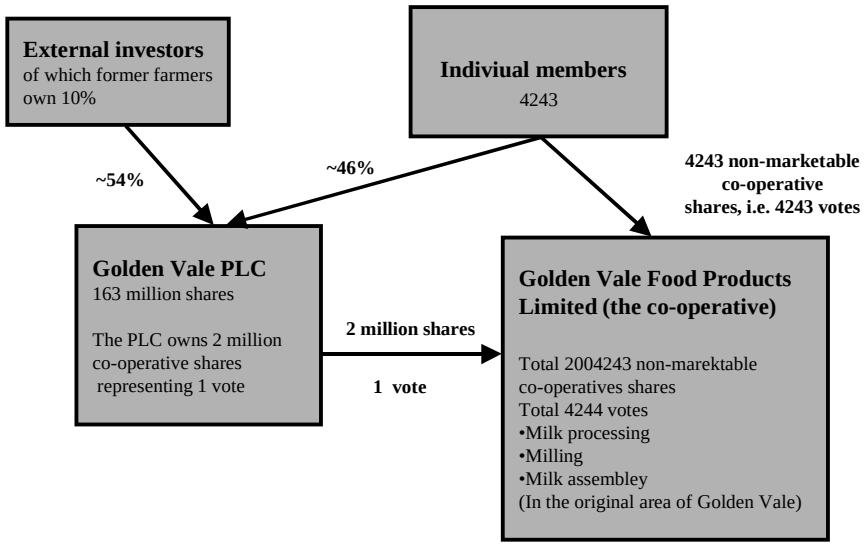

Figure 12. Ownership of Golden Vale PLC

Products with a higher added value were transferred into the PLC when the firm changed organisational structure. Later the PLC acquired dairy business activities in Northern Ireland and Wales, however, the group recruited farmers in those areas to supply milk. In other words, they are not members in the co-operative society, they are merely suppliers of Golden Vales subsidiaries. According to Lynch (pers.comm.) the member suppliers do not get any particular benefits compared to the non-member suppliers, they are treated equally. Lynch comments why the members of the old co-operative chose the current organisational structure;

"In the case of Kerry and Avonmore Waterford the co-operative maintained a majority of the shareholding in the PLCs and some shares were locked within the co-operative society. The individual members did not have access to those shares, however, indirectly they did by the ownership of co-operative shares. The co-operative controls the PLC by the shares within the co-operative society. In the case of Golden Vale the co-operative became subsidiary to the PLC. We released all the farmers' co-operative shares and conducted one hundred percent day one. The expectation was the farmers would individually retain their shares and keep the control within the farmers' community. The outcome was different, they started to sell their shares."

He answers on the question if he thinks the model of Golden Vale is better than the organisational model used by Kerry and Glanbia;

"No I do not think so. On the one hand it did release all of the wealth the individual farmers owned and gave them access to that. On the other hand, the downside of that was the farmer co-operative shareholding in the PLC has fallen under 50% and continuos to fall. As the farmers hold the shares as individuals they cannot put them together like the co-operative societies in Kerry and Avonmore Waterford. From that point of view they lost some power. But they have had the advantage of being able to cash their shares. From a PLC institutional point of view there may have been some advantages in freeing up all of the co-operative shares, so the supply and demand determines the price of the shares."

The member suppliers own about 46% of the shares in the PLC according to Lynch (pers.comm) another 10% is probably possessed by former suppliers. He explains that, if the farmers come under economical pressure they tend to sell their shares in the PLC. They primarily see themselves as farmers. Only a minority of the farmers have shown interest in buying additional shares in the PLC as investors. Open membership is practised in the co-operative society provided the applicant has a milk-quota at disposal and is active in the area of the society. New members are not obliged to buy shares in the PLC. They are merely obliged to buy one co-operative share of IR£1 in the co-operative society. All the members in the co-operative are active suppliers, when members withdraw the IR£1 share is cancelled. Dividends is paid to the suppliers in the same manner as to other shareholders. The shareholders within the PLC are treated equally regardless if they are suppliers or not.

The organisation of the co-operative is not of the same importance as in the other PLCs, because there is no unallocated capital present within the society. Instead all capital is allocated within the PLC-organisation.

6.5 Assessment of membership

It is difficult to ascertain anything unambiguous about the examined firms whether the changes into the PLC structure have increased the members' involvement and interest. According to O´Donohoe and Myers there do not seem to be any differences in the patron role between PLCs and traditional co-operatives

"There are no differences in member involvement between PLCs and Co-operatives." (O'Donohoe, pers.comm.)

"With the exception of Kerry there would not be any differences. In the case of Kerry the members have historically had a small influence. The involvement of the members of Kerry would be some less as they have smaller influence." (Myers, pers.comm.)

The introduction of tradable shares has probably stimulated the members' willingness to invest money in the PLC co-operatives. Briscoe (pers.comm.) regards that the members probably prefer to invest in a PLC rather than in a co-operative, because the co-operative is not giving any money in return. Harte confirms the view of an increased interest of the members' investor role:

"It is difficult to say. I presume the traditional co-operatives have more member interest, but maybe the PLCs make more exciting things compensating that and stimulate some interest. The bigger the companies become the more remote is the individual member. The possibility to buy shares on the stock exchange market induces a higher interest, but it is hard to measure the extent of the interest. Some farmers are holding shares that are more valuable than their farms." (Harte, pers.comm.)

Within the organisations of Kerry and Glanbia the farmers still are organised as traditional co-operative societies. Within the societies they have kept a substantial amount of unallocated sharecapital. Keane (pers.comm.) says:

"Currently it do not cause any problems in any major way. Potentially it could cause problems as the members may feel the money should be allocated individually and that they then would have an asset they could sell. In Kerry's case it is an awful lot of money."

There is a presence of inactive shareholders in a majority of the Irish co-operatives. Their interest as patrons could be considered weak as they do not trade with the co-operative anymore. However, they are still shareholders and accordingly the inactive members may have interest as investors. They may impel transformation of co-operative into PLC in order to realise the value of their shares. Myers (pers.comm.) does not think that has affected the outcome of the vote in the examined firms. But Briscoe (pers.comm.) does not disregard that it may have been a contributing factor.

"*There were a rising number of non-farmers and the co-operatives were very big businesses. About 50% of the shareholders were dry shareholders and there was a substantial number of shareholders with useless shares not interested in the business at all. This is a factor contributing to the transformation; you should not allow shares to pass on in that way. They have not kept their books up to date." (Briscoe, pers.comm.)*

The presence of inactive shareholders may lead to decisions that in general are out of the supplying members' interest. This is valid for both the traditional co-operatives and the PLC co-operatives, except Golden Vale. It is statutory that the co-operatives cancel the shares of non-trading members, but in general has this not been done. The interviewed experts give their view why the co-operative societies have retained the inactive shareholders within the societies:

"They should force them out, but they do not do it for social reasons. The inactive members do not want to remain members because of rational economical reasons. It is cultural reasons. They do not want the money, it is for other reasons. They want to stay in the co-operative. It is a complex social issue. It is not worth the trouble to let them out and the processors do not think it is an interesting question." (Ward, pers.comm.)

"It is difficult to force them out as shareholders. If they do not wish to finish as shareholders they are allowed to stay. Some of them do it for traditional and sentimental reasons. It is also possible they want to get the value from their shares if the co-operative turns PLC. This is in particular the case of the PLCs, but also in the case of the larger co-operatives like Dairygold, the members may feel the co-operative maybe will transform into PLC. They have tried to force the inactive members out in Ballyclough (one of the co-operatives that merged

into Dairygold), but it created a lot of bad feeling and they did not find it worth it. It is difficult to force shareholders out of the co-operatives except if they do not cancel voluntary." (Myers, pers.comm.)

"In Dairygold a couple of years ago they made a move in order to try to redeem shares. I think they redeemed like one-third of the shares of the dry shareholders. They have not done it before because of ignorance. Another reason is that it is a substantial amount of money and they want to keep them within the company. It is not so easy to redeem those shares as people hold on to them and they compare their shares with PLC-shares. They may think there is a possibility the co-operative might become a PLC in the future." (Briscoe, pers.comm.)

