The Resilience of the Cooperative Form: Cooperative Beehiving by Swedish Cooperatives

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Abstract The paper identifies the phenomenon of cooperative beehiving. Members de-associate themselves from large cooperatives and form smaller entities, just as bees swarm out of the old crowded beehive in search for a new one. We show in the framework of transaction cost theory that the exiting farmers are those who have experience and advantages in organizing cooperatives and are willing to take risks as entrepreneurs. The new beehives, organized also as cooperatives, rely heavily on outsourcing and start-up assistance plans. Two cases from the Swedish agrifood industry illustrate our claims.

Keywords Cooperative • Cooperative beehiving • Swedish agrifood industry • Transaction costs

> "When the population of a hive rises, one portion of the bees leave in a group, together with the queen and begin looking for a new place to settle" H. Yahya, "The miracle of the honeybee", p. 112

1 Introduction

Cooperatives worldwide have been undergoing waves of successes and failures, many cooperatives cease to exist, others restructure, many have demutualized, while organizational innovations have emerged (Chaddad and Cook 2004; Galor 2008; Fulton and Hueth 2009). The trend in the 1980s and 1990s has been for cooperatives to strive for economies of scale through mergers and acquisitions.

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Some farmers, however, have been following the opposite path: instead these farmers de-associate themselves from large cooperatives and form smaller entities, just as bees swarm out of the old crowded beehive in search for a new one. Recently, in Sweden, a number of farmers left their cooperatives and formed smaller cooperatives. We document two cases in this chapter, one dairy and one beef cooperative. In both cases the founding members of these cooperatives were members of very large cooperatives, *Arla Foods* and *Swedish Meats*, respectively.

What is fascinating for the organizational economist is the resilience of the cooperative form of organization. Why do farmers choose the cooperative form for the new business? What drives farmers away from large cooperatives? What are the factors of success of the new "beehives"? These are the questions in focus in this chapter. The inability of large cooperatives to deal with specialized products, and the control problem, i.e. the general dissatisfaction of cooperative members with management (Cook 1995; Porter and Scully 1987) are also central here. The choice of the cooperative as the governance structure for the new entity has been discussed earlier, e.g. by Chaddad and Cook (2004) who refer to the "stickiness" of the cooperative form. They attribute this to the cooperative's advantage to deal with transaction costs and property rights issues. Conditions under which the cooperative form is more efficient for financial decisions are derived by Hendrikse and Bijman (2002). Similarly, more stylized formulations show the advantages and disadvantages of cooperatives versus IOFs (Albaek and Schultz 1998; Karantininis and Zago 2001).

Cooperative beehiving is not a new phenomenon. Hendrikse and Bijman (2002) and Bijman and Hendrikse (2003) document a number of cases in the Dutch agri-food sector where producers gradually abandoned the cooperatively owned auction and formed specialized growers' associations. The emergence of New Generation Cooperatives in the 1980s in the USA constitutes also a similar case (Fulton and Hueth 2009). Many reasons for cooperative failure and consecutive cooperative restructuring have been sited. Financial constraints are a common reason. Cooperative organizations have not been very successful in raising capital for investing in product and market innovations, especially in the highly differentiated modern agri-food system, mainly due to not properly defined property rights (Cook 1995; Hendrikse and Bijman 2002). Based on similar argumentation, Hendrikse and Veerman (2001) argue that large multi-purpose cooperatives are ill-fit to invest in specialized assets, such as brand name capital and specialized processing and distribution systems. Smaller, more specialized cooperatives increase producers' countervailing power, although often adverse selection may be a problem. The trade-off between the production economies of size of the large cooperatives, their slow response and reluctance to involve in product differentiation on one hand, and the transaction costs and diseconomies of scale of the smaller cooperatives on the other, drive the final outcome. This choice is the subject investigated in this chapter.

This study contributes to the development of the cooperative theory by identifying and defining the concept of cooperative beehiving, and outlining a theoretical framework to analyse the beehiving phenomenon. To capture more information of interest in details and depth rather than data points, we use the

case study methodology to investigate this recent phenomenon in Sweden within its real-life context (e.g. following the methodology outlined by Dul and Hak 2008). We find that when the large cooperative is reluctant to pursue opportunities for product differentiation at small scale and to pay qualified farmers higher prices, some farmers will choose to exit. Those who are more involved in the administration of their old cooperative will be the leaders in the new entity since they are the carriers of the organizational know-how. Also, the availability of an outside existing facility, and their ability to outsource and achieve economies of size, are key factors of success.

First, we start with the historical background of the Swedish agricultural cooperative sector, with a focus on dairy and slaughter. Second, the theoretical framework drawing from cooperative theories, and transaction cost economics, will provide hypotheses as to the economic and other reasons for cooperative beehiving. Third, a detailed analysis of two cases—one dairy and one meat cooperative from Sweden—will be presented. Finally, we summarize and conclude and present implications.

2 Historical Background

Influenced by German and British experiences, the farmers of Sweden founded cooperative associations, starting in the end of the nineteenth and the beginning of the twentieth centuries. Typically, the Swedish cooperatives were focusing on one line of production within agriculture, for example dairy, slaughter, grain and crop[1] (Nilsson 1997; Johansson 1985, 1994; Lindahl 2004). Somewhat later, during the 1930s, forest owner cooperatives were also formed (see Johansson 1985, 1994) (Table 1).

