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Less Discussed Dynamics in the Czech Farm Structure Development

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Less Discussed Dynamics in the Czech Farm Structure Development

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Abstract

The paper provides an empirical study on the dynamics of ownership changes in Czech agricultural companies, which are assigned by unique heterogeneity in ownership forms. Since employee ownership has retained a relatively important place in these structures, neoclassical, as well as institutional theories of labour-managed firms are considered. Building upon efficiency arguments, both approaches suggest the dissolution of labour-managed firms. The empirical analysis utilized detailed survey data from 2004 and accountancy data from 1997 to 2003. We used a cluster analysis to classify companies into homogeneous groups with respect to their ownership structure and stage of restructuring, and analysed these characteristics in relation to performance indicators. The companies were found to be in various transition stages. The results reveal that the most progressed and the most profitable companies have significantly higher capital concentration, a low number of owners and a low share of employee and external ownership. The least restructured companies with higher employee and external ownership show markedly worse performance figures. The restructuring process is complex and farms have adopted different strategies; only restructuring the firm's liabilities by capitalising transformation debts appeared insufficient for improving performance.

JEL classification

D2, L1, L2

Keywords

Cluster analysis, Czech agriculture, Ownership, Large-scale farms, Performance, Principal component analysis.

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1 Introduction

The wide variety of ownership configurations in the transition economies of Central and Eastern Europe has been viewed as a unique opportunity by many researchers to empirically investigate the ownership/performance relationship and the factors of ownership structure development. However, very few studies considered the dynamics of ownership changes and their relationship to economic performance in agriculture. This is despite the fact that large-scale farming has retained its dominance in many transition countries and allowed a formation of various ownership forms. Large-scale farms have been analysed in various contexts, such as efficiency and economic growth or structural changes and property rights development (e.g. Schlüter 2001; Brem 2000). In the context of efficiency and economic advantage, large-scale farms have mostly been analysed in comparison to smaller family type farms, or the effect of their size and legal form on technical efficiency have been discussed (e.g. Latruff et al., 2005; Curtiss 2002). This study will consider the dynamics of the ownership structure in Czech agriculture, which is characterised by heterogeneity in investor and employee ownership, various levels of ownership concentration, and a distinct degree of separation of production control and ownership. The objective of this study is to empirically explore the ownership structure/performance relationship and explain the dynamics of this ownership structure development.

We structure the paper as follows: In the second section, we describe the structural changes in Czech agriculture. In the third section, we present theoretical models and derive hypotheses. In section four, we describe the survey and accountancy data. In section five, we discuss the empirical results from principal component and cluster analyses. We conclude in section six.

2 From Cooperatives to new forms – empirical background

The study focuses on agricultural companies, of either a cooperative or any other legal entity, that have come about through transformation (CRTs), primarily from former collective farms. The privatisation scheme for former collective farms (a) restored original property rights of so-called

eligible persons to the extent of the originally-collectivised assets, with the aim of correcting injustices brought about by collectivisation, and (b) distributed assets acquired after collectivisation among eligible persons and persons once employed in the collective farm. Therefore, newly-formed companies mostly recruited labour that simultaneously held ownership rights; the companies were thus primarily established as labour-managed firms (LMFs). Employed owners (currently working and retired) held an important proportion of assets (on average 73.2% of net equity of the CRTs, currently working 27.8%, in 1994, (Divila 1996)), and thus likely had large influence on the management of the business. However, a large share of the equity was assigned to a number of external eligible persons who for various reasons opted for membership/shareholding (26.8% of the net equity of the CRTs in 1994) And finally, there were residual eligible persons (REPs)², who did not join the new companies owning 35% of the assets of the CRTs (Divila 1996). They requested to receive their transformation claims predominantly in monetary terms, while CRTs would have preferred the settlement in physical terms. Settling REPs' claims has been pursued slowly and has exceeded the end of 1999 deadline³ set by the transformation law. Thus the REPs decided to become 'informal creditors' with significantly restricted property rights and no control over their assets for seven years, rather than becoming members in cooperatives or shareholders in other legal entities. The term "informal credit" refers to the lack of formal contract between parties - CRTs and REPs or the imperfections in contract specification which relate to lacking important components like duration, principals, rental rates, safeguards, etc. It also comprises imperfect institutional environments surrounding these transactions. Both parties expect the state to guarantee their rights by amending the transformation legislation, but political discourse has thus far yielded nothing but uncertainty.

² The average value of the assets assigned to REP is, on average, small. Two-fifths of the REP own assets below 10,000 Czech Crowns (330 Euros), with the "richer" fifth owning over 100,000 Czech Crowns (3,300 Euros) (Divila 2001).

