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**VERTICAL CO-ORDINATION IN TRANSITION
AGRICULTURE: A HUNGARIAN
CO-OPERATIVE CASE STUDY**

IMRE FERTŐ
and
GÁBOR G. SZABÓ

Institute of Economics
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Vertical Co-ordination in Transition Agriculture: a Hungarian Co-operative Case Study

Authors: Imre FERTŐ, senior research fellow, Institute of Economics of Hungarian Academy of Sciences E-mail: ferto@econ.core.hu

Gábor G. SZABÓ, research fellow, Institute of Economics of Hungarian Academy of Sciences E-mail: szabogg@econ.core.hu

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**VERTICAL CO-ORDINATION IN TRANSITION AGRICULTURE:
A HUNGARIAN CO-OPERATIVE CASE STUDY**

BY IMRE FERTŐ AND GÁBOR G. SZABÓ

Abstract

The agriculture is traditional risky business, but in transition countries agricultural producers should face some additional difficulties. The agri-food chains are still suffering from underdeveloped market institutions creating severe barriers for price discovery and high transaction costs to co-ordinate market exchanges. Co-operatives are usually neglected as a possible governance structure in recent empirical analyses. This study analyzes the advantages and limitations of cooperatives for establishing an appropriate vertical coordination forms in the framework of transaction cost economics. We present a case study to show that at the recent stage of development in Hungarian agriculture co-operatives can solve some problems arising from missing and embryonic market institutions. We argue that the co-operative is a good example, how an agricultural co-operative can achieve some of the potential advantages, solving many “traditional” TCE and agency problems and serving its members with a continuing growth.

FERTŐ IMRE – SZABÓ G. GÁBOR

**VERTIKÁLIS KOORDINÁCIÓ AZ ÁTALAKULÓ MEZŐGAZDASÁGBAN:
ESETTANULMÁNY EGY MAGYAR SZÖVETKEZETRŐL**

Összefoglaló

A mezőgazdaság hagyományosan kockázatos vállalkozás, de a mezőgazdasági termelőknek az átalakuló gazdaságú országokban még más, pótlólagos nehézségekkel is szembe kell nézniük. A termékpályák nem rendelkeznek fejlett piaci intézményekkel, így ez akadályozza az ármegállapodást, valamint igen magas tranzakciós költségekkel jár a piaci ügyletek lebonyolítása. A szövetkezeteket, mint az egyik lehetséges irányítási struktúrát, általában elhanyagolják a legújabb empirikus kutatások. Jelen tanulmány a szövetkezetek előnyeit és korlátait elemzi a megfelelő vertikális koordinációs forma kialakítása szempontjából, a tranzakciós költségek gazdaságtana keretében. Esettanulmányunkban bemutatjuk, hogy a magyar mezőgazdasági fejlődés jelenlegi szintjén a szövetkezetek képesek számos, a hiányzó, illetve nem eléggé fejlett piaci intézményekkel összefüggő problémát megoldani. Véleményünk szerint az elemzett szövetkezet egy jó példa arra, hogyan képes egy mezőgazdasági szövetkezet elérni a potenciális előnyöket, ezzel megoldva sok, „hagyományosan” a tranzakciós költségekkel, illetve az ügynök–megbízó kapcsolattal összefüggő problémát, s így a tagok számára egy folyamatos növekedést biztosítani.

1. INTRODUCTION

The vertical co-ordination has been an important topic in agricultural marketing literature since the beginning of industrialization in agriculture. Vertical co-ordination can be defined as „the alignment of direction and control across segments of production/marketing system” (King 1992). Recent literature (e.g. Barkema and Drabentstott, 1995, Peterson and Wysocki, 1997) has distinguished two extreme co-ordination mechanisms: spot markets (external co-ordination) and vertical integration (internal co-ordination). Peterson and Wysocki (1997) instead of discrete governance structures define the term of vertical co-ordination continuum that moves from external mechanisms to internal mechanisms with three transitional stages (contracts, strategic alliances, formal co-operation) between two extreme polar forms. They have noted, opposite to the common approach of the agricultural marketing literature (e.g. Ouden et al., 1996), that single ownership is not necessary for vertical integration, but centralized control is necessary.

The agriculture is traditional risky business, but in transition countries agricultural producers should face some additional difficulties. The transition can be described by considerable uncertainties which caused mainly agricultural policy and recession of the economy. Furthermore, in these countries public institutions are ineffective in ensuring contract enforcement. The absence of enforceable contract to set up any kind of vertical coordination has become extremely difficult. Therefore, searching new partners for long run, relation-specific investments have been associated with high transaction costs for farmers. In addition, this creates severe barriers for price discovery involving high transaction costs to co-ordinate market exchanges. Under these conditions, it is expected that spot markets dominate over other co-ordinate mechanisms. In those sub-sectors, where any type of production contracts does exist, agricultural producers face the hold-up problems (e.g. delayed payment for delivered products), which are stressed strongly by Gow and Swinnen (1998). Increased transaction costs affect on farmer’s choice among various coordination mechanisms.