In the middle of the twentieth century, farmer cooperatives had reached a strong position in Swedish economy and society—judging from the share of the population they represented at that time, i.e., 20 % (Svenska Institutet 22t Qd). The reason was that the farmer cooperatives had helped greatly with the domestic food supply during the two world wars—being in direct contact with farmers and covering the entire nation. Hence, the Swedish government felt that the farmers should be protected against future competition, having as the main goal to keep an agricultural production leading to self-sufficiency of food products. A system of border protection, export subsidies, and pre-set domestic prices for agricultural inputs and agricultural products, was gradually developed (Johansson 1985, 1994; Fakta om svenskt jordbruk 1996; Lindahl 2004). In order to serve as a strong counterpart to the government, in the recurrent negotiations, a federated system was developed

[1] As can be seen in Table 2, however, two cooperatives (i.e., NNP and Norrmejerier) were both active in dairy and slaughter, mainly due to that these two cooperatives were active in the North of Sweden where the farm density is low.

Table 1 Number of cooperative associations by agricultural sector in Sweden

Coop. sector	1900	1910	1920	1930	1940	1950	1960	1970	1980
Dairy	430	550	565	715	726	375	233	46	24
Slaughter	1	3	21	25	37	25	24	19	10
Forest owners				No data	30	29	23	12	9
Grain & crop	No data	850	1,353	662	795	619	347	144	86

Source: Johansson (1994, p. 75)

and in 1971 the *Federation of Swedish Farmers* (*LRF*) was formed, having both producer cooperatives, such as dairy, slaughter, and banking, as well as individual farmers as members.[2]

The farmer cooperatives reached high market shares under these circumstances: in the dairy sector, they represented 99 % of the market and about 80 % in the slaughter, grain and crop sectors, and 70 % in the poultry sector in 1997 (Bager 1997; Nilsson 1997). Typically, regional cooperatives covered a specific geographical area and no or very little domestic competition took place.

The cooperatives gradually grew larger through mergers, and the farms also became fewer and larger due to a combination of older farmers retiring and the remaining farmers focusing on developing more efficient production processes on their farms (Lantbrukskooperativ årsbok 1996, 1998). Hence, one common feature in the agricultural sector has been that many farmers have bought or leased neighboring farms in order to become more efficient and profitable. In the case of the dairy sector, the largest cooperative in the end of the 1980s was *Arla*, having 64 % of the domestic market in 1991 (Lantbrukskooperativ årsbok 1996, 1998). The dairy cooperatives were members of the national organization *Svensk Mjölk* (*Swedish Milk*). Table 2 summarizes some key figures on the dairy cooperatives in 1991, 1994, and 1997. As can be seen there, *Arla's* number of members decreased, while the turnover increased during this period. Table 2 also shows that *Arla's* size—both in terms of number of members and turnover—exceeded the other dairy cooperatives by far. *Skånemejerier*, being on second place in size only corresponded to 17 %, and 20 % of *Arla's* membership and turnover in 1997, respectively. *Arla* attempted to merge with a small dairy cooperative, which would have given *Arla* a 66 % market share. This attempt, however, was eventually stopped by the *Swedish Competition Authority* in 1992. After this, *Arla* started to look for collaboration possibilities both in Finland and Denmark, an effort that was intensified once Sweden joined the European Union in 1995. Finally, a merger with Danish *MD Foods*, forming *Arla Foods*, took place in April 2000.

In 1971, there were 18 regional slaughter cooperatives, and one mixed (dairy and slaughter), joined together at the national level into one organization called *Slakteriförbundet* (*The Slaughterhouse Association*). There were several mergers during the 1980s and 1990s, leading to five slaughter cooperatives by 1993

[2] Today, the LRF has 29 cooperative organizations and 170,000 individuals as members. In addition, the LRF has eight subsidiaries, for example working with insurance, financial consulting services, and media. Source: LRFs homepage.

Table 2 Membership and turnover of Swedish dairy cooperatives 1991, 1994, 1997

	1991		1994		1997	
Cooperative dairy	Members	Turnover (MSEK)	Members	Turnover (MSEK)	Members	Turnover (MSEK)
Arla	15,710	11,086.8	11,628	11,689.9	9,385	13,298.0
Falköpings Mejeri	427	364.4	414	296.9	358	280.7
Gefleortens Mejeriförening	377	3.8	341	265.7	243	266.9
Gäseneost	205	58.2	163	93.6	147	96.5
Milko	2,176	1,373.0	2,075	1,466.7	1,793	1,391.6
NNP	5,385	2,048.3	4,444	2,061.0	3,515	1,973.7
Norrmejerier	1,746	1,079.2	2,319	1,536.5	1,870	1,349.4
Skånemejerier	2,184	1,533.0	2,063	2,478.9	1,641	2,596.3

Note: the NNP and Norrmejerier cooperative were active in both dairy and slaughter. *Source*: Lantbrukskooperativ årsbok (Yearbook of farmer cooperatives) (1996, 1998)

Table 3 Membership and turnover of Swedish slaughter cooperatives 1993, 1995, 1997

	1993		1995		1997	
Cooperative slaughterhouse	Members	Turnover (MSEK)	Members	Turnover (MSEK)	Members	Turnover (MSEK)
Scan Farmek	34,709	6,521.4	33,651	7,913.8	31,600	8,291.6
Scan KLS	4,810	972.0	4,329	867.9	3,955	880.9
Scan Norrland	8,340	784.5	7,266	687.2	6,864	607.2
Skanek	16,394	5,167.6	12,595	3,377.3	11,154	3,157.3