6.6 External investors

The traditional co-operative exist to the economical benefit of the members by the business activities. The objective of PLCs are formulated as being "to maximise the shareholders' benefits", that is give the owners return on investments, as high dividend as possible and increase the value of the shares (Jonnergård, 1992). The three Irish PLC co-operatives consist of both supplying shareholders with a patron and investor role, and external shareholders with a pure investor role. From the suppliers point of view they are both interested in return on investments and a reasonable milk price. Investors are solely interested in the revenue of their investment. This could be regarded as an inherent conflict of the PLC co-operatives. The suppliers prefer to see a higher price of the raw-material than the investors. An excess price paid to the suppliers may influence the revenue of the investments negatively. There is also a risk the non-members' interest may decrease the supply of raw material according to Zwanenberg (1997). The processor may reject the farmers' supply of milk, in order to increase the average profit from processed products. Heyes (pers.comm.) and Lynch (pers.comm.) clarify that the potential inherent conflict within the co-operative PLCs does not cause any substantial problems:

"Market returns is the guiding principle. It is our job to maximise the use of the milk. We assist the livelihood of our members and pay them the best possible milk price. That is a written statement of intent by the company. Kerry is following a strong milk price. The conflict that PLCs pay lower milk price than co-operatives has never been an issue. We want to make sure the suppliers enjoy a reasonable standard of living. It has never been a conflict between profit and milk price. Financial analysis has been talking about that, but it has never ever been an issue on the board-table or the farmers meeting." (Heyes, pers.comm.)

"I do not think it is a problem. It always some bit of conflict there, but it does not become an issue. If you are buying raw-material and pay much more than other buyers then it would become an issue, but that does not happen in reality. It is more a theoretical problem. There is no rigid pricing policy, living in the commercial world that we are in. We try to buy the milk competitively at a high standard of quality and at a competitive price. If we do not pay a competitive price we do not get the raw-material. Our objective is not necessarily to go out there and pay an unrealisticly high price for milk. We try to create a reasonable balance between commerciality and ensuring we do not loose milk supply and the farmers transfer their milk elsewhere. We have recognised in the interest of our shareholders that we must buy our milk competitively." (Lynch, pers.comm.)

Myers (pers.comm.) and McCormack (pers.comm.) explain it is easier for the traditional co-operatives as their objective is much more straightforward:

"Obviously in the PLCs there is a great pressure on management from the external investors in terms of financial performance, satisfying the stock market and profitability. That is not the case in the co-operatives. The farmers have a greater impact in determining the milk price in the co-operatives. The management would in the case of PLC argue strongly that they have to satisfy the stock exchange market. The co-operatives have only to satisfy the farmers. The pressure on the management is not as large as in the PLCs, even if there is a pressure." (Myers, pers.comm.)

"The co-operatives have only one set of objectives and one set of players to satisfy. That makes it easier to respond on the milk price. It can be more difficult to satisfy two groups, the prices of raw-material are a source of conflict. It is easier for us. (McCormack, pers.comm.)

The double interests in the PLC, from the external investors' point of view, could influence the valuation of the firm. If they have reasons to believe that the PLC is paying a higher milk price than necessarily required, the share price may be affected negatively as the prospect of profits are reduced. Gill (pers.comm.) says the investors are aware of the inherent conflict:

"I think that has been an issue for investors and they have been carefully watching it. They would have been more sensitive about it in the start of the PLCs when they were quoted. More recently they are more relaxed about that issue. The only thing is that they have to keep an eye on how fast the market moves. For example at the moment, there has been a fairly rapid decrease in the dairy product prices and there has not been a corresponding decrease of raw milk price in Ireland. Investors obviously want to see the balance maintained between the product prices and the raw milk prices. " (Gill, pers.comm.)

Gill (pers.comm.) says that the potential conflict about the raw milk prices have not particularly affected the share prices on the Stock Exchange market. Keane (pers.comm.) confirms Gill's conception. There have also been weak reactions to the fact that the farmers have the formal power, i.e. more than 50% of the votes, according to Gill. He says that Kerry has been treated very well by the Stock Exchange though members until recently have been in formal majority.

"The share price is more a reflection of fundamentals of their businesses. It depends on which company we are talking about. Golden Vale is very dependent on the powder and Kerry is dependent in the performance of the food ingredient market globally. The rating of Avonmore Waterford and Golden Vale is very much down to the performance of their core dairy processing businesses." (Gill, pers.comm.)

"Kerry is a price leader, but so much of its business is now outside the country as the price they happen to pay here in Ireland is not going to have a great impact on the other businesses. The outside investors are more concerned with what happen in the businesses outside Ireland and that they make good acquisitions outside Ireland. That could always change, if the other businesses are starting to go bad the external investors may put bigger

interest in the milk price. There is a potential conflict, but it has not been a great actual conflict to any extent so far." (Keane, pers.comm.)
"The reality is that the farmer shareholders, who control 55% of the shares, effectively control the company and they would demand the maximum return as members. In other words they demand the maximum milk price. There is a dilemma sitting there. We are paying a too high milk price. The impact of the milk price is quite dramatic in Avonmore Waterford as we have such large amounts of milk. There is not really a conflict on the input side." (Flynn, pers.comm.)

The investors investing money in the Irish dairy PLCs are mainly institutional funds. The Irish financial market is by and large primarily made of institutional funds according to Gill (pers.comm.). Examples of the largest external investors according to the annual reports of the examined PLCs include Standard Life Group, Irish Life Assurance and Bank of Ireland among others. The largest investors apart from the co-operative societies have a holding of about 4-6% of the shares.

"The external investors have marked down this industry, they will have about 5-7%, maybe 2-3% in their portfolios, because they want to balance their portfolio as investors." (Flynn, pers.comm.)

According to the neo-classical theories, the existence of co-operatives could be explained by the purpose of a competitive yardstick. There is reason to believe that on a market characterised by a mixture of PLCs and traditional co-operatives, co-operatives may work as competitive yardsticks. From this follows that they probably have the role as price leader.

"There is a balance between the PLCs and the traditional co-operatives. The traditional co-operatives work in the interest of the milk suppliers and offer a reasonable milk price and the PLCs are obliged to try to match that. If they all were PLCs the interest of the shareholders might be stronger versus the interest of the producers supplying milk. The balance that is there now is better for the milk suppliers. If they were all traditional co-operatives we would probably not have any international food companies. In terms of milk price the co-operatives act as competitive yardsticks." (Keane, pers.comm.)

"The co-operatives are aimed to pay the farmers a good price. In a PLC they have two different masters to satisfy. It is not possible to pay the highest possible milk price and at the same time pay a good return on the capital." (Briscoe, pers.comm.)

"I suppose from the expectation it is Dairygold. They would tend to or should be the price leader. It is Kerry among the PLCs'. Dairygold could expect to act as a pacemaker and put pressure on the other companies because of its size and favourable location. It is possible the traditional co-operatives are pacemakers and it could be a reason for them to remain co-operatives. But it is very difficult to argue for something you cannot proof. The industry is well structured even if Dairygold become a PLC." (Harte, pers.comm.)

The interviewees tended to point out Dairygold and Kerry as the current price leaders regarding the milk price paid to the farmers. Dairygold is the largest remaining traditional co-operative and Kerry has a relatively small domestic milk intake.

"Dairygold, they are big and have the best interest of the farmers as an aim. They keep everybody up in offering the farmers a good price." (Keane, pers.comm.)
"Our target will be close to the leader Dairygold. I consider that Dairygold and Kerry are the price leaders." (Heyes, pers.comm.)

"Dairygold tends to pay at the top of the range for milk supply. That is to some extent a reflection of their co-operative status. In difficult times they can pay to members a little bit more than the milk's commercial value. That is of course also a reflection of their size. They also have some advantages in their farm structure, their units are bigger than ours. The collection costs are lower." (Lynch, pers.comm.)

"The milk price is not driven by Avonmore Waterford, it is driven by the other actors like Dairygold. They are the price leader and their profit belongs to the members. Kerry is also a price leader, but they could afford to pay a high milk price as the raw milk is such a small part of the business." (Flynn, pers.comm.)

The Irish dairy processors in this examination are using three different organisational models. The different structures entail, as described in the former sections, varying effects on i.a. the relations to members and investors. The interviewees were asked about which model they in a general perspective consider as preferable:

"In the cases of Kerry and Avonmore Waterford the members have a lot of influence as they not have quoted all the shares in the co-operative society. Their model is preferable from the milk producers' point of view as the members have some influence. In practice it has not created any problems, as the board of Golden Vale are mainly farmers. But some people mean the presence of non-farmers in Golden Vale has had some influence in questions resulting in decisions out of the members interest. So far the organisational structure has not inhibited the success of Golden Vale." (Keane, pers.comm.)