Recently there are some studies focusing on various governance structures of agriculture in transition countries employing different frameworks (e.g. Boger 2001, Rudolph, 1999, Gow et al., 2000). They analyzed various aspects of vertical coordination forms: interrelationships between governance structures, prices grading and investment in quality production; agricultural franchising; and contract enforcement mechanisms. However, co-operatives are usually neglected as a possible governance structure in em-

irical analysis, although they are very common in developed countries' agriculture. The usual explanation for this fact is that producer co-operatives have a negative reputation in transition countries. But it must be noted that they and their successor companies have still important role in the farm structure.

This study analyzes the advantages and limitations of cooperatives for establishing an appropriate vertical coordination forms in the framework of transaction cost economics. We present a case study to show that at the recent stage of development in Hungarian agriculture co-operatives can solve some problems arising from missing and embryonic market institutions. These problems are very severe for those subsector dominating fragmented and small-scale farms, like fruit and vegetable sector.

The paper is organized as follows. The second section briefly reviews the literature on co-operative theory with special emphasis on the vertical integration employing transaction cost economics. In the fourth section a case study provides empirical evidence about some of the potential advantages of co-operative, solving many "traditional" TCE and agency problems. Conclusions are presented in the *section 5*.

2. TRANSACTION COSTS, AGRICULTURAL CO-OPERATIVES, VERTICAL INTEGRATION

The *New Institutional Economics* has *four fields* which are relevant to co-operative literature: *property rights, transaction costs, agency and incomplete contract theories*. However, we focus mainly on the *transaction cost theory (TCE) explanations underlying advantages of carrying out vertical integration (VI) by agricultural marketing co-operatives (MC)*.

The earlier theory of TCE was built mainly on the works of Coase (1937) and was expanded by Williamson (1985). Transaction costs (TCs) are to be considered as the "price of pricing mechanism", e.g. connected to any other movement or action aimed to carry out transactions (selling, buying, hiring anything) on the market. Briefly we can divide TCs into three categories: *information, contracting and monitoring-enforcement costs*. One can categorize TCs into *ex ante* (before contracting) and *ex post* (after contracting) costs as well.

The main assumptions of the TCE are the *bounded rationality* and *opportunistic decision behavior* in contractual relations (Williamson, 1985). TCE focuses mainly on the *different forms of asset specificity*, like site

specificity, physical asset specificity, dedicated assets, and human asset specificity. In addition, there are three factors that one has to take into account as the key determinants of any of the organizational forms: *uncertainty*, *frequency of transactions* and *externalities* (Williamson, 1985). Generally speaking, in the agriculture the uncertainty (sometime converted into risk) regarding the production and marketing activities is high. In most sectors the frequency of transactions is also very high and there are some externalities, which are also can influence the level of transaction costs (Ollila, 1994; Ollila and Nilsson, 1995)

In agriculture there are some other factors e.g. *perishable products (physical assets)*, *specificity of production and characteristics of the place of production*, which can influence actors to integrate vertically. The numbers of buyers and suppliers are also very important since it can influence the market power and position of every potential contractor (Kyriakopoulos, 2000). All of the characteristics of agricultural transactions underlie the necessity of a closer vertical co-ordination. In some countries and sectors this process used to be taken by agricultural marketing co-operatives.

A growing number of authors (Cook, 1995; Harte, 1997; Hendrikse and Veerman, 2001b; Ollila, 1989, 1994, Ollila and Nilson, 1995, 1997; Royer, 1999, Røkholt, 1999; Staatz, 1984, 1989; Sykuta and Cook, 2001; van Bekkum, 2001 etc.) analyze the (agricultural) co-operative phenomena, using partly or featuring TCE approach, however most of the studies are only theoretical, sometimes heuristic analysis of the pros and cons of co-operatives. Authors usually report a list of advantages or disadvantages of co-operatives or they analyzing a specific issue regarding transactions, governance and financial structure of the co-operative. *However, there is not exist, a consistent transaction cost theory of agricultural co-operatives* like of the neoclassical approach summarized by LeVay (1983) and Staatz (1989).

Before detailed analysis of the co-operative-TCE field we consider the fact that *three main relations* exist between the member and the marketing co-operative: the *product*, the *capital* and the *democratic managing-control* line.

The 'economic' *co-operative principles* are based on the three main connections, as they *were formulated in coherence with the elements of the co-operative's business activity* with the members. In this study we use the *basic American co-operative concept* which reflects three basic criteria: "A cooperative is a user-owned and user-controlled business that distributes benefits on the basis of use" (Barton, 1989, p.1).