Source: Lantbrukskooperativ årsbok (Yearbook of farmer cooperatives) (1996, 1998)

(Lantbrukskooperativ årsbok 1996, 1998). The situation in 1993, 1995, and 1997 is summarized in Table 3, showing the largest slaughter cooperative (*Farmek*) with more than 30,000 members, followed by *Skanek*, having less than half the size of *Farmek's* membership (Lantbrukskooperativ årsbok 1996, 1998). In 1998, *Slakteriförbundet* changed name to *Swedish Meats*, and an attempt was made to merge all existing regional associations to *Swedish Meats*, but this attempt was unsuccessful. Eventually, the Finnish *HK Ruokatalo* bought what is now known as *HK Scan AB*[3] in the end of 2006. It is important to stress, however, that both *HK Ruokatalo* and *HK Scan AB* are so-called farmer controlled businesses (FCBs), as the majority of the votes are in the hands of farmer cooperatives: the *LSO* in Finland, and *Sveriges Djurbönder* (*Swedish Animal Farmers*) in Sweden. The number of members of *Sveriges djurbönder* has decreased from c 20,600 in the beginning of 2008 to about 16,200 in the beginning of 2011, i.e., a decrease of 21 % (Sveriges Djurbönder's Annual Report 2010).

In the opening quotation, we refer to the beehive analogy and the increasing population of bees that causes bees swarm out in search of a new beehive. Increased membership in the case of cooperatives is not the actual cause of the beehiving

[3] AB = IOF, or joint-stock company/corporation.

phenomenon, but rather increased and differentiated volume and the associated diseconomies of organization.

In order to explore what factors may lead to the fairly new phenomena on the Swedish scene of farmers leaving large, established, farmer cooperatives, to form new small-scale cooperatives, and what the factors of success for the new cooperatives might be, we have studied two cases in Sweden: *Sju Gårdar* (*Seven Farms*, referring to the number of founding members—today there are six members who deliver milk) and *Upplandsbondens* (*Uppland Farmers*). *Upplandsbondens* was formed in the fall of 2006, while *Sju Gårdar* in 2008. Both cooperatives are active in the region of *Uppland* (see map in Fig. 1) and both are producing organic products: the former is a dairy cooperative, consisting of six active dairy producers; the latter is a slaughter cooperative, having 86 members. The empirical data about these cooperatives is partly from official documents and the internet,[4] and partly from two interviews with two directors of these small-scale cooperatives.

The board secretary of *Sju Gårdar*, Mrs *Elisabeth Gauffin*, is an agronomist with a specialization in animal husbandry. She runs her farm together with her husband and two children. She was sitting on the board of *Arla*, when she decided in 2008 to exit and start a small-scale cooperative together with a few farmers in the same geographical area.

In 2006, Mrs *Inger Gauffin Carlsson*, also running her farm with her husband and two children, decided to form a new small-scale cooperative that they named *Upplandsbondens*. In the beginning, the production on her farm included dairy cows, but since large investments were required and *Inger* wanted to devote a lot of time to board-work, it was decided that they were to focus on meat production.

As mentioned earlier, both beehive cooperatives are focusing on organic production and they have limited their activities to the region *Uppland*. The main reason for leaving the large cooperative was that their requirement of premium prices for their organic products was not respected. In the case of the meat producing farmers, they also objected against the extensive transportation of the animals: up to 275 km—or 3 h—to the closest slaughterhouse in the city of *Linköping*. The new beehives consist of members with similar production orientation and potential. *Elisabeth* described those leaving *Arla* as having different educational background, being risk tolerant, willing to work together with others, tired of the old system and therefore willing to try something new. Albeit it being a big step, both could always return to the old cooperative (*Elisabeth* has to pay a new member fee of SEK 18,000[5] in order to re-enter as a member of *Arla*, while *Inger* has stayed as a passive member of *HK Scan AB*).

These two cases show examples of why members leave their cooperative, but further analysis is needed to understand issues such as: under what conditions a member can afford to leave the mother cooperative and form a new one and even compete with the original cooperative; what challenges does such an exit imply?;

[4] See homepage for *Sju Gårdar* and *Upplandsbondens* in Swedish.

[5] 1 SEK is about 0.15 USD, or 0.11 EUR (April 5, 2012).

Fig. 1 Map of Sweden and Uppland

what are the factors leading to the success of the new endeavour?; and why is the new entity also a cooperative?

3 Theoretical Framework

Below, the theoretical framework, based on cooperative theory, organization and transaction cost theory, will be presented. The theoretical framework leads to the development of hypotheses.

3.1 Theory of Cooperatives

A producer cooperative is an enterprise collectively owned by many independent suppliers. It involves both a horizontal arrangement between members and a vertical coordination mechanism between the upstream members and the downstream processor.