"Between them I prefer Avonmore Waterford. In Kerry the farmers do not have the majority any longer. They do in Avonmore Waterford and accordingly they have possibility of control. Golden Vale is more a straightforward PLC company." (Ward, pers.comm.)

"The outside investors will control more and more as the number of farmers will decline." (Myers, pers.comm.)

"Emotionally I prefer not to take the organisation so far away from the co-operative structure. So, I prefer the Kerry and Avonmore Waterford approaches." (Briscoe, pers.comm.)

"The Golden Vale structure is not that clear to me. Avonmore Waterford and Kerry have a much more transparent structure. I think effectively there are not many differences. In the Golden Vale case, the farmers do still control the milk supply, but they do not control the company. There are not very big differences." (Harte, pers.comm.)

"The shareholding base will change dramatically, fewer farmers and more businessmen. The farmers' shares will probably decrease under 50%. (Flynn, pers.comm.)

"I think the investors are relatively comfortable with both organisational structures, but they find the Avonmore Waterford and Kerry structure as easier to understand. The different organisational structures do not affect the rate on the stock market." (Gill, pers.comm.)
According to Heyes (pers.comm.) the market reactions were modest when Kerry's co-operative society decided to go below 50% of the shareholding of the PLC. He states the Stock Exchange market was not demanding it at that particular time, but there was a belief that the co-operative society wanted to do that.

6.7 Analysis

6.7.1 Traditional co-operative

In the theoretical section it was stated that critique against traditional co-operatives are valid when the co-operative is collectively financed and at least one of the following conditions are fulfilled; the co-operative does not correct any market failure and has a heterogeneous membership. *Dairygold* is by and large collectively financed as only 17% of the shareholders funds are allocated to the members, i.e. the firm has a substantial amount of unallocated capital. Dairygold is a multipurpose co-operative with activities in dairy and meat processing and farm inputs. A lot of members are also considered inactive members, i.e. not trading at all with the co-operative. This suggests that the *membership is heterogeneous*. The different categories of members do not have the same objectives with their membership. From this follows that the business activities of the co-operative do not correspond with the interest of all members. In the former section was concluded that the co-operatives, before four of them transformed into PLCs, were not correcting market failure to any significant degree. In other words, the farmers' transaction costs arguments of integrating vertically into the processing of milk were weak. The individual farmers still have limited transaction theoretical incentives of integrating vertically, because the milk is attractive due to the specific Irish market situation with the milk-quotas and the intervention price. In the case of Dairygold some milk suppliers are not members of the co-operative. They do even give away shares to non-member suppliers if they apply for membership. The international businesses, 42% of the turnover, do not correct any market failure to the advantage of the members. The members in their *role as patrons* probably have a very small interest in the international businesses. But also in their *role as investors* as they do not receive any benefits of the international expansion as most of the capital is unallocated.

However, Dairygold, together with all the other traditional co-operatives, could play the role as *competitive yardstick*. This is hard to prove empirically. The results of the interviews suggest that Dairygold plays an important role as pacemaker regarding the milk price paid to farmers. Accordingly, the presence of traditional co-operatives could be beneficial for all milk suppliers in Ireland. This does not merely concern the members of the traditional co-operatives, but also non-member suppliers of the traditional co-operatives and the PLCs. However, this does not contradict that suppliers as individuals probably have small incentives of joining a co-operative.

Dairygold has a very high degree of solidity, 89%. This suggests that the firm has no immediate need of risk-bearing capital as it could finance investments with bankloans for example. Even if the *horizon problem* and *portfolio problem* are prevalent, they do not hamper investments in the short run, as the farmers do not need to contribute with risk-bearing

capital. However, in the long run it will restrain investments. The international businesses could be regarded as a portfolio problem. The international business-activities are probably not corresponding to the members' own preferences.
Dairygold has problems with the *common property*. Due to the substantial unallocated capital in combination with open membership it gives new members the opportunity to act as *free-riders*. However, this does not seem to be a serious problem as some farmers supply milk without being members. It is rather former suppliers that cause problems, as they are not willing to withdraw their shares. Even if some interviewees quote cultural and sentimental reasons, still they have rational reasons to remain members of the co-operative. Dairygold could be quoted on the stock exchange market and the co-operative shares would then be much more valuable than today, i.e. there are speculative rational arguments to stay in the co-operative.

The substantial amount of unallocated capital does not promote an active governing of the firm. This in combintion with the businesses abroad suggests that Dairygold has serious *follow-up problems*. The members have weak incentives of following-up the performance of the businesses abroad as it is far from their own business activities. Consequently, this increases the management's freedom of acting out of the members interest. The expansions abroad could probably be partly explained by managers' interest of *"consumption on the job"*. The substantial amount of unallocated capital is an effect of poorly defined property rights, i.e. the *shares are not tradable.*

The *decision-maker problem* is difficult to measure. However, the heterogeneous membership suggests that it could be very difficult for the management to assess the opinion of the farmers.

The *investor role* of the members is probably weak as the property rights are poorly defined. The substantial amount of unallocated capital suggests that members show a weak interest in their role as investors. Farmers are probably not interested in investing any capital in Dairygold in the long run, due to poorly defined property rights and agency problems.

The *patron role* of the members is probably something between significant and insignificant. Members as individuals have small transaction theoretical reasons to stay in Dairygold. However, both members and farmers supplying other processors do probably collectively benefit from Dairygold and other traditional co-operatives. They probably work as competitive yardsticks and both members and non-members benefit from higher prices than what probably would have been the case without any co-operatives. This suggests that the membership is important to some extent. Provided the existence of the traditional co-operatives is guaranteed, the patron role of the members is certainly unimportant.

Provided the existence of other traditional co-operatives fulfilling the role of competitive yardstick, the investor role and patron role of Dairygolds members is considered as relatively unimportant. This suggests that Dairygold could be regarded as a *degenerated co-operative*. The introduction of tradable shares could be a possible solution for Dairygold, that would define the property rights more clearly. Accordingly the agency problems related to the current organisational form would vanish.

6.7.2 Entrepreneurial co-operatives

The changes into PLCs, i.e. the introduction of tradable shares, in *Kerry* and *Glanbia* solved by and large the agency problems associated with the former traditional co-operative organisations. The *use of tradable shares* have remove the specific agency problems of the traditional co-operatives within the PLC organisation; The *horizon problem* disappears as the members can capture the benefits from their investments by selling their shares when they withdraw. The problems associated with *unallocated capital* disappear in the PLC. The *voting power is proportional* to the holding of shares and it is not possible for new investors to act as *free-riders* as the shares are tradable, i.e. there is no problem of *common ownership*. The *portfolio problem* also disappears because of the tradable shares, as the investors are able to invest proportionally to their own risk-attitude and fortune.

The specific *agency problems* associated with traditional co-operatives are solved within the PLC organisation. However, in both Glanbia and Kerry the agency problems have remained within the new co-operative societies, due to the lack of tradable shares. The open membership in combination with unallocated capital of the co-operative society could entail a *free-rider problem*. New members have access to capital that could be realised if the PLCs release new shares. The equity farmers are obliged to contribute proportional to the milk supply when joining the co-operative society correspond to a value much higher than the nominal value of the shares. New members dilute existing members' common capital, i.e. the unallocated assets. To sum up, the *problem of common property* still remains in the co-operative society. Members have few reasons to redeem their co-operative shares when they cease supplying Glanbia and Kerry. The shares could be worth a lot more if the PLCs release new shares. This is probably the rational reason to why inactive members stay in the co-operative societies, as there is still a lot of equity not realised within the societies.

The dividends in the PLCs are paid to shareholders in proportion to their shareholding. The dividends received by the societies from the PLCs is partly distributed to suppliers proportional to their co-operative shares. In the case of Kerry they even increase the agency problems of the co-operative society by distributing parts of the dividends to the unallocated capital.

The *horizon problem* and *portfolio problem* in the co-operative societies are probably not very serious, as risk-bearing capital is not raised that way. Members have the possibilities of investing according to their own preferences in the PLCs by buying tradable shares on the stock exchange market.