The co-operatives used to be considered as the classical form of co-ordination of different and independent farmers in order *to protect themselves against the large commercial and/or industrial companies* which are often in a monopolistic or oligopolistic position. They use long, medium and short term contracts to secure the raw material for themselves and to be able to govern the whole marketing chain (*integration by contracts*). The co-operative, *in the modern sense, is a hybrid formula*, because above the common property (*integration by ownership*) the members sign a special “multilateral contract”. The statute or bylaw, which are the formal legal guarantees that the co-operative will never act against the members and that members will enjoy their advantages and fulfil their duties. The bylaws also defend third parties against the co-operative, making it possible to sign contracts and obtain loans and credits in the name of the co-operative. “The cooperative has, in a way, both markets and hierarchies within the same organisation” (Ollila, 1994, p.88).

In the new co-op models there are additional contracts between members and the co-operative, forcing the members to compete inside the co-op. In fact some of the new co-operative models are acting as market institutions (Cook, 1995; van Dijk, 1997; van Bekkum and van Dijk, 1997; Nilsson, 1997, 1998b).

In Williamson’s theory the governance structure will be chosen according to minimize the production and transaction cost. However, he supposed that the production cost is not changing during the time and process, while the ideal organizational structure will be established. One of the main advantage and possibly reason of the popularity of the TCE, is the fact that TCE discovers that there are exist some other factors–institutions which can influence the market mechanism above the outstanding role of the price. VI through co-operative or other producers’ organization can be ones of the institutions mentioned above. Since there is no complete ownership integration (merger) among the members and the cooperative, the co-operative form of VI is just a *partial one*: “A cooperative is a way of combining both integration and independence” (Ollila, 1994, p.89).

Why are the co-operatives appropriate institutions for establishing VI? The following subsection summarizes briefly the most important reasons, featuring TC related incentives, considerations.

2.1. Advantages of Co-operatives in Vertical Integration

The recent co-operative literature emphasize the following *main incentives* for the establishment of *co-operatives as a form of vertical integration*. *First*, co-operatives traditionally can provide *access and secure markets* for the long term, therefore give *protection for independent farmers* against the large commercial and/or industrial companies. They can also carry out *services otherwise not or available at very high costs*. *Second*, co-operatives *build up countervailing power* and above a certain economics of scale they act as *competitive yardstick* for non-co-operative, conventional firms (CF) and the whole sector with a *better influence on the market and prices*. *Third*, co-operatives in some cases can *increase technological and market efficiency* and carry out activities with a *higher added value*. *Fourth*, co-operatives can *decrease and internalize transaction (information) costs*, with a better flow of information on consumer demand – closer proximity of consumer to farmer and with a unified decision role between two or more levels of the marketing channel. The co-operative can also *lowering both economic and technological uncertainties*, therefore decrease TCs. To *avoid (ex post) hold-up problems* in the case of perishable products and different types of asset specificity is also a main reason to use a co-operative as a governance structure. *Finally*, co-operatives can *increase the income of the members* above by lowering transaction and production cost, by *reimbursement of the surplus for the members made at another level* of the marketing channel.

We conclude that co-operatives can reduce TCs in a several ways. Furthermore, the co-operative is a partial vertical integration, which means that farmers can save a relatively high degree of *independence of economic action*: “Thus, it is possible to reduce transaction costs and uncertainty through the cooperative and maintain the entrepreneurial incentives through the market at the same time.” (Ollila, 1994, p.88)

In addition, there are *several non-economic reasons*, which can also be important in the success of vertical integration by co-operatives (Hakelius, 1996). *First*, co-operatives used to be considered as *organized trusts*. At least in smaller communities (e.g. villages) a highly important issue is which *persons are to be responsible* (manage) for the organization of the co-operative.

Second, the *social and informal network* of the members or potential members is also relevant as a determinant factor in decreasing (external and internal) transaction costs and in the process of the establishment and

the running of the activity of a co-operative. Better *knowledge and confidence* (Røkholt, 1999) among the members is the secret of how co-operatives can be highly efficient from the aspect of human resources, despite the lack the necessary capital to invest. Human asset specificity may become more important in the process and success of flow of information.

An other advantage of the co-operatives are based on *the more closely and informal connection* among the members and between members and co-operative. The *organizational form and decision-making (control) mechanism* of the co-operative and the so-called co-operative principles (ICA, 1995; Hakelius, 1996; Røkholt, 1999) can be taken into consideration as formal-legal securities (guarantees) of trust between the member and co-operative. Hence the *hold-up problem usually not as significant like in any other contractual relation between a farmer and Investment Oriented Firms (IOF)*.

2.2. Limitations of Traditional Marketing Co-operatives

Is there any limitation for co-operatives in the recent *fundamental of agri-business nowadays*? We stress that in differentiated product markets co-operatives need additional risk-bearing capital to be able to compete, difficult to provide due to their financial structure. This fact shed light on the problem, under what circumstances is better to choose an other coordination-organizational form, despite the fact that co-ops can decrease for example TCs and can solve hold-up problems as well.