What distinguishes a cooperative from an IOF (investor owned firm) with a single focus on profit maximization is members' plurality of interests (Trifon 1961). So the guiding principle regarding understanding a cooperative is that members advance the interests of their own farm portfolio through a cooperative. They place the cooperative between themselves and a market they must deal with (Fulton 1988). However, agricultural markets are showing the tendency to become more heterogeneous on the demand as well as the supply side. Consumers demand more variety and higher quality; producers respond to intensified competition from globalisation and saturated markets by developing and marketing a broader range of new products (Hendrikse 2011). The developments in agricultural markets highlight the importance of specific assets at the downstream stage of production, which puts pressure on the upstream oriented cooperatives. Wirenga et al. (1997, p. 53) state that a "drawback of co-operatives is that their locus of power (and

perspective), even if they have integrated processing and distribution facilities, is close to primary production and far moved from the market. This does not make them very suitable for taking the guiding role in an agrifood value-added partnership, the very purpose of which is to derive competitive advantage from adding those values that consumers want." The implication seems to be to abandon the cooperative structure. The trend towards differentiation and innovation has resulted in changes in the governance of marketing channels, like horizontal mergers, associations falling apart, emergence of dual distribution and heterogeneous cooperatives (Fulton and Hueth 2009). What is very curious, still, is the persistence of the cooperative organizational form, especially when it comes to the governance of innovations and entrepreneurship.

Opportunities for successful innovations are by all means important to an enterprise. The free riding problem as the result of team production impairs cooperatives' incentives for differentiation and innovation. Helmberger (1966) raises the question "... how can an individual with an entrepreneurial flair be rewarded for his talents by the creation of a cooperative?" (p. 1430). A member who perceives and seizes an opportunity has to share the surplus or residual in proportion to his patronage, not according to his contribution of good judgment and business acumen. Another internal factor, according to Helmberger (1966), that confines the growth and development of cooperatives is the "single origin constraint" imposed by the special interest group that form the organization in the first place. "The cooperative ... may need to pass up many good prospects that are incompatible with its life blood" (p. 1431). Furthermore, the leadership paradox of members leads to the tendency that cooperatives are often poorly managed. "To the extent that farmers participate in the leadership role, they may contribute to poor decisions and hamstring management; to the extent that they don't, ownership is separated from control" (p. 1431).

Cooperatives, especially those large complex ones, suffer also from the collective decision making process entailed by the democratic nature of the organizations. The cost of group decision making is likely to increase with the size and diversity of the cooperative. The decision making procedure in cooperatives is usually much slower than in IOFs. Because many of the decisions affect the distribution of income among the members, cooperative members are more likely than their IOF counterparts to seek involvement (e.g., via the board) in deciding a broad range of issues that are considered merely strategic in an IOF (Staatz 1987). When multiple principals engage in an entrepreneurial exercise, the challenge is how to combine the institutional frameworks of investor-driven shareholder firms and patron-driven forms of collective action (Cook and Plunkett 2006). Of interest to this study is the observation that cooperative entrepreneurs often choose to re-organize a cooperative entity, even after they break up from the original cooperative.

Despite of its resilience, the cooperative is not the dominant organization form, and we observe a lot of cooperative failures. To explain this, Cook (1995) suggests a life cycle theory, where the dominance of the cooperative form rises and declines through time. Thurow (2001) points to the economic history of the U.S. as evidence

for a decline of most forms of cooperative organizations, attributing this to factors related to "social capital". Thurow describes the ability to get organized as one of the first elements of social capital. The success of this ability is to a large extent a function of the willingness to have leaders and follow them. He underlines the importance of the nature of organization, namely whether they have a cooperative or competing outlook. These observations are key to the success and failure of the cooperative and are crucial to the formation of beehive cooperatives. In the next section we elaborate more on cooperative failures.

3.2 Cooperative Failures

We have seen that there are fundamental differences between a cooperative and an IOF. It is useful to view the differences among these two business entities in terms of property rights (Hansmann 1996). "The residual claimants to the income generated by the cooperative are its users, whereas in an IOF the capital owners are the residual claimants" (Fulton 1995, p. 1146). It turns out that this fundamental difference creates several problems for the cooperative resulting from the conflict over residual claims: the horizon problem, the non-transferability problem, and the control problem.

1. *The horizon problem* is created when the claims on an asset are shorter than the life of the asset. It is argued that this is the case for producer cooperatives, where members' claims last as long as they are users which is usually shorter than the productive life of most assets. The horizon problem may be one of the main obstacles of capital acquisition by the cooperatives (Harris et al. 1996).
2. *The non-transferability* refers to the fact that members' claims on the cooperative's cash flow are contingent on patronage and are not marketable. This further creates what Jensen and Meckling (1979) call "the portfolio problem": because cooperative claims cannot be bought or sold (no such market exists), the members' ability to diversify or concentrate their asset portfolios is limited. In turn, they will pressure the cooperative management to re-arrange the cooperative's investment portfolio to fit their needs. Hence, one may expect the level and pattern of diversification of a cooperative to differ from that of an IOF. Caves and Petersen (1986) suggest that cooperatives will diversify more than IOFs. Their argument mainly derives from political theory and theory of clubs. The non-transferability problem may cause also some free rider problem since new members of a cooperative are entitled to the same level of price and residual claims as existing members (Cook 1995).
3. *The control problem* is the typical principal-agent problem arising in any firm where there exists separation of ownership and management: the agents being the cooperative managers, whereas the principals are the members. It is argued that this problem is more severe in a cooperative than in an IOF and will result in

scale inefficiency because monitoring costs increase as the number of members increases (Porter and Scully 1987).

The empirical evidence on the impact of these problems on cooperative performance is rather conflicting. Porter and Scully (1987) and Ferrier and Porter (1991) attribute allocative as well as X-inefficiency found in cooperatives in their sample, to these factors. On the other hand, Parliament and Taitt (1989) and Sexton and Iskow (1993), fail to accept most of these hypotheses.