Glanbia and Kerry both have dry shareholders not supplying any milk. Glanbia also has meat supplying members and inactive members. This suggests *heterogeneous memberships* in the co-operative societies. Kerry has partly solved that problem by introducing diversified voting, which reduces the possibilities of decisions out of the active members' interests.

The advantage of organising the suppliers of the PLCs within a co-operative society is that the voting power of the farmers is kept together. However, the organisation of the society according to the traditional co-operative principles, is probably not the most effective way of organising the farmers' influence in the PLCs. The co-operative society would probably be more effective if it was organised as a proportional co-operative society.

The introduction of tradable shares have made the *investor role* of the members stronger in regards to the former traditional co-operative organisation. The agency problems associated with poorly defined property rights of traditional co-operatives disappear. The investor role is still hampered by the presence of a traditional co-operative society with inherent agency problems. However, even if they have remained within the co-operative societies, the agency costs are definitely mitigated by the transformation into PLCs
The suppliers of milk in Glanbia and Kerry have probably no reason to fear any market failure, which could impact their transaction specific assets. Provided the following circumstances: The traditional co-operatives on the domestic milk market fulfil the role as competitive yardstick and the milk-quotas restricting the supply of milk in combination with a guaranteed intervention price. This entails that the *patron role* of the members probably is as weak as before they converted into PLCs. The change into PLCs have not strengthened the patron role, due to the relatively strong demand of raw-milk in Ireland

6.7.3 Combination co-operative

Golden Vale quoted the whole enterprise on the stock exchange market. However, the farmers of the original area of the firm retained the control of some parts of the primary processing. Therefore, Golden Vale could be considered as a *combination co-operative*.

As mentioned above, milk suppliers are acting on a sellers market, accordingly there are currently small transaction cost incentives for farmers in organising co-operatives. In the absence of market failure the farmers of *Golden Vale* have currently no reasons of keeping the control of the primary processing.

The business activities further downstream the processing chain are all transformed into the PLC. Nor does any market failure exist. The introduction of tradable shares has eliminated the agency problems associated with traditional co-operative organisations in the PLC parts. There are no serious co-operative agency problems associated with the co-operative society, as there are no capital or physical assets involved. The society only controls parts of the primary processing. Consequently, the farmers of Golden Vale have *no horizon problem, portfolio problem* or *problem of common property* in their relationship with neither the co-operative society or the PLC. All shares were released by the conversion into PLC and farmers own their shares directly in the PLC. In other words, there is no unallocated capital in the co-operative society as in the case of Glanbia and Kerry. The farmers and external investors are able to raise capital in the PLC proportional to their own preferences without being hampered by the specific agency problems of co-operatives.

The *patron role* of the farmers in Golden Vale is as strong as in the three other enterprises, i.e. probably weak due to the lack of market failure. The *investor role* of the farmers is probably even stronger than in the cases of the other two PLCs, as all shares are tradable and no capital is unallocated.

The drawback of the organisational solution of Golden Vale may be that the farmers have difficulties in putting their shares together and wielding power in the governance of the PLC. However, from the farmers' point of view, it is probably not necessary to maintain a strong influence over the milk processing further downstream in the processing chain due to the absence of market failure.

6.7.4 External investors

The potential intrinsic conflict, dealt with in the theoretical section, between the farmers' role as patrons and external investors does not currently seem to be a serious problem. The interviews suggest that there is no conflict between the farmers and PLCs regarding the milkprice paid to the farmers. The PLCs maintain they are paying "*market price"*. The farmers of the PLCs do not have to integrate vertically in order to protect their transaction specific assets. The reason is a fairly competitive structure with a lot of processors in combination with traditional co-operatives, which probably enforces their role as competitive yardstick. The PLCs have to pay a milk price corresponding to the price paid by the traditional co-operatives. The price leadership of Dairygold confirms this. Kerry is also mentioned as a potential price leader from a farmer perspective. The reason is probably that it is such a small part of their total business. The raw milk does not play an important role.

The interviews suggest that the continuos decrease of the suppliers *percentage of the total shareholding* in Glanbia and Kerry is not detrimental from the farmers point of view. Either in Golden Vale does it seems like the farmers are badly affected by the fact that farmers do not formally have the major influence. The explanation is the lack of market failure in both primary and secondary processing. The farmers do not have to fear that external investors are wielding market power to the drawback of the farmers. Consequently, the formal influence of the farmers is of subordinated importance. A contributing factor is probably also that the major external investors are all institutional investors with a limited interest of exercising a practical influence in the development of the firms' business operations. They will not demand influence in practical issues.

7 Marketing

7.1 Marketing of the firms

The Quoted Irish dairy companies have rapidly expanded the scale and scope of their activities through acquisitions the past years, mostly abroad. The main objectives behind this expansion have been to increase the scale of the business activities and acquire new businesses in order to reduce the relatively high dependence on cyclical dairy commodities. (Goodbody Stockbrokers, 1993) Golden Vale and Dairygold are highly focused on dairying, but Glanbia and Kerry have reduced their dependence on dairy.

The potential of organic growth within the dairy industry is limited due to the milk-quota system. The main focus of the larger processors has been expansion overseas through acquisitions. Most of the companies have been acquired in UK and US. Continental European based companies are acquired to a lesser extent (see table 7). (Enright, 1997) Enright (1997) says, “as a consequence of growth and acquisitions, several of the large Irish dairy co-operatives have evolved into international food enterprises, most notably Kerry, Avonmore Waterford (Glanbia) and Golden Vale.” He implies that from being Irish based and farmer owned a significant segment of the Irish dairy industry is increasingly internationally oriented and driven by the growth and profit concerns of the stock exchange market.

The main achievement of *Kerry* has been of the US food ingredients market and acquisitions of larger ingredient companies such as Beatreme in 1988 and DCA in 1994. Former *Waterford Foods* was concentrated on consumer dairy products and has made significant acquisitions in the liquid milk business and the cheese market in the UK. (Enright, 1997) Former *Avonmore* has diversified into meat products in Ireland and UK as well as expanding its dairy operations in UK and US (Goodbody Stockbrokers, 1993). *Golden Vale* has focused on Ireland (including Northern Ireland) but has also made acquisitions in the processed cheese and spreads sector in Netherlands and UK. *Dairygold* was the last of the large dairy enterprises to join the acquisitions trail. It purchased Horlicks in the UK in 1994. (Enright, 1997) Since the 1990 merger, Dairygold has not succeeded in scaling up production facilities in dairy production (Zwanenberg, 1997). Enright (1997) says that the need for funds in order to finance this more commercial and international outlook has led to changes in the financial structures of several of the major processors to make capital available from the stock market. As mentioned in the preceding sections and also according to Goodbody Stockbrokers (1993), the main benefit of these acquisitions has been to reduce the relative importance of the domestic commodity operations. Goodbody Stockbrokers (1993) also maintain that the main strength of the quoted Irish dairy enterprises is their access to funds on the stock exchange market. They have a greater flexibility to seize acquisitions opportunities at short notice compared with traditional co-operatives.

In the period of 1987 until now there have been changes within the enterprises due to the introduction of quotas and expansion through acquisitions. Greater attention has been focused on i.a. yields, added value products and manufacture of food ingredients for specific end-uses. (Enright, 1997)