The *hold-up problem*, probably the most known example for ex post problem/cost, relevant in agriculture, "... arises when one party in contractual relationship seeks to exploit the other party's vulnerability due to relationship-specific assets" (Royer, 1999, p. 49). The hold-up problem is significant in the dairy and fruit-vegetable sectors, explaining the existence high share of co-operatives in these industries (Statz, 1984; van Bekkum and van Dijk, 1997; Kyriakopoulos, 2000). The members of a MC are not likely to fear that after investing into relationship-specific assets, the other party (e.g. the processor or wholesaler) will change its mind and force them to accept lower prices for their products otherwise terminate their contractual relation.

However, searching for an *appropriate governance structure*, it is more precise if (according to Hendrikse and Veerman, 2001b) we are going to distinguish *two specific hold-up problems* in agricultural production chain:

first, prevent post harvest hold-ups (for perishable products) and second, the necessity to attract outside (risk bearing) investments (funds).

Because of the countervailing power feature of the marketing co-operative, both of the problem can be solved in homogeneous product markets and when the investments of the co-op are not specific. However, in differentiated product markets marketing co-operatives are not able to provide the necessary level of investment with a high level of asset specificity, like develop brand names (Hendrikse and Veerman, 2001b). The *democratic decision making will be more problematic* in a co-operative (Hendrikse and Veerman, 2001b), with heterogeneous members due to increasing internal organization costs (Harte, 1997). However, the farmer-member has to make decisions to invest, *taking into consideration to put money into his farm and/or into the co-operative*, therefore to collect enough capital for further VI is challenged by the opportunity to invest into the farms' assets. It is difficult to collect financial funds provided by outsiders for the co-operative as well, because of the *principle of domination of membership control set worse terms* for them. Therefore the second hold-up problem can only be solved by a switch from MC to a CF (Hendrikse and Veerman, 2001b).

We may conclude that agricultural co-operatives have *advantages*, where *there is a significant market failure problem*, especially in the cases of some perishable products like fruit- vegetables and milk, and when the market is not saturated. When the market-mechanism is working well and the different types (contracting, monitoring, enforcement) of transaction costs are not high compared to the internal organization costs, then *a VI (and the co-operative organizational form) is not as desired governance structure and/or marketing strategy*, than in the previous case (Harte, 1997). Hendrikse and Veerman (2001a) also argue that in differentiated product markets with a high level of asset specificity, marketing co-operative is probably not the best solution as a governance structure. They predict governance structures in which members (farmers) have less decision power. However, recent empirical evidences are sparse on this field, and various studies reported controversial experiments on the viability of the co-operatives in modern agriculture.

As a very closely related issue to TCE and the (democratic) decision-making process, there are a number of *potential problems of the traditional (countervailing power) co-operative model* (van Bekkum and van Dijk, 1997; Nilsson, 1998b) according to the *agency theory* (Nilsson, 1998a; Cook, 1995; Vitaliano, 1983). Based on the incomplete contract assumption, the *agency theory concentrates on incentive and measurement prob-*

lems featuring the *individual* and not focuses on the transaction which is the basic unit in TCE (Mahoney, 1992; Royer, 1999). The basic source of the agency problems of *complex organizations is the separation of ownership and control*. In the case of co-ops, the separation of the management (agent) and the owner-members (principals) can arise different incentives, therefore managers sometimes carry out business according to their objectives at the expense of the owners (Royer, 1999).

The most *important agency problems can be divided into two main groups* (van Bekkum, 2001): *investment related and decision-making process agency problems*. In the first group one can find the *common property problems* including external and internal free rider problems, *horizon* and *portfolio* problems, which are connected to the member interest to invest into the co-operative. The *decision-making process agency costs are relating to monitoring and follow up the management activities*, as well to the *influence cost* acquiring if there are different groups with different interests in the co-op, and finally linked to *decision problem of the management* caused by large and heterogeneous membership with different priorities and opinion.

Cook (1995) employs a co-operative life-cycle model consisting from five stages, whereas on stage three he definite five problems. *The five inherent organizational problems of co-operatives* are the following: *free-rider, horizon problem, portfolio, control and influence cost* problems.

There are some possibilities for co-operatives to cope with the above listed organizational weaknesses. The co-operative *can solve* some of the *control and influence cost problems* (Cook and Iliopoulos, 1998). But the spread of *new co-operative models with alternative financing methods and new organizational structures/strategies* (van Bekkum and van Dijk, 1997; van Dijk, 1997; Nilsson, 1997, 1998b) report a possible response for the recent changes in European agriculture. Even *some other forms of alternative producer governance structures* with appreciable and transferable equity shares (Sykuta and Cook, 2001) are likely to emerge, as well *grower associations and participation companies* (Hendrikse and Veerman, 2001a). However, it should be stated, that there exist a so-called *conversation process*, e.g. co-operatives transform themselves into CF (IOF) structure, like in Ireland (Harte, 1997; Zwanenberg, 1992). In the latter cases, well defined property rights (Cook and Iliopoulos, 1998) and the transferability of the residual claims (co-operatives shares) on the secondary market can solve almost all of the above mentioned agency and property rights problems. Harte (1997) finds the above mentioned conversation process as a sure and “normal” stage of his co-operative life-cycle model.