Cooperative failures may take different forms. Fulton and Hueth (2009) document 13 cases of cooperative failures in U.S. and Canada. Broadly, they categorize them in three groups: (1) those that went into bankruptcy or converted to an IOF because of poor financial performance; (2) those that converted to an IOF because of a need to acquire additional capital or a desire to access market value; and (3) those that were in the process of forming or were re-engaging in the market (for example, after bankruptcy). In this chapter, we distinguish a fourth type, which is not actually a failure but rather a re-birth of another cooperative through the process of beehiving. In order to understand further this process it is important to delve further into the organizational aspect of this governance structure.

To understand the process of failure-rebirth through beehiving, we need one more piece in the theoretical puzzle: transaction cost economics (TCE).

3.3 Transaction Costs

The cooperative is one form of governance to deal with vertical integration, forward or lateral, between firms. Perry (1987) sites three broad categories of determinants of vertical integration: (1) technological economies; (2) transactional economies; and (3) market imperfections. While the traditional view was founded on technological economies of scale (Stigler 1951), it is broadly recognized today that this technological argument does not hold, unless we assume absence of transaction costs (Coase 1937; Williamson 1975).

Since TCE have been presented repeatedly in a multitude of publications, it is not necessary to replicate this theory here.[6] However, in a nut-shell we should point out that one of the key elements of TCE is that contracts are incomplete. This incompleteness can distort ex ante investment incentives, and can weaken the efficiency of ex post performance and the adaptation to unforeseen changes in supply and demand conditions. These problems surface themselves when the parties involved in the contractual arrangements are locked-in, especially due to specific investments (asset specificity). Other factors that contribute to the potential contractual hazards are uncertainty, information asymmetries, and bounded rationality.

[6] See for example a recent treaty on TCE by Tadelis and Williamson (2012); also Joskow (2005).

In brief, the principal hypothesis of the transaction cost theory can be summarized in three parts: (a) transactions differ in their attributes; (b) transactions are aligned with governance structures which differ in their cost competences; (c) governance structures are chosen by minimization of the sum of production plus transaction costs. Furthermore, the three pervasive attributes (dimensions) of transactions are (1) asset specificity; (2) uncertainty; and (3) frequency. Asset specificity can take several forms, such as physical, human, site, brand name capital, etc., and measures the degree to which an asset is redeployable outside the transaction. Uncertainty is important because it results into imperfect contracting and maladaptation of the transaction process. Frequency of the transaction "...bears both on the efficacy of reputation effects in the market and the incentive to incur the setup cost of specialized governance" (Williamson 2004).

The analysis following the transaction cost approach is dynamic; it covers the transaction in its entirety, and can be divided into two stages: ex ante and ex post. Ex ante costs refer to those costs of searching, haggling, writing the contract, etc. Ex post costs are associated with motivating, managing and monitoring to deal with opportunistic behaviour. While the emphasis of the property rights and agency theories is on ex post costs, transaction cost theory focuses on ex ante costs.

4 Hypotheses

While large farm cooperatives often involve themselves into product differentiation in large scale, for example, by introducing new types of processed products, yogurts, cheeses, etc., they are reluctant to introduce product differentiation that necessitates differentiation among producers. Organic production and products with denomination of origin are common examples of this phenomenon. One reason being a significant amount of remorse emerging when members receive different prices.

Let us take two dairy farms, farm Type-I and farm Type-II. We assume that Type-I farm has higher production costs and the farmer-owner is heavily involved in the cooperative board. One important reason for the higher production costs for Type-I farmers is that these farmers will have to have more employees at the farm, in order to be able to devote time to the cooperative board. The farmer-owner in the Type-II farm is more efficient in terms of production, and is not involved in the cooperative besides its business part. The underlying assumption is that a Type-I farm has a comparative advantage in "organizational technology", while farm Type-II has a comparative advantage in "production technology"—and vice versa. The farms of Type-I are relatively productively inefficient, while Type-II farms are inefficient when it comes to organization and cooperation with other farms. In fact, not both assumptions are necessary, our arguments and results would work as long as some farms are relatively better "organizers" and better "co-operators" than others.

Let there be a potential for a differentiated product, say with a local brand name which can fetch a higher price than the conventional products of the cooperative. This is potentially feasible with a sunk investment in marketing, promotion, building the brand name, etc. Let us assume that only a small group of producers would qualify for such a program de facto—for example because of geographic location, or some previous sunk investment (for example in some technology, say organic production, new variety or breed, etc.). However, the cooperative management is often reluctant to engage in such a process due to the control problem, or potential conflict between those who are eligible and those who are not, since the former group would receive a higher price. Hence we can put forward the first hypothesis:

H1. When an opportunity for product differentiation at small scale arises the large cooperative is reluctant to pursue it and pay qualified farmers higher prices.

Several of those frustrated potentially eligible producers are tempted to search for ways to reap these benefits, however there are two barriers: production economies of size, and transaction costs. The industry (say dairy, or meat processing) is characterised by very large economies of size in procurement, packaging, distribution, processing, etc. The potential differentiated market is very small relative to the scale economies in this industry and as a result the potential production cost of the differentiated product can be very high if it is produced at a small scale. When this cost is internalised by the member farms it raises their costs at such levels that the new business is uneconomical since costs exceed the expected price. How can the farmers that want to produce the differentiated product resolve this problem? The farms may outsource the processing and distribution operation, however, they have to resolve two more burdens: sunk costs and transaction costs.