³ The ownership was restored but a range of property rights attributes (like generating income, control over the assets) was not enforceable for 7 years after the adoption of a transformation project i.e. before the turn of the years 1999 and 2000.

In contrast, the terms “transformation debt” or “transformation liability” refer to all liabilities to REPs, either formal or informal. Initially, most of the transformation debts were just informal credits of REPs.

The share of transformation debts on total assets⁴ in 1995 was 37% in Coops, 56% in Limited Liability Companies (LTDs), and 13.6% in Joint Stock Companies (JSCs), respectively; in 2003 these numbers were 25% in Coops, 29% in LTDs, and 3.6% in JSCs. The amount of unsettled transformation claims in the sector was 55 billion Czech Crowns in 1992, 44 billion in 1996 and 15 billion in 2002 (MA 2003). It is supposed that a significant proportion of the transformation debt settlement, however, occurred through capitalisation in which case cooperatives transformed into JSCs, and the REPs joined the company in its new legal form. This led to an extension of the number of owners through external ownership. Therefore, the CRTs are assigned by a high degree of employee ownership and simultaneously high share of external ownership. The rest (29 billions CZK) of the settled transformation liabilities was either paid-off or returned with full title but consequently often rented back by the agricultural company. Under these conditions, the structure of legal entities evolved as illustrated in Table 1.

TABLE 1 Structure of legal entities in Czech agriculture

	1995			1997			2003		
	Coops	JSCs	LTDs	Coops	JSCs	LTDs	Coops	JSCs	LTDs
Total number	1151	298	1132	875	570	1526	686	657	1662
Share on total ag. land (%)	47.0	7.6	20.1	34.5	18.2	21.8	26.3	22.3	21.2
Transform. indebtedness (CZK billions)	37.0	13.6	56.1	34.9	9.2	46.2	25.1	3.6	29.0

Source: MA 1996, 1999, 2003; FADN-CZ 1998, 2003; Divila (2001).

The main shift in the structure happened between cooperatives and JSCs. The number and the area cultivated by cooperatives dropped by around 40 percent, while number of JSCs doubled and the area tripled between 1995 and 2003. Nowadays, all three legal forms occupy more or less similar areas. LTDs are on average almost three times smaller than the other forms and least labour

⁴ FADN-CZ data 1995, 2003

intensive (2.3 persons per 100 hectares comparing with 4.1 and 5.8 in Coops and JSCs respectively). In spite of the inflow of the converted cooperatives the volume of transformation indebtedness fell by 74 percent in the group of JSCs.

3 From Cooperatives to new forms – theoretical discussion

Our notion is that there are three sources/underlying processes of structural change

1. Maximising members utility leading to a gradual conversion of LMF in a profit maximising firm (PMF);
2. Eliminating agency problem if ownership concentrates;
3. Reducing indebtedness by capitalising transformation liabilities to REPs which requires a more flexible business form (conversion of cooperatives into JSCs)

The theoretical discussion considers neoclassical and institutional theory of the evolution of producer cooperatives as a representative for LMFs. The former builds upon Miyazaki's (1984) model.

3.1 Neoclassical theory of the labour managed firm

The neoclassical theory assumes that behaviour of a firm can be explained through its objective and production function, which is subject to a given technology. The existence of various firm objectives interprets the evolution of different organisational forms. A capitalistic firm is traditionally described through the objectives of profit maximisation. An objective of a producer cooperative or LMF has, in the neoclassical theories, been defined in various ways. For example, Domar (1966) and Vanek (1970) build upon the assumption that producer cooperatives maximise the per member income, while Miyazaki (1984) argues that LMFs maximise members' utility, which is a function of income and job security. The latter approach is discussed below in more detail.

The Miyazaki (1984) model considers LMF as a production coalition of member workers with mutually-binding contracts with the above-described objective. Further, it supposes that LMF deals with two capital markets: the internal wage fund and the external capital market. If the LMF needs to lay off some labour temporarily, it may be acceptable if furloughed members are compensated (in agriculture also “in kind”). This compensation must be available for all members, otherwise working members will opt for another job.

In the case that the LMF has access to the perfect capital market, enabling it to optimally schedule the payments of the rental cost of capital, the Miyazaki (1984) model suggests that, if the LMF operates profitably, it will in the long-run optimise members’ remuneration as the subject of their utility function if it replaces all the member-workers by hired workers and gradually reduces membership. This means that the LMF dissolves into a profit-maximising firm. On the other hand, under the threat of bankruptcy the optimal strategy is to expand membership, which will reduce the per member risk of losing one’s job, but of course members must occasionally accept lower-than-opportunity income.