3. THE CASE STUDY: THE MÓRAKERT PURCHASING AND SERVICE CO-OPERATIVE

3.1. Methodology

In this section, we examine the *Mórakert Purchasing and Service Co-operative, in Mórahalom*, which is active in the fruit and vegetable sector. In the first stage of research we have focus on the development of Mórakert Co-operative employing a variety of methods. First, literature searches and review of the most important studies on the topic, especially regarding any printed or multimedia material available about the activity of the Mórakert Co-operative. Second, interviews of the major player, e.g. with President of the Board of Directors and manager of the Mórakert co-operative and with mayor of Mórahalom have been conducted during the last seven years. The interview technique makes it possible to identify the main determinants of agents choice.

In the second stage of the research, data have been collected about the choice of farmers among various supply channels in fruit and vegetable sector of micro region of Mórahalom during the 2000-2001 season using survey technique. The questionnaire was prepared in consultation with members of local agricultural extension services. Due to financial constraints we used postal surveys¹. It should be emphasized that the sample is not random. The survey targeted larger, market oriented farmers, the size of the sample is 74.

3.2. The Situation of Hungarian Fruit and Vegetable Sector

Within Hungarian agriculture, fruit and vegetable sector plays a relatively important role accounting for 12 percent of total agricultural production, and its share varies between 17 and 23 percent of total agri-food exports during the nineties. In addition, recent studies suggest that fruit and vegetable sector in Hungary has remain comparative advantage in last decade (Fertő and Hubbard, 2002). The share of the agricultural private farmers is relatively high in Hungary accounting for above 85 percent of total fruit

¹ Further details of the survey and a copy of the questionnaire are available from the authors upon request.

and vegetable production and above 70 percent in total area used in fruit and vegetable production. Most of them are relatively small farmers, sometimes with only a household plot. It is very important, therefore, that the farmers have to use marketing channels which could give them the strengths of a more concentrated organisations. It is indispensable for them to know the possibilities of the different forms of vertical co-ordination and integration in their sector.

There are some alternative quality measurements in Hungary, so it is difficult to compare individual cases. Basically Hungary applies the standards of European Union, however the control of using them by producers, traders and other actors in the fruit and vegetable market is acting place only in the case of export. However, the increasing influence of the retail chains also lifts the standards to a higher level, since consumers can see the origin, price and class of the product in the retail shops e.g. hyper- and supermarkets (Juhász, 1999).

The main co-ordinators/channels used in Hungarian fruit and vegetable sector are the following: local market, wholesale markets, production co-operatives, marketing co-operatives, producers' organisation (can be existed in the form of company as well, not just as co-operatives), processing industry, wholesalers and retailers.

However, it should be noted that spot markets and different types of contracts (including in some cases contract production) are the most common forms of co-ordination. Different retail chains gain bigger and bigger share from fresh fruit and vegetable market. However, marketing co-operatives and producers' organisations also can solve the marketing problems of the fruit and vegetable producers, in a growing number.

3.3. The Development of Purchasing and Service Co-operative

Before 1990 there was a traditional production type co-operative which in the 1960s changed its form into that of a so-called *specialized agricultural co-operative*, bearing more of the characteristics of the western-type promotional co-operative. This type was more suitable for individual farming, particularly in labor-intensive branches of agriculture such as vegetables and fruit. This specialized co-operative ceased its activity in accordance with the obligations incorporated into *Laws I and II on Co-operatives* (Transition and Unified Co-operative Laws) which came into force in 1992; the co-operative became defunct without a legal successor.

There was a situation in which about 1500 private (small-holder) economic units attempted to do business at their own risk. The average area cultivated by the small-holders varied between 3 and 5 hectares. The greater portion of production is usually sold on different markets. The *problem was connected with the market relation of producers*: they were too small to purchase their inputs and to sell their produce. The producers faced *oligopolistic and monopolistic players* on the market, so they could not influence the negotiation process (including the price offered to them) with their potential partners. However, the machinery facilities were sufficient to ensure good quality and profitable production.

We can conclude that the producers have not enough information about the market, like prices and different actors and they have very limited negotiation power. On the other hand some of producers have already made some *asset specific investments*, however those were not connected to their relations on the market.

It was a *real and huge need to build up countervailing power* for the small-holder economic units. In 1993 the Department of Agriculture of the local authority was established in order to help small-holders submit forms for various applications. The main incentive for establishing a co-operative was very similar to the Danish tradition: economic necessity, arising from the economic and market situation at the beginning of the 1990s. Therefore, as usually used to be the first step in the co-operative development, an organisation was established *to build up countervailing power and help the farmers with information and strengthening their negotiation power*.

In addition, the biased economic structure of the geographic area and the very low profitability of agricultural production led to a situation in which the local authority had to make a choice: to establish an organization to promote farming among the inhabitants or to give them social assistance.