4.1 Sunk Costs and Subsidies

There is no easy way to start up a new business, especially when it involves a new brand. Start-ups require investments in lawyers, brand name, market research, etc., and these costs are sunk and often not insignificant. It is a heavy burden for a small number of farmers to undertake. These farmers have then the following alternatives: one solution is to spread this over a large number of farmers; however this is by definition impossible because we assumed the differentiated product is a small scale. A second alternative is to seek capital from outside investors or to borrow. "Going public" is not an easy endeavour for a small number of farmers entering a marginal business in the food industry. This is a model more suited to young start-ups in the Silicon Valley—not for farmers with dirty boots in the farm lands, producing bulk products. Borrowing is of course always an option but, again, it puts an extra burden which will have to be paid eventually and is very risky. Finally, there is a start-up subsidy from the state or elsewhere—for example from EU funds. This is not uncommon and as we shall see in our case studies, this was successfully used by both of the newly formed cooperatives, primarily by *Upplandsbondens*. Since the start-up investment is often too large they require a large scale. Neither of the two

types of farms, I or II, can afford to make the investment on their own. Hence any form of subsidy may act as a catalyst. This brings us to the second hypothesis:

H2. In the absence of other sources of funding, a start-up assistance plan may help the break-up farmers to undertake the necessary setup sunk costs.

What is required for a successful absorption of such outside funding is a serious plan, which is an outcome of a coherent and solid organization. To this we turn soon, but before this, let us look at the other piece of the puzzle: outsourcing.

4.2 Outsourcing: A Source of Transaction Costs

Given the very large economies of size, a newly formed small entity must rely on another large existing facility with excess capacity which is willing to serve the new *beehive* for a fee. This is a *sine qua non*—a necessary condition-for the success of the quest for the new beehive.

This requires a contract loaded with transaction costs and leads to the "make or buy" decision, i.e. will the new cooperative build (make) a new facility or simply outsource (buy) from an existing one? If there exists such a facility, the new cooperative will find it cheaper to outsource the processing; otherwise it will be too expensive to build its own capacity. Hence we can put forward the third hypothesis:

H3. An existing facility with excess capacity for outsource processing is necessary for the success of the new beehive.

4.3 The New Beehive Organization: Why a Cooperative?

The new beehive cooperative must deal with these transaction costs described above. The choice of governance is the key question at this stage. The farmers at the beginning attempt to achieve their goals through their original cooperative [what Hirschman (1970) calls "voice"]. When this is not achieved, a small number of them consider splitting ["exiting", using the terminology of Hirschman (1970)]. Their alternatives are to (a) join another cooperative—if it exists; (b) sell in the spot market, i.e. to an existing IOF; (c) form a new IOF; (d) form a new cooperative. We will rule out options (a) and (b), in our case: (a) because no other cooperatives exist in the market; (b) because their idea of the differentiated production is new, and no IOF will be willing to invest on this, besides if the IOF does make any long-term investment benefits will be taken by the IOF and not by farmers. Hence the farmers are limited in options (c) and (d). We will see why farmers chose option (d): to form a new cooperative.

We put forward two reasons why the choice of the cooperative form is appropriate in this case: one reason has foundations in agency theory and the second in transaction cost economics.

Agency problems: first, there exist information rents due to asymmetry of information between outside investors and farmers—especially Type-I, who are better informed than any outsider about the quality characteristics and the potential of their products. As a result, an outside IOF will incur higher costs and bear larger risks than the Type-I farmers. The second reason is similar to the franchising problem: ex post, after the launch of the differentiated product proves successful there will be a brand name capital created, having characteristics of public good for all participants, and with the potential to be appropriated by, for example the IOF. In order to safeguard the ownership of this brand name capital the cooperative is an appropriate governance structure (Hansmann 1996; Holmström 1999). We can then propose Hypothesis 4:

H4. Internalizing information costs and safeguarding the brand name of the new entity is best done with a cooperative structure.

One may argue that size is a necessary condition for building brand name capital, since it requires significant investments. However, as we have seen above (**H2**) this problem in our two cases was solved by outside funding through subsidised start-up funds.

The hypothesis put forward by transaction cost theory is that the choice of governance structure is in a discrete cost-minimizing manner. So far, we have illustrated two types of production costs: the sunk costs and the processing costs. It is our hypothesis that both of them are outsourced: sunk costs from grants (**H2**), processing from existing facilities with excess capacity (**H3**). What about the transaction costs?

First, as we have seen above, due to low frequency there exist high set up costs of specialized governance. New organizations do not come for free. There is a large amount of time and resources required in negotiations, building trust, creating a common understanding, besides the "ink" costs of forming the new entity legally. It is our hypothesis that the farmers who choose to split and form the new beehive are Type-I farmers when their comparative advantage in "organizational technology" is significant to offset their inefficiency in production. Being close to decision making and corporate information, they are the first to discover and spot the new opportunities. Also, having the experience of meetings and organizational matters they are better equipped to set up the new entity at a lower transaction cost than their Type-II colleagues.[7] Hence, just like in the bee colonies a group of bees swarms around the queen and leaves to form a new beehive:

H5. The Type-I farmers will form the new beehive as a cooperative.

[7] Hendrikse and Bijman (2002) propose slightly different results. However, according to our definition Type I farmers are farmers efficient in organization technology and not in producing higher quality product like the Hendrikse-Bijman Grower 1.