Irish Co.	Year	Acquisition Co.	Country	Buiness	Cost
Kerry	1987	Primas Fd Ing	US	Food Ing.	n.a.
Kerry	1988	Beatreme	US	Food Ing.	US$120m
Avonmore	1988	Roy's Dairies	US	Dairy Proc.	US$9.5m
	1988	Glenmills Dairies	UK	Liq. Milk	IR£0.5m
	1989	St Falbo Cheese	US	Cheese mfg.	n.a.
	1989	Golden Dairies	UK	Mozarella	n.a.
Waterford	1989	Heald Foods	UK	Milk/F. Juice	IR£43.0
Golden Vale	1989	DPP	UK (NI)	Proc. Cheese	IR£5.0m
	1989	Ceredigan	UK	Liq. Milk	n.a.
	1989	Golden Cow	UK	Butter Spreads	n.a.
Tipperary	1989	CPL Davoine	France	Cheese	n.a.
Avonmore	1990	Birmingham Dairies	UK	Liq. Milk	n.a.
	1990	Goodwins	UK	Liq. Milk, cheese	stg£5.7m
	1990	Handsworth	Uk	Liq. Milk	stg£7.7m
Kerry	1990	Milac GmbH	Germany	Food Ing.	n.a.
	1990	Semmons Taylor	UK	Food Ing.	n.a.
Waterford	1990	Galloway West	US	Dairy Products	IR£44.9m
	1990	Western Cheese	UK	Cheese	n.a.
Golden Vale	1990	Bridgend	UK	Liq. Milk	IR£3.6m
Waterford	1991	U.C. Dairies	UK	Milk	IR£0.4m
Avonmore	1991	Caterpak	UK	Grated Cheese	IR£0.4m
	1992	Wards Cheese	US	Cheese mfg.	n.a.
	1992	Whitecroft Dairies	UK	Liq. Milk	IR£4.4m
	1992	Wiltshire Dairies	UK	Liq. Milk	n.a.
	1992	Hampshire Dairies	UK	Liq. Milk	n.a.
	1992	Golden Foods	Belgium	Cheese mfg.	n.a.
	1992	Churchfield	UK	Liq. Milk	stg£5.7m
	1992	Parker	UK	Liq. Milk	stg£5.7m
	1992	Paszto Kft	Hungary	Liq. Milk	n.a.
Golden Vale	1993	Leckpatrick	UK (NI)	Dairy pdts.	IR£22.2m
	1993	Vonk Food Holland	Netherlands	Processed Cheese	
	1993	A/S Vejle	Denmark	Margarine	
Waterford	1993	Durham Dairies	UK	Liq. Milk	IR£7.7
	1993	Express (NI)	UK	Mozarella	n.a.
Avonmore	1993	Dairycrest	UK	Liq. Milk	IR£21.6
Waterford	1994	Greencroft Dairies	UK		n.a.
Kerry	1994	DCA	US		US$402m
Dairygold	1994	Horlicks	UK	Cheese	n.a.
Waterford	1995	TCC	UK	Dairy Foods	IR£125m

Table 5. Major foreign dairy acquisitions by Irish dairy enterprises. Source: Enright (1997)

Between 1985 and 1997 the increase in scale of the business activities by the PLC enterprises have been substantial (see table 8). Even if the figures are not completely reliable, as two of the firms have merged, it is obvious that the growth of Dairygold has not been as large as in the quoted enterprises.

	Year	Turnover £m	Increase (%)

Avonmore + Waterford	1985	232+204=436	
Glanbia	1997	2 370	444%
Mitchelstown + Ballyclough	1985	202+154=356	
Dairygold	1997	617	73%
Golden Vale	1985	141	
	1997	565	301%
Kerry	1985	211	
	1997	1 344	537%

Table 6. Increase of turnover 1985-1997. Source: Annual reports 1985 and 1997

Keane (pers.comm.) says the PLCs invest more in value-added products compared to the smaller co-operatives. However, in comparison with Dairygold the differences are insignificant. Harte (pers.comm.) agrees that the PLCs generate more value-added products relative to the smaller traditional co-operatives.

"The PLCs have more value-added products. The focus is not necessarily to generate value-added products, but that follows from that these companies are much more market driven. Historically the traditional co-operatives, from a producer's perspective, were thinking of how to add value on the raw material. Now organisations seem to provide products that serve their market better. The consequence is of course much higher value-added products, in other words products with better margins and interest. They do not necessarily have a strategy to increase the value-addedness as such, but they have a strategy to choose the markets well and to serve them well. The consequence is higher added value." (Harte, pers.comm.)

Keane (pers.comm.) in general explains the international expansion of the PLCs as a consequence of the introduction of the milk-quotas, with trade liberalisation and globalisation as important long-term factors.

"It has forced them out in the world. It is the same thing with Dairygold, but how far they can go with their capital base is a matter of concern. The PLC route has enabled them to get additional capital from outside investors, which has enabled them to make major acquisitions internationally. Traditional co-operatives are more constrained in doing that. Dairygold will not become PLC in the short term; they are quite satisfied at the moment serving the members interests. So long they are paying a domestically good price there would not be a large member pressure." (Keane, pers.comm.)

Heyes (pers.comm.) explains they decided to expand on international markets and diversify the business before they became a PLC. He says;

"We had decided to diversify on a modest level in consumer brands and food ingredients. Until 1985 the growth was modest, but the transformation into a PLC increased the trade-wind and once we had identified the opportunities we were then in a position to finance them. Bare in mind we became a PLC in 1986 and built our first factory outside of Ireland in 1987 and bought a food ingredient company (Beatrene) in the US as big as Kerry in 1988. That probably opened up the food ingredients market worldwide and brought a lot of synergies with it in terms of management and technology. We then had a platform for future growth. Beatrene would have not been acquired if we had not the capital available. (Heyes, pers.comm.)

Theoretical the PLCs should be more market oriented relative to traditional co-operatives because they are not dependent on a particular raw material. Harte (pers.comm) by and large confirms this.

"The PLCs behave as ordinary corporations. In relation to internationalisation, co-operatives tend to be very domestically and producer tied. Now the focus has changed to build the organisation. Traditional co-operatives have great difficulties in siting production in foreign countries, because they source products from other producers. Perhaps members would perceive that as competitive to their own businesses. In the case of the PLCs they are freer to do that. Regarding marketing strategies, the PLCs have been freer to pick products and market segments that are profitable and not dictated solely by the raw material focus. In the Irish context there has been a development from 3 to 4 exporting companies to 3 to 4 international food companies. That is quite a difference." (Harte, pers.comm.)

Keane views PLCs as rather market oriented in an international context:

"Before they became PLCs they were smaller and were selling products on international markets through IDB (Irish Dairy Board), which means they did not have a strong marketing function themselves. Accordingly they maybe were a bit less market oriented. They were local rather than global. The PLC approach has made them more global rather than local and more market oriented in the sense they would do more selling internationally to the large retail-chains and food ingredients purchasers independent of IDB. This has made them more market oriented. As a consequence the traditional co-operatives have also developed in a more market oriented way in order to compete with the PLCs." (Keane, pers.comm.)

Lynch (pers.comm., GV) says the change into PLC did not entail a major change regarding internationalisation and diversification. It was rather a change of culture within the enterprise:

"It is more about getting people to think different. There was a tendency as a co-operative just taking in milk and be supplier oriented and supplier driven. Now there is a tendency to see if there are opportunities with customers and to see what we need to manufacture in order to satisfy the needs. It is not driven by the supply culture anymore. Now we see if there is something that is related to our skills and knowledge. The move into PLC certainly brought that cultural change. We are now much more market oriented and that would have been the major change from the co-operative mentality to the current PLC mentality." (Lynch, pers.comm.)

The presence of external investors may ameliorate the performance of quoted enterprises according to Gill (pers.comm.):

"The external investors are always looking for the companies performing as good or better than similar companies internationally. They will be benchmarking their performance and making that known to the company if they are happy or not in the way they are developing their companies. I think the companies have responded to that. The Avonmore Waterford merger is partly a response to the view of the external market that

the industry needs to be rationalised. The decision of Kerry to exit the beef sector would have been a reaction to the market telling them it was not a good business to be in" (Gill, pers.comm.)

The presence of external investors has helped the process in market development according to Flynn (pers.comm.). It has in particular facilitated the internationalisation of the businesses and supported the investments in R&D.

7.2 Analysis

The introduction of tradable shares in the PLCs has made them more *market oriented* relative to before they moved to PLCs. The PLC status has enabled them to expand into business-operations that not necessarily are connected to a particular raw-material. Accordingly it has opened the possibility for the PLCs to act from an organisational point of view and develop the potential of the skills and competencies of the enterprises. The interview-answers from Harte, Keane and Lynch suggest that the PLCs are more market oriented in comparison with traditional co-operatives that are much more producer oriented.

The access of risk-bearing capital enables the PLCs to make investments in new areas. The PLCs have successfully *expanded internationally* and *diversified into new businesses* without being obstructed by the domestic production of raw-materials. This either deviates from their objectives of maximising the return of investments. Dairygold has also expanded internationally. However, the international expansion and the growth of turnover in Dairygold has been less compared to the PLCs. The organisational form could not solely explain the differences. But the objective of Dairygold, i.e. maximising the output of the members, probably does not allow international expansion and diversification to the same extent as in the cases of the PLCs. Expansion internationally and into new products does not solve any transaction theoretical problems of the farmers. Dairygold is probably demarcated in major investments in the long run due to limited sources of financing. The PLCs have larger possibilities of raising risk-bearing capital due to the quotes on the stock exchange market.