As a first step to strength agricultural producers, the *Common Agricultural and Entrepreneurial Society, Mórahalom* was established in January 1994 with the aim of organizing small-holders *within a loose network*. It is a non-profit organization. Noteworthy is that, due to the existence of the former co-operatives in Mórahalom, people were reluctant to use the word co-operative. Therefore they established an intermediate form, to coordinate certain parts of members' activities. The basic principle of setting up this society was to co-operate, to enable members to step forward, *particularly in the input and output market*. The number of founding members was 35, but by October 1999 membership had increased to 1996.

The main activity, in addition to organizing joint projects, was the *organizing of collective purchasing activities*. This type of co-ordination was successful, and in some cases *savings of 18 or 20 per cent of the purchase cost* were achieved. A *countervailing power was thus established*, and due to the greater volumes involved and cash payment it was possible to buy seeds and chemical fertilizer much more cheaply than would have been possible for the small-holders individually. Thus some *problems of getting information and negotiation were solved*, however, despite the loose network, the additional need for capital was emerged.

Because the society was financed from membership fees the *revolving fund proved insufficient to finance purchases*. Consequently, in practice, the members put together amongst themselves the sums required for the quantities to be purchased. Members were informed of delivery dates, and they transported the input materials by means of their own vehicles and stored them on their sites. These joint purchasing activities were extremely successful, as they could *decrease TCs, e.g. information, negotiation and transportation costs*. However, *the main problem was rather to co-ordinate the marketing of the small-holders' produce*. Therefore, the next step was to set up the *Mórakert Purchasing and Service Co-operative, Mórahalom in April 1995*.¹

The co-operative had 52 founding members in April 1995; by April 1998 membership had increased to 64, and in the Year 2000 the co-op had got more than 200 members. All members have their own land property and assets for farming. The co-operative has no machinery or land capacity connected with agricultural production. The co-operative employs a staff of 23 throughout the year, which is of great significance, since it work is otherwise rather sparse and co-operative employees enjoy relatively high salaries in comparison with the local average.

The main aim of the co-operative is to co-ordinate purchasing and selling activities of the members. The input side of the members' activities was organized first, as this was a simpler task since there were some experiences on that field. Co-ordination of sales began later.

¹ It is important to note that the society was and is still in existence, in parallel with the newly established co-operative. These two organizations were and are still working together, sharing activities and roles in order to achieve the main objective of assisting in and promoting farming among the members. Membership of the co-operative requires at least one year's prior membership of the society and contribution to the activity of the co-operative. Potential members have to apply for membership status, on which the Board of Directors or the General Assembly takes the decision.

Various marketing channels are being used, from individual shopkeepers through wholesale markets to *retail chain networks*. The importance and share of the retail chain networks is increasing year by year. It is very difficult to achieve a foothold in one of the chains, but such a *foothold is a secure position if the co-operative can deliver the entire range of produce to the network*, while also guaranteeing top quality and a high degree of flexibility. About 90 % of the products distributed on domestic markets by the co-operative are sold to retail chains (Tesco, Metro, Spar, Julius Meinl, etc.); wholesale markets are avoided where possible, in order to shorten the marketing chain, therefore reduce TCs.

Table 1 shows that the results of the purchasing and selling activity of the co-operative has increased continuously between 1997 and 2000.

Table 1

Purchasing and selling activities of Mórakert Purchasing and Service Co-operative, Mórahalom in 1,000 HUF

	1997	1998	1999	2000
Purchasing from members	103,987	212,390	233,629	380,937
Joint selling	115,620	256,479	282,127	474,447
Surplus to cover cost	11,633	44,089	48,498	93,510

Another basic aim is for the co-operative to be a kind of non-profit organization, so it runs according to the *business at cost* principle. After the subtraction of deposits and cost from the surplus made annually the co-operative *reimburses members in proportion to their turnover with the co-operative*.

All in all, the co-operative is endeavoring to achieve competitiveness on highly changeable markets. The significance of wholesale markets is now declining. The co-operative is willing, in the interest of its members, to display and market their produce.

One of the main step to improve the competitiveness on segmented markets is for the co-operative to *differentiate its products* from those of other producers. The co-operative sells potatoes and onions in different packaging bearing its name, which makes it easier for the consumer to remember and recognize its produce. The co-operative marks the onions, potatoes and peppers it sells with its own label, and is now attempting to increase the range of products sold in packaging showing its name.

Bar codes are also used, and a registration system is being developed to enable the co-operative to control its selling parameters on computer. The system allows those operating it to distinguish which member's vegetables are being sold to a specific market, and therefore the farmer can be tracked down if problems arise. This facilitates the work of the two purchasers, particularly at peak times, when vast quantities of vegetables and fruit have to be procured within hours.

The co-operative has a site *equipped with a full infrastructure*. For the purpose of achieving easy market access the co-operative endeavored to storage some products at a cold storage depot. This depot covered an area of 186.36 m², and the vegetable storage unit 188.42 m². The cold store had a capacity equivalent to approximately 40 wagons.