5 Empirical Findings

In this Section we illustrate the hypotheses presented above with the two case studies *Sju Gårdar* and *Upplandsbondens*. The information concerning these two cases has been collected from interviews, from official documents, various internet sources,[8] and a lecture[9] delivered by Mrs. *Elisabeth Gauffin* (Gauffin, 2011a). Two independent interviews were conducted with mrs *Elisabeth Gauffin*, chairwoman of *Sju Gårdar* (Gauffin, 2011b), and Inger *Gauffin Carlsson*, chairwoman of *Upplandsbondens* (Carlsson, 2011). The interviews took place at the interviewees own farms on April 6, and October 5, 2011 respectively. Both interviews were administered by the authors and lasted approximately 2 hours each. The interviewees are sister-in-laws.

5.1 Production Costs

As mentioned in Sect. 2, the key reason for leaving the large cooperative and starting a new, small one was that the established cooperative did not adhere to price premium requirements. In both cases, voice was tried first, but failed. It was not only the farmers that eventually broke loose from their large cooperatives who practiced voice, many others did too, but only some took the step to exit. Producing organic milk and meat is more costly than producing conventionally. All feed has to be organically produced and this leads to higher feed costs. In addition, the per-animal volumes produced are lower than in conventional production, adding to the unit costs. Hence, not receiving a premium price means economic difficulties on farm-level and this spurred some farmers to take the step and leave the large cooperative.

In both cases, the costs for legal assistance, development of trademarks, and performing market analyses—what we refer to as sunk costs above (Sect. 4.1)—was highly underestimated. In addition, especially in the case of *Sju Gårdar*, it has turned out that "organic" was not the most important label—"locally produced" was, however. Therefore, the necessary investments have been putting great pressure on the financial situation of both beehive cooperatives. In the case of *Upplandsbondens*, a great part of these costs have been covered by EU-support money (from the rural development program) and they are worried what will happen if that money ceases to come.

The second part of the production costs, is the processing costs. Being small-scale organizations, it is not feasible to invest in processing facilities of their own. Instead, they have to rely on outsourcing the processing of their products. In the case of *Sju Gårdar*, a medium-sized established cooperative (*Gefleortens mejeriförening*[10]) proved to have excess capacity and they managed to reach an agreement, which

[8] See homepage for *Sju Gårdar* and *Upplandsbondens* in Swedish.

[9] In the course "Cooperatives and Other Agri-Food Systems", held at the Swedish University of Agricultural Sciences (SLU).

[10] The Dairy Association of Gävle (i.e., a city north of Stockholm, on the east coast).

seems to work smoothly. *Upplandsbondens* has a less stable situation when it comes to outsourcing their processing. They use a skilled butcher and have invested in processing equipment, but the impression we got is that this collaboration is somewhat less stable than between *Sju Gårdar* and *Gefleortens mejeriförening*. In addition, *Sju Gårdar* has so far been more successful in creating a well-known brand as well as finding channels to reach the consumer.

In conclusion, we find that Hypotheses **H1**–**H3** hold—especially when it comes to handling the processing costs. By succeeding well with this, *Sju Gårdar* has been better at bearing the sunk costs related to becoming an established market actor themselves, while the *Upplandsbondens* has had to rely on EU-subsidies in order to manage their market entry.

Previous studies have shown that cooperatives in other countries, for example The Netherlands (Hendrikse and Bijman 2002) have adjusted by involving into product differentiation and offering members price premiums, etc.

5.2 Type-I Versus Type-II Farmers

A closer look at the individuals leaving a large cooperative in order to start a beehiving cooperative reveals interesting facts. First, the sizes of the two small-scale cooperatives in our study are quite different: *Sju Gårdar* consists of seven dairy farmers (six are delivering milk today), and *Upplandsbondens* has 86 farmers as members. Naturally, this implies that the costs for collaborating are greater in the latter. Also, it was stressed by the interviewees that it was crucial for success that members took their part of the responsibility and contributed to the cooperative—not only by sending their milk and meat to it. It is clear that both *Elisabeth* and *Inger* have an enormous responsibility in their cooperatives—they do a lot of work-hours and are well-informed about operation details. In the case of *Sju Gårdar*, all members can sit on the board, which deters free-riding behaviour. In *Inger*'s cooperative, seven members sit on the board as well, but the size of the body of members leads to that they have some problems with free-riding.

Elisabeth described the members of her cooperative as being tired of the old cooperative (*Arla*) and willing and capable to start a new one. As mentioned above, many farmers used voice in the old cooperative, but only a handful took the step to exit. Traits she mentioned were "risk tolerant", and "willingness to work together—no 'lonely wolves'". She also believed it to be a strength having differences in age and educational backgrounds, and that the farmers in *Sju Gårdar* were entrepreneurs to a higher degree than the average *Arla*-member. *Inger* expressed the same farmer-traits, in combination with a feeling in the large cooperative of disappointment, due to the failed merger of *Swedish Meats* in the end of the 1990s. Farmers were dissatisfied with the general development of the slaughter sector. This supports our Hypothesis **H5**. In addition, both interviewees have extensive board-experience,[11] which further confirms the hypothesis.

[11] *Inger* even sat on the board of Arla during the time she was an active dairy farmer.