8 Management

8.1 The structure of management

The transformation into PLCs has entailed some changes in the composition of the board of directors and the incentives of the management. It has enabled the presence of external experts on the board of directors and managers to be remunerated corresponding to their performance.

The board of *Avonmore Waterford Group PLC* is comprised of twenty-eight non-executive directors and eight executive directors. The chairman of the PLC is also chairman of the co-operative society. All non-executive directors are farmers except two that are external experts. They do not represent the interest of any particular shareholders. The executive directors belong to the top management of the PLC. (Avonmore Waterford, 1997)

The board of *Golden Vale PLC* is comprised of seventeen non-executive directors and two executive directors. The chairman of the PLC is also chairman of the co-operative society. Two directors are external experts and the remaining non-executive directors are farmers as are all directors of the co-operative society. The external experts do not represent any shareholders of the PLC or the co-operative. (Golden Vale, 1997)

The board of *Kerry Group PLC* consists of fifteen non-executive and five executive directors. The chairman is a non-executive and he is a former director of the co-operative society. He is co-opted by the PLC. Nine of the non-executive directors are representing the co-operative society. Three of them are former directors of the co-operative society now only representing the board of the PLC, two of them are considered as external experts and one vacancy. The external experts do not represent any owners of the PLC. (Heyes, pers.comm.)

The board of *Dairygold* consists of ten directors, which all are members of the co-operative. There is no external experts or executive managers represented on the boards of directors. (Dairygold, 1997)

External experts have not been represented to a huge degree until recently according to Gill (pers.comm.). Even if they do not represent any particular owners of the PLCs, the external experts of Kerry, Glanbia and Golden Vale represent the investment community in a broader sense. Keane says the external experts are represented to a modest extent. However, he explains that is a rule of the business;

"…so far the business is doing well the shareholders will not raise their voices. The number of the external experts is not that important, the quality of what they say is more important. As long as investors consider their opinion is expressed they will be satisfied." (Keane, pers.comm.)

Harte (pers.comm.) explains that the farmers will continue to be a majority of the board representation *"as long as they can keep farmers as informed and equipped to go on the board the farmers will remain the control of the PLCs."*

The PLCs are using external experts on the boards of directors, but external investors are not represented at all. The explanations according to Lynch (pers.comm.) and Harte (pers.comm.) are;

"The amount of money external investors put in is a very small percentage of their portfolio, about 1-3%. If your are not performing well they will just sell their shares. They do not wish to become involved in strategies and such things. They keep their shares if you fulfil their expectations." (Lynch, pers.comm.)

"The external investors are institutional investors and they put pressure on the PLCs by demanding reward and in selling or buying the shares."

From a theoretical view, the organisational transformations from traditional co-operatives into PLCs change probably the prerequisites of management required and the incentives of the management. Keane (pers.comm.) and Myers (pers.comm.) say the background of the managers of the PLCs has started to change;

"We are in the beginning of the second generation of managers in the PLCs. Golden Vale and Avonmore Waterford have both recently recruited chief executives from outside. The traditional co-operatives still have managers from the co-operative family, while the PLCs have chief executives from outside treating the PLCs by and large in the same way as other PLCs in other industries." (Keane, pers.comm.)

"Traditionally there is no differences between the managers of the PLCs and the traditional co-operatives. They would all come from the dairy industry, but it is changing right now. The PLCs would be more inclined now to recruit senior management from outside the dairy industry, rather than the traditional co-operatives. However, that is only starting to happen and it is changing slightly." (Myers, pers.comm.)

A relatively large degree of the senior managers in the PLCs are "home-grown", i.e. they are recruited internally within the firms. Gill (pers.comm.) states that the managers are as skilled as the managers in other PLCs.

"There has been a remarkable high home grown of most of the management available in the PLCs. Its remarkable the extent to which outside management has not been involved in the Irish dairy companies. In a sense they have moved from domestic companies to international companies. One of the reasons they could develop so quickly was that they were starting with reasonably good management and other professional people." (Harte, pers.comm.)

"I think the managers in the PLC co-operatives are as good as or better than the managers in other of the quoted PLC companies." (Gill, pers.comm.)

"*We have an unusual situation. There were eight to nine people joining Kerry in the start and among them Denis Brosnan plus two other top mangers. They are very homegrown. Through acquisitions we have also recruited some very fine people. But, by and large the senior management is home-grown." (Heyes, pers.comm.)*

"By and large two-thirds of the senior managers are home-grown and one-third is recently recruited from other companies." (Lynch, pers.comm.)

Gill (pers.comm.) says the managers in the traditional co-operatives are not as experienced internationally as the PLC managers.

"Relative the traditional co-operatives I think by and large the PLC co-operative managers are much more experienced internationally, because they have to go out and acquire businesses in overseas markets and manage them. Most of the co-operatives have not been in the position to do that, accordingly the management would not have that broad experience." (Gill, pers.comm.)

Before the current PLC co-operatives were quoted on the stock exchange market they were not practising any senior management remuneration system. The use of management reward system was facilitated by the introduction of tradable shares in the former co-operatives. The traditional co-operatives, such as Dairygold, are not using any senior management remuneration system. The remuneration policies in the three PLC firms are by and large based on attracting, retaining and motivating executives required to ensure the best interests of the shareholders. The remuneration systems of the three PLCs are based on similar principles. The essential components of the remuneration package for the senior executives are basic salaries, performance related annual bonus and share based incentives. The basic salaries and the annual bonus are in general based upon the performance of the individual manager. The objective of the share option scheme is to encourage identification with shareholders' longer-term interests. The remuneration of the managers increases provided the rate of the share increases.

According to Harte (pers.comm.) the agency costs of the PLC co-operatives have been reduced due to the current organisational systems. The supervision of the performance is improved as they are quoted on the stock exchange market. Analysts, shareholders, professional magazines and newspapers watch the performance of the firms and reduce the risk of managers doing anything out of the shareholders interest.

"They have done it pretty well with regard to the management. They all have share options systems, most of the senior managers individually have more shares than other individual owners. Accordingly, the incentives are much stronger. The change of governance has certainly improved the performance. There is also the visibility of the share price and that kind of supervision of the performance. The outside supervision is much greater as an effect of that they are public companies, which has reduced the agency costs." (Harte, pers.comm.)

8.2 Analysis

The move into PLCs has removed the *agency problems* associated with managers of traditional co-operatives. The task of the managers is facilitated because the objective of the PLCs is more straightforward relative to co-operative firms. The presence of share prices facilitates the decision-making of the management, i.e. the *decision-maker problem* has disappeared. The *follow-up problem* in the PLCs has also disappeared. The presence of a public share price, analysts and press watching the performance of the PLCs reduce the risk of managers acting out of the interest of the shareholders.

The presence of a share price allows the PLCs to use a senior management *remuneration system* that give managers clear incentives of acting in the interest of shareholders. In Dairygold managers do not have any remuneration system that reward managers when they fulfil the objectives of the owners. That is probably a weakness.

There are no *external investors* representing on the board of directors in the PLCs. However, they have started to use *external experts* on the board of directors from outside the firms, which enhance the possibilities of finding competent directors. Dairygold merely uses members on the board of directors, neither managers nor external experts are represented. This probably demarcates the possibilities of finding skilled and competent representatives to the board. The transformation into PLCs has probably increased the possibility of *recruiting managers* from outside the "co-operative sphere". The interviews suggest that it just has started to happen in the PLCs.

9 Conclusions

9.1 Environmental conditions

The Irish farmers have few incentives to organise the processing of their milk vertically in co-operative firms according to the *transaction cost theory*. The milk-quota regimes together with the intervention system guarantee the disposal of the farmers' milk to a satisfying profit. This combined with a large number of processors and a transparent price system, implies that the farmers do not perceive any *market failure*. They are acting on a "sellers market". This was the prevailing environmental condition both before and after some of the co-operatives transformed into PLCs.

Before the dairy processors converted into PLCs there was a large number of non-member suppliers, dry members, dead and non-traceable members. This suggests that the membership was very heterogeneous and the farmers perceived very little benefit in membership. The members did not appreciate their *patron role.*

The financing by contributed share capital was almost non-existent and there had also been very little allocation of the annual surpluses. The use of unallocated funds has financed most of the investments. This suggests that members had little interest in their *investor role*.