To be able to increase the value of the members' products, the co-operative seeks for opportunity to export. 70 percent of the produce purchased from members is sold on the domestic market and 30 percent abroad (Estonia, Latvia, Lithuania, The Czech Republic, Slovakia, Slovenia). The co-operative is attempting to increase the proportion of export sales, but it presently uses exporters to sell its produce abroad. However, the aim is to export as part of co-operative activity.

To fulfil the above mentioned aims and to be able to reduce TCs, the co-operative members and the co-operative had *to invest significantly* in order to increase of the value added of the products sold. Some of the *investments*, made by the members and the co-operative as well, are really *specific*, thus strengthening the closer co-ordination. The co-operative organization itself have got some non-financial support from the local authority and significantly have some state aids according to its successful tenders. However, the main important point is, that the co-op reinvest the *significant part of the surplus made in the co-operative annually*.

The co-operative endeavors to integrate, *not only horizontally but also vertically, the members' farming activities*, and also to develop activities with higher added value. In 2002 a so-called "*agri-logistics centrum*" was set up by the co-operative, which covers 2,958m² including a cold storage depot which is 1/3 of the total area. A handling, sorting and packaging line for vegetables and fruit was put into operation in September 1999 in an other place in Mórahalom, however these kinds of activities will be carry out on the same new site in the future. Therefore everything will be handled in one place, such as purchasing, handling, sorting and packaging of products coming from members and other suppliers, as well as the storage and transportation activities. There will a computer supported information system in the new headquarter.

3.4. The Choice of Supply Channels in Micro Region of Mórahalom

We also investigated, using the survey technique, whether motivations of members of co-operative differ from other producers in the same micro region. In order to learn about the importance of factors determining the choices of a particular supply channels in micro region of Mórahalom, interviewees were asked to respond according to a scale of 1 (very important) to 5 (no important). According to Juhász (1999) we distinguish eight types of supply channels. But, after receiving questionnaires, four marketing channels were identified which differ in the costs of using them: wholesale markets, wholesalers, marketing co-operatives (Mórakert Co-operative in our case) and producer organizations.

Table 2

The importance of various factors in the choice of supply channel
(1, very important; 5, of no importance)

	wholesale market	wholesalers	marketing cooperative	producer organization
convenience	3.8	5.0	4.5	4.4
trust	2.8	3.0	2.4	2.4
quantity	3.2	3.2	2.9	3.3
speed of payment	3.2	2.0	3.5	4.0
good price	2.9	3.2	3.5	3.6
quality no matter	4.6	4.0	4.3	4.5
quality premium	3.8	4.0	4.2	4.2
no alternative	4.1	4.7	4.4	4.2
advance credit	5.0	4.7	4.7	4.6
services	4.4	4.5	3.3	3.7
close connection	3.4	3.8	3.9	3.7
contract	3.7	4.0	3.1	2.8

Table 2 reports the importance attached by producers to various marketing factors. The results are for sales through wholesale markets, wholesalers, marketing cooperative and producer organization. The most important factor for selling through marketing cooperative and producer organization, trust, quantity and the existence of contract. In general, the trust is an

important factor for all producers irrespective to the choice of supply channel. The quality no matter, no alternative to sell to an other buyer, and the advance of credit proved to be relatively unimportant factors in the choice of marketing channels.

Differences were noted among the profiles of responses of producers for sales of various supply channels. The one of the important reason for selling through wholesale markets, good price, was less important for sales via marketing co-operatives and producer organizations. It suggests that former group of producers selling through wholesale markets prefer good price at the expense of higher risk to the latter group of producers.

The speed of payment had a primary importance for selling through wholesalers, but it was relatively unimportant for selling via marketing co-operatives and producer organizations. This implies, contradicting to our a priori expectations, that the existence of hold up problem is not so serious problem, as emphasised by literature of transition agriculture (e.g. Gow and Swinnen, 1998). The reason may be, similarly to Boger (2001) findings on Polish hog markets, that producers in general enjoy immediate cash payment.

The existence of contract was important for selling through marketing co-operatives and producer organizations, but it was similarly unimportant for selling wholesale markets and wholesalers. This can be explained by the specific characteristics of a particular supply channels, namely medium or long run contract usually no exists for relationships between producers and wholesalers.

3.5. Advantages and limitations of the marketing co-operative in Hungary

There are numbers of ways, which the Mórakert co-operative can *decrease TCs*. In line with *purchasing input materials* and to *selling vegetable and fruit products* produced by the members the co-operative is still endeavoring to *establish secure markets* for the long term. It is extremely important since, the producers have got a high degree of market and technological uncertainty. The co-op organizes the buying of input materials and the functioning of selling outlets in a more coordinated way, therefore promoting farming for the small-holders through *better market prices*.

Providing *information*, is also very important with respect to the success of the co-operation between the co-operative enterprise and its members. Members can obtain information from a published circular, which provides

practical details such as when and how input materials ordered can be delivered.