5.3 Outsourcing

Both small-scale cooperatives have outsourced the processing of their products, since they do not have the sufficient economic muscles for investing in processing plants of their own. Investing into a dairy or a slaughter house imply investments "in the 8-digit range", at least, and hence this is not possible. In addition, in both cases, there exists enough excess capacity in the region of Uppland, so finding external processing capacity was not that difficult, albeit somewhat "shaky" in the case of *Upplandsbondens*. Both interviewees said that it would not be possible to start their beehive cooperative, should the possibility to outsource been unavailable. Here, it is important to outsource, both when it comes to processing the products, but also getting a chance to take part in the distribution channels as well as—to some extent—the contacts with the retailers. Put short, outsourcing leads to fairly low transaction costs. Hence, Hypothesis **H3** holds.

5.4 Why a Cooperative?

In the case of *Sju Gårdar*, Elisabeth stressed that a critical factor in closing a deal with the cooperative dairy that processes their milk was that *Sju Gårdar* also was a cooperative: "Had we not been a cooperative, *Gefleortens mejeriförening* would not have been interested in helping us." Elisabeth also mentioned that working in a cooperative was "a tradition" among farmers, and that the traditional cooperative organizational form ensured that all members were treated equally—something important to the involved farmers.

The main reason for *Upplandsbondens* being a cooperative is that the members "feel at home" in this organizational form, a phenomenon also mentioned by *Elisabeth*. Since both interviewees have experience in sitting on cooperative boards—being Type-I farmers—and being the prime movers in founding the small-scale cooperative, the choice of organizational form was not difficult, they both say. They all agreed on that it was worthwhile to accept the time-consuming decision process of a cooperative. Our belief is that the fact that the collaboration between the two cooperatives *Seven Farms* and *Gefleortens mejeriförening* works well, compared to the collaboration between *Upplandsbondens* and its trading partners, could partly be explained by the fact that the latter is not collaborating with a cooperative. Doing business between a cooperative and an IOF often implies problems, due to the fact that the actors do not understand each other's business rationales, etc. Hence, we found support for Hypothesis **H5**. They both stressed that it was essential to safeguard that all future benefits created by the cooperative were distributed to the members and not to external investors. The main reason for this being that they want to get a payoff from exposing themselves to the risks associated with exiting the large cooperative and starting the beehive cooperative. This is an indication of Hypothesis **H4** being supported by the two cases studied here.

Our interviewees also indicated that "luck and timing" are important factors in leaving an established cooperative to create a new one, oftentimes competing with the cooperative they exited from. It is essential that the ones exiting really are willing to make sacrifices in order to safeguard success for the beehive cooperative.

6 Summary and Conclusions

In this paper we have set to analyse the phenomenon of *cooperative beehiving*, when cooperative members leave their cooperative to form a new one. We examine the reasons for leaving the mother cooperative and the choice of the new cooperative organizational form. We present two cases from Sweden, one dairy and one beef beehive cooperative.

We set out five hypotheses which we verify with the two case studies. We find that one main factor leading some farmers to leave their cooperative is the discovery of a demand for differentiated product where the large cooperative is reluctant to engage. A group of entrepreneurial, risk-taking farmers decides to exit and cease this business opportunity. We find that the leaders are usually cooperative members engaged in the leadership of the mother cooperative. This gives them a double advantage. On one hand, they have inside information of the opportunities and the weaknesses of the large cooperative; on the other hand, they can put their previous leadership experience to use in the formation of the new cooperative. The success of the new entity depends also on two key cost-related factors: (a) it is crucial that some processing capacity can be outsourced, otherwise the new coop cannot afford to process on their own, since the scale economies are very large; (b) the set-up sunk costs are also very large for the size of the new entity. Both cases found these costs too high, and both relied on some government and EU subsidy cover up the marketing and other costs related to promotion and branding.

The two cases in Sweden shed light onto the resilience of the cooperative form of organization, which resembles the beehiving process of the bee colonies. This differs somewhat from previous literature on cooperative re-structuring and cooperative failure, where dissatisfied members either dismantle the cooperative entirely, or they often choose other governance forms, such as bilateral or collective contracts (Hendrikse and Bijman 2002; Bijman and Hendrikse 2003; Fulton and Hueth 2009).

Although a complete theoretical model is not presented here, the theoretical underpinnings and the methodology are founded on transaction cost theory. The existing cooperative fails to capture the opportunity of a new differentiated product market. Those who leave choose a governance form that minimizes the total of transaction and production costs. The transaction costs of organization are minimized due to the experience and organizational know-how of the farmers leading the initiative who were previously engaged in the administration and leadership of the large cooperative. Asset specificity is dealt with in two ways. The sunk set-up promotion and branding costs are to a great extend subsidised,

whereas the large investment and economies of scale in processing are avoided through outsourcing, under contract with an existing processing facility. If the organizational structure of the outsourcing entity is also a cooperative that makes the transaction smoother, as we find in one of the two cases (dairy).

Cooperative beehiving was interpreted as a natural process by those involved. There was no animosity between the mother cooperative and the new beehive cooperative. One of the interviewees stressed that it had been a conscious strategy not to talk in negative terms about the mother cooperative. She believed that this had contributed to the positive development of the new beehive.

The study of cooperative beehiving contributes to the deeper understanding of the cooperative firm. Where does a large cooperative fail and why a cooperative is chosen again by dissatisfied members are the key research questions. Further research is required. First, we need to investigate and document other cases of cooperative beehiving in other sectors in other countries, in order to put the hypotheses developed in this chapter to further scrutiny. Second, more theoretical work is needed to formulate the conceptual framework presented here. Transaction cost economics and agency theory provide a solid background against which this theory can be advanced.

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