The lack of correction of market failure and the weak investor and patron roles suggest that the co-operatives had substantial *agency problems* and *property rights problems* before they transformed into PLCs. They could be considered *degenerated co-operatives*.

The *heterogeneous membership* provides few incentives for monitoring the co-operatives due to the absence of market failure. The *follow-up problems* probably gave the management a larger freedom of movements. The investments into value-added processing, diversification into other businesses and international business activities were probably not primary in the members' interest. Expansion of enterprises' size into businesses out of interest of the owners is referred as the *portfolio problem.*

The heterogeneous membership suggests that the board of directors and the management of the co-operatives probably had difficulties in assessing the members' opinion regarding investments, i.e. the *decision-maker problem* was present. The co-operatives had substantial *property rights problems*, due to the large amount of *unallocated capital.* The members had no claim on a substantial part of the assets. Consequently the members had few incentives to invest in the co-operative firm as their residual claims could not be transferred when they withdrew, i.e. *horizon problem*. The use of open membership encouraged members to act as free riders and entailed the *problem of common ownership.*

9.2 Membership

9.2.1 Traditional co-operative

The results of the interviews suggests that Dairygold plays an important role as a *competitive yardstick* regarding the milk price paid to farmers. However, this is hard to prove empirically. The presence of traditional co-operatives could be beneficial for all milk suppliers in Ireland.

Dairygold is a multipurpose co-operative. A lot of the members are also considered inactive members. This suggests that the *membership is heterogeneous*. The activities of the firm do not correspond with all members' interest. Consequently the members have limited *transaction theoretical* incentives of integrating vertically, i.e. the members are weak in their *patron role*. However, this is stated with a reservation redarding the purpose of the co-operative as a competitive yardstick. This may entail that the patron role of the members of Dairygold is between important and unimportant. The substantial amount of unallocated capital suggests that the members show a weak interest in their *role as investors*.

The international businesses do not correct any market failure to the advantage of the members. They do not receive any benefits of the international expansion, as most of the capital is unallocated. The members have little interest in their *role as patrons and investors* in the international businesses.

The lack of correction of market failure and the weak investor and patron roles suggests that Dairygold has substantial *agency problems* and *property rights problems*. Dairygold could be considered as a *degenerated co-operative*.

The unallocated capital and the international businesses suggest that the members have serious *follow-up problems*. The management may act out of the members' interest. Inactive members are unwilling to withdraw, probably due to speculative reasons. This suggests *problems of common property*. The international businesses and the diversified activities suggest that the members have portfolio problems. The investments are not made with regards to the preferences of the members.

9.2.2 Entrepreneurial co-operatives

Kerry and Glanbia could be considered as *entrepreneurial co-operatives*. The introduction of tradable shares in the PLC-part of the enterprises have better defined the *property rights* and removed the *agency problems* associated with traditional co-operatives. However, the agency problems have remained within the new co-operative societies. The open membership and the substantial amount of unallocated capital lead to the *problem of common property*. Members have few reasons to redeem their co-operative shares as their true value could be realised in the future. The membership of the co-operative societies is *heterogeneous*. Problems associated with that are partly reduced by the introduction of diversified voting in Kerry.

The voting power is kept together by the co-operative society. However, a proportional co-operative model is probably more efficient than the current traditional societies.

The introduction of tradable shares strengthens the *investor role* of the members. However, the investor role is hampered by the presence of traditional co-operative societies.

The patron role is probably as weak as before going PLCs. The patron role remains relatively weak. At least as long as traditional co-operatives are acting as competitive yardsticks.

9.2.3 Combination co-operative

Golden Vale quoted the whole enterprise on the stock exchange market. However, the farmers of the original geographical area of the firm retained the control of some parts of the primary processing. Therefore, Golden Vale could be considered as a *combination co-operative*.

The introduction of tradable shares has better defined the *property rights* of the owners and eliminated all *agency problems* associated with the former traditional co-operative organisation. There are no serious co-operative agency problems within the co-operative part of Golden Vale as there are no capital or physical assets involved.

The *investor role* of the farmers is probably even stronger than in the case of Kerry and Glanbia as all shares are tradable and no unallocated capital is present. The *patron role* of the members is as strong as in the case of the other two PLCs. It is probably not even necessary from the farmers point of view to maintain the current control of parts of the primary processing, due to the lack of market failure.

9.2.4 External investors

The potential inherent conflict between the farmers' role as patrons and the external investors regarding the milk price is not a problem. The structure of the industry is competitive and the processors are paying "*market price"* for the raw-milk, i.e. no market failure is currently present.

The continuos decrease of the suppliers *percentage of the total share holding* in the cases of Glanbia and Kerry is not detrimental from the farmers point of view. Provided the current market conditions the farmers do not have to fear that external investors are wielding market power to the disadvantage of the farmers. Therefore the formal influence is of subordinated importance. The major external investors are all institutional investors and they probably also have limited interests in exercising practical influence over the development of the firms' business operations.

9.3 Marketing

The introduction of tradable shares in the PLCs has made them more *market oriented*. It has opened the possibility for the PLCs to act from an organisational point of view and develop the potential of skills and competencies of the enterprises. Dairygold is much more *producer oriented*.

The access of venture capital has enabled the PLCs to *expand internationally* and *diversify into new businesses*. This also corresponds to the objectives of the PLCs. Dairygold has also had the same development, but to a relatively modest extent.

9.4 Management

The introduction of tradable shares has removed the *agency problems* associated with managers in traditional co-operatives. Both the *decision-maker problem* and the *follow-up problem* have disappeared. The presence of a public share price together with analysts and press watching the performance of the PLCs, the risk of managers acting out of the members' interest is reduced.

The presence of a share price allows the PLCs to use a *senior management remuneration* system, that give managers clear incentives of acting in the interest of the shareholders. That is not possible in Dairygold. The task of the managers is facilitated in the PLCs. The objective of maximising the profit is more straightforward relative to the diffuse aims of co-operative firms. The transformation into PLCs has probably increased the possibilities of recruiting managers from outside the "co-operative sphere".

The usage of *external experts* in the PLCs on the boards of directors is enhancing the possibilities of finding competent and skilled directors. No *external investors* are represented on the boards of directors. Dairygold merely uses members on the board of directors.

Bibliography

ABN-AMRO. 1996. Raising the value-added: A strategic review of the top 15 European dairy manufacturers, Dublin, Ireland

Avonmore Waterford Group PLC. *Annual reports 1985 and 1997*. Kilkenny.

Avonmore Waterford Group PLC. *Rules of the co-operative society 1997*. Kilkenny.

Barton, D. 1989. What is a Cooperative? *Cooperatives in Agriculture*, ed. Cobia, D. pp 1-20. Englewood Cliffs, NJ: Prentice-Hall.

Boccaletti, S. 1998. Consumption trends of dairy products in the EU. *Structural Change in the European Food Industries - A Case Study of Structural Change: The EU Dairy Industry*, eds Tozanli, S. and Gilpin, J. pp 23-43.

Centner, T.J. 1988. The role of Co-operatives in Agriculture: Historic Remnant of Viable Membership Organization. *Journal of Agriculture Cooperation*, pp 94-106.

Collins, A. 1998. The structure of the European grocery market and implications for the dairy sector. *Structural Change in the European Food Industries - A Case Study of Structural Change: The EU Dairy Industry*, eds Tozanli, S. and Gilpin, J. pp 62-85.

Condon, A.M. & Vitaliono, P. 1983. *Agency Problems, Residual Claims, and Cooperative Enterprise.* VPI Working Paper, No 4, Cooperative Theory Project, Department of Agricultural Economics, Virginia Polytechnic Institute and State University, Blacksburg.

Cook, M. 1994. The role of management behaviour in agricultural cooperatives. *Journal of Agricultural Cooperation* 9. pp 42-59.

CSO. 1997. *Statistical abstract of Ireland*. Government Stationary Office, Dublin.

Cunningham, C. 1993. *A comparative study of Dutch and Irish dairy co-operatives with particular reference to finance.* MSc Dissertation, Department of Food Economics, University College Cork, Cork, Ireland.

Dairygold Co-operative Society Limited. *Annual reports 1985 and 1997*. Mallow

Department of Agriculture and Food (DFA), 1997. *Annual review and outlook for agriculture and food industry*. Dublin, Ireland.