Transportation from and to the main sites of the co-operative is usually achieved through the services of transportation firms. The co-operative has no transport vehicles, and members have to transport their own produce and/or input materials from and to the sites of the co-operative. However, this is cheaper and easier than to transport produce to the wholesale market, thus *lowering the TCs for the individual members*.

The co-op carries out other *services for the members*, like providing consultation (advice) within various fields, such as plant cultivation, the filling in of application forms for subsidies, storage etc.

Apart from lowering transaction costs *the co-operative can provide* almost all of the *general advantages of co-operatives in vertical integration*. It could *build up countervailing power* and *secure markets*, increase technological and market *efficiencies*, carry out activities with *higher added value*. The Mórakert co-operative can also *lowering uncertainties* and *decrease information cost* for the members.

The crucial issue for the future of co-operative is the *loyalty of farmers* to their co-op especially under uncertainties dominating in Hungarian fruit and vegetable sector. There are a number of reasons, why members have still loyalty to their co-op. The *organized trust* connected to relational connections in the co-op are crucial factors to solve the first hold-up problem, *e.g. prevent post harvest hold-ups* (Hendrikse and Veerman, 2001b), at least at the relatively low level of product differentiation. The co-operative is a good example, how an agricultural co-operative can achieve some of the potential advantages, solving many “traditional” TCE and agency problems and serving its members with a continuing growth.

The main problems could be the horizon and common property problem. However, in this stage of co-operative development the members of Mórakert has not these kinds of problems. However, a question of importance was that the co-operative should be able to influence the farmers’ way of thinking in order to *avoid by-passing*. It was an indispensable requirement that members should decide to sell their produce through the co-operative, even if it were possible to sell it at higher wholesale market prices. The small-holders soon realized that they could save transportation costs and time by selling in bulk quantities at the co-operative site. More balanced prices for their produce also gave an incentive for the small-holders to sell to the co-operative. A very important step was that members accepted what kinds of vegetables and fruit it would be better to produce to

find a relatively secure market, to attain higher prices and to ensure better conditions for sale.

To achieve competitiveness, in certain cases the co-operative works on the basis of so-called *production contracts*, which involve the co-operative detailing the requirements for the producer to ensure that the necessary quantity is produced. At the same time efforts are made always to purchase input materials of the same type, to enable members to accomplish excellent, balanced quality in their production. The co-operative also deals with produce derived from non-members, in the interest of achieving better exploitation of its capacity, which in the very future *can arise free-rider problems*.

The retail chains have significant shares in the Mórakert co-operative trade. Some products are sold *on a contractual basis according to weekly prices*. The co-operative is more or less satisfied with the contracts and connections already established, but it should be noted that it is extremely difficult to fulfil the exacting requirements with respect to quality, quantity and range and the other terms of trade and payment stipulated by the retail chains. However, these do provide a secure market and a degree of stability for the farming activity of the members. The question of monitoring is becoming crucial in the context above.

Probably, because of the organized trust and the excellent human factors in the Mórakert co-operative the *agency problem is not really significant* at this level of development.

The ambitious plan is to establish a so called *secondary or regional type co-operative* which can be a good institution to secure markets for the members, to increase product's prices and in the meantime to reduce transaction costs. However to be able to establish such countervailing power and to reduce the co-operative's transaction costs, the co-operative is more and more dependent on non-members trade, which practice *could arise free-rider problems*. Despite the co-operative can solve some of the horizon problems, if the co-operative is going to grow, *it may face with the common property and horizon problems*. The main important weapons in the hands of the co-operative manager and president are secure markets and relatively high prices for good quality products coming from members and non-members alike. However, in a following stage of co-operative development the co-operative can face with the same problems emerged in the case of traditional (countervailing power) co-operative model and can *influence and change the marketing, financial and possibly the organizational strategies of the co-operative*.

4. CONCLUSIONS

It is very common problem in transition countries, like in Hungarian agriculture, that agri-food chains are still suffering from underdeveloped market institutions. This creates many difficulties for efficient exchange and set up reliable co-ordination mechanisms. Empirical evidence suggests that multinational firms and other large-scale companies in the food industry can solve some inefficiencies, including hold-up problems (Fertő, 1999). However, their activities can cover only a small proportion of the Hungarian agri-food sectors. However, a majority of farmers face significant market uncertainties without reasonable risk-sharing techniques, especially in sub-sectors dominated fragmented small-scale farmers, like fruit and vegetable sector. It follows from this that the situation of many farmers has not stabilized yet after eleven years of transformation, therefore their output fluctuates considerably.

The case of a newly established Mórakert co-operative shows, such co-operatives an other can be a solution for farmers to cope with their problems arising from incomplete pricing mechanisms and to reduce transaction costs, at least at regional level. It must be emphasized that problems of farmers cannot be solved simply by government support, however it seems to be vital in the case of emerging producers' organizations, like co-operatives, to be able to set up. The co-operative, analyzed in present case study, is a good example, how an agricultural co-operative can achieve some of the potential advantages, solving many "traditional" TCE and agency problems and serving its members with a continuing growth.

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