Dijsselbloem, J. et. al. 1992. *Financing Methods in Irish Dairy Cooperatives from a Dutch Point of View.* Agricultural University Wageningen, NCR, FNZ, Rijswijk ZH.

Donnellan, T. n.d. Towards a model of the Irish dairy sector. *FAPRI and Dairying - Workshop Paper No. 2*. Rural Economy Research Center, Teagasc, Dublin, Ireland.

Enright, P. 1997. National regulation and the changing geography of the Irish dairy processing industry. *Agribusiness Discussion Paper No. 16*. Department of Food Economics, University College Cork, Cork. Ireland

Fahlbeck, E. 1996. *Essays in Transaction Cost Economics*. Swedish University of Agricultural Sciences, Department of Economics, Uppsala.

Fama, E.F. 1980. Agency Problems and the Theory of the Firm. *Journal of Political Economy* 88, 288-307.

Fama, E.F. and Jensen, M.C. 1983. Separation of Ownership and Control. *Journal of Law and Economics* 26, pp 301-325.

Golden Vale PLC. *Annual reports 1985 and 1997*. Charleville.

Hackman, D.L and Cook, M. L. 1997. The transition to new cooperative organizational forms: Public policy issues. *Cooperatives: Their importance in the future food and agricultural system*, ed. Cook, M. et. al., pp 105-112. Washington, DC: The Food amd Agricultural Marketing Consortium.

Harte, L.N. 1992. Performance and funding of the Irish dairy co-operatives 1974-91. *Proceedings of the Agricultural Economics Society of Ireland.*

Harte, L.N. 1997. Creeping Privatisation of the Irish Co-operatives: A Transaction Cost Explanation. *Strategies and Structures in the Agro-food Industries*, ed. Nilsson, J. and van Dijk, G. pp. 31-53. Assen: van Gorcum.

ICOS, 1998. Annual report 1997. Merrion Square, Dublin. Ireland.

Igoe, L. 1993. *The Irish dairy sector; An international perspective*. Goodbody Stockbrokers, Dublin, Ireland.

Irish Co-operative Organisation Society Limited (ICOS). *Annual report 1997*. Dublin.

Jacobson, R. 1992. Public limited companies and cooperative principles in Irelands dairy sector. *Journal of Agricultural Cooperatives.*

Jacobson, R.E. and O'Leary, C. 1990. *Dairy Co-op Issues in Ireland*, Centre for Co-operative Studies, University College Cork, Cork.

Jensen, M.C. and Meckling, W.H. 1976. Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics* 3, pp 305-360.

Jonnergård, K. 1992. Going PLC: An analysis of co-operative companies tendency to transform into public limited companies. Working Paper Series 11. Institute of Economic Research. Lund.

Keane, M. 1992. How competitive is Irish dairying. *Presented at Irish Grassland Association Dairy Conference*, Clonmel. Ireland.

Keane, M. 1998. Optimising dairy industry structure - empirical study of Irish cheese manufacture. *Structural Change in the European Food Industries - A Case Study of Structural Change: The EU Dairy Industry*. eds Tozanli, S. and Gilpin, J. pp 128-139.

Keane, M. n.d. International competitiveness and agri-chain management - the case of Irish dairying. Deprtment of Food Economics, University College Cork, Cork, Ireland.

Kerry Group PLC. 1998. *Annual report 1997*. Tralee, Ireland.

Kerry Group PLC. *Annual reports 1985, 1996 and 1997*. Tralee.

Nilsson, J. 1994. Co-operative principles and practices in Swedish agricultural co-operatives. *Markets co-operative principles*. Eds Monzon Campos, J.L. et. al. pp 219-248.

Nilsson, J. 1996. New generation farmer cooperatives - what, how and why? *Paper presented at the Internation Co-operative Research Conference*. 1996. Tartu, Estonia.

Nilsson, J. 1997a. Financing agricultural co-operatives under changing member attributes and market condition. *Paper presented at the CEPFAR/COGECA seminar*. 1997. Sånga-Säby, Sweden.

Nilsson, J. 1997b. New generation farmer co-ops. *Review of International Co-operation* 90, No. 1, pp 32-38.

Nilsson, J. 1998. The emergence of new organizational models for agricultural cooperatives. *Swedish Journal of Agricultural Research* 28, pp 39-47.

Nilsson, J. Forthcoming. Organisational principles of co-operative firms. *Scandinavian Journal of Management.*

Noeme, C. and Agular, M. 1998. Recent evolution and perspectives of dairy co-operatives in the European Union. *Structural Change in the European Food Industries - A Case Study of Structural Change: The EU Dairy Industry*, eds Tozanli, S. and Gilpin, J. pp 198-221.

Ollila, P. and Nilsson, J. 1997. The position of agricultural cooperatives in the changing food industry of Europe. *Strategies and Structures in the Agro-food Industries*, eds. Nilsson, J. and van Dijk, G. pp. 131-150. Assen: van Gorcum.

Randall, A. 1987. Resource economics: an approach to natural resource and environmental policy. New York. Wiley.
Rogers, R.A and Sexton, R.J. 1994. Assessing the importance of oligopsony power in agricultural markets. *American Journal of Agricultural Economics* 76. pp 1143-1150.
Schrader, L. 1989. Economic Justification. *Cooperatives in Agriculture*, ed. Cobia, D. pp 1-20. Englewood Cliffs, NJ: Prentice-Hall.
Schuster, W. 1989. *Ägandeformens betydelse för ett företag - en studie av ICA-rörelsen*. Stockholm Scool of Economics. Stockholm.
Sexton, R. 1986. The formation of cooperatives: A game theoretic approach with implications for cooperative finance, decision making and stability. *American Journal of Agricultural Economics*, 1986.
Sexton, R. 1995. Analysis and evaluation of competition policies affecting agricultural cooperatives. SOU 1995:117.
Sexton, R. and Iskow, J. 1992. The competitive role of cooperatives in market-oriented economies: A policy analysis. *Agricultural Co-operatives in Transition*, eds. Csaki, C. and Kislew, Y. pp 55-83. Westview Press, Boulder.
Staatz, J. 1987. Farmers incentives to take collective action via cooperatives: A transaction cost approach. *Cooperative theory: New Approaches*, ed. Royer, J.S. pp 87-107. United States Department of Agriculture, ASC Research Report Number 18. Washington.
Staatz, J. 1989. *Farmer Cooperative Theory: Recent Developments*. United States Department of Agriculture, ASC Research Report Number 84, Washington.
Tietenberg, T. 1996. Environmental and natural resource economics. New York. Harper Collins.
Tozanli, S. 1998. European dairy oligopoly and the performances of large processing firms. *Structural Change in the European Food Industries - A Case Study of Structural Change: The EU Dairy Industry*, eds Tozanli, S. and Gilpin, J. pp 86-107.
van Bekkum, O-F. and van Dijk, G. eds. 1997. Agricultural co-operatives in the European union and issues on the eve of the 21st century. Assen:van Gorcum.
Williamson, O. 1981. The modern corporation: origins, evolution, attributes. *Journal of Economic Literature* 19, pp 1537-1568.
Williamson, O.E. 1985. *The Economic Institutions of Capitalism*. New York, Free Press.
Vitaliano, P. 1983. Cooperative Enterprise: An Alternative Conceptual Basis for Analyzing a Complex Institution. *American Journal Agricultural Economics*, Vol 65, No 5, pp 1078-1083.
Zwanenberg, A. 1997. *European dairy cooperatives devloping new strategies*. Dissertation. University College Cork. Cork.

Personal Communication

Briscoe, R. 981119. Professor. Centre for Co-operative Studies. University College Cork.
Flynn, J. 981112. Glanbia Group PLC.
Gill, J. 981027. Analyst. ABN-AMRO Stockbrokers Ireland Limited.
Harte, L. 981029. Professor. University College Dublin.
Heyes, F. 981116. Secretary. Kerry Group PLC.
Keane, M. 981103. Doctor. Department for Food Economics. University College Cork.
Lynch, S. 981109. Secretary. Golden Vale PLC.
McCormack, M. 981117. Secretary. Dairygold.
Myers, S. 981922. ICOS.
O'Donhoe, S. 981028. ICOS.
Ward, M. 981123. Doctor. Centre for Co-operative Studies. University College Cork.