If the capital market is imperfect, LMF which operates profitably at each stage of the path will tend to convert to profit maximising firm, while LMF expecting only long-run profitability to be positive will continue to exist in a labour managed form. In the other cases, the LMF cannot survive. Miyazaki’s results thus suggest that a LMF will inevitably convert into a profit maximising firm when its long-term performance and capital market improve.

3.2 Institutional theory of the labour managed firm

Institutional theory views a firm as a contractual coalition of resource owners who decide to join an economic undertaking because of expected economic advantages. The contract between the coalition participants sets their disposal rights to the firm resources, where firms can vary with respect to the internal institutions which define disposal rights. Institutional economics assumes that the firm internal institutions systematically influence the resource allocation and has inherent,

specific transaction costs. This is because the complexity and uncertainty of the environment's individuals does not allow the contract to be perfect and allows opportunistic behaviour. Internal organisation thus determines the efficiency of resource allocation within the firm and thereby factor productivity and competitiveness. The efficiency of the internal organisation is then, conversely, a factor that influences organisational changes.

Democratic governance structures such as those existing in LMFs are associated with communication and bargaining costs, which exponentially increase with the number of the organisation members and the complexity of the production technique (see, e.g. Williamson 1975). Reorganisation to a hierarchical coordination and decision-making structure can significantly lower communication and bargaining costs. However, a hierarchical organisation brings advantages only if large organisational advantages such as technical scale or scope economies are present. If these advantages are compensated by the transaction costs of the hierarchical coordination and decision-making structure, an organisation could benefit from transforming to a more decentralised and independent governance structure (see, e.g. Williamson 1975).

Another disadvantage of a cooperative organisation is that the traditional equal remuneration and mutual control provide insufficient incentives for labour performance (see, e.g. Sen 1966) and results in high control costs, respectively. These disincentive costs increase with the number of organisation members. This is also true for control costs; nevertheless, these also increase with the increasing firm size and complexity of the production process (Axelrod 1987; Ribhegge 1986). However, both cost categories can be reduced through a firm's conversion to a performance-oriented remuneration and hierarchical control (Alchian and Demsetz 1972). Also, the hierarchical control which would require an ownership concentration and incentive structure is favourable only if the advantages of a large firm exceed control and incentive costs. Otherwise, a transformation to self-employment through which control and incentives are reduced might be advantageous.

Based on Miyazaki's model, transaction cost arguments, and the empirical context presented in Section 2, we can hypothesise that agricultural companies with LMFs' character are less efficient

and represent a transient ownership form which is going to develop into a PMFs with hierarchical organization with more concentrated ownership.

4 Data and variables

Ownership structure and further farm characteristic data were collected in the Czech Republic in 2004. This extensive data survey was organised by the Institute for Agricultural Development in Central and Eastern Europe (IAMO) and by the Research Institute for Agricultural Economics in Prague (VUZE). Data for the construction of selected farm-level economic performance indicators were taken from the Farm Accountancy Data Network (FADN) CZ survey. The sample consists of data on 167 agricultural companies with a legal entity status. These farms include 87 cooperatives, 60 JSCs and 20 LTDs⁵. The firms in the sample can be mostly classified as farms with combined crop and animal production, but their crop/animal production proportions and size significantly varies. The definitions of the ownership and structural variables, as well as performance indicators derived from the data, are provided in Table 1.

5 Empirical analysis

Principal component analysis was applied to detect the mutual relationship between farm ownership and structural variables. This analysis determined six components, which were further used as composed variables in a K-means cluster analysis. The objective of the cluster analysis was to classify analysed companies into homogeneous groups with respect to their ownership structure and stage of organisational transformation. The best clustering solution provided six clusters⁶. The

⁵ This configuration does not necessarily reflect the farm structure in Czech agriculture (see Table 1); it rather reflects the willingness to cooperate in the survey.

⁶ Missing observations for some of the variables in the components caused a significant reduction – to 82 total observations – of the sample size for the cluster analyses. The number of observations in other structural variables which are used to illustrate the cluster differences varies, as indicated in Table 3. The number of observations for the performance indicators is 373. This is because an unbalanced panel for seven years is used. The reason for using panel data is that performance indicators can vary between years depending on the chosen strategy, e.g. investment strategy, and local weather conditions. Therefore, considering only one year could lead to an interpretation bias.

cluster means in various ownership, structural and performance variables and the significance of the cluster differences are provided in Table 2.

TABLE 1: Variables description

	Unit	
EXTEROWN	Share 0 to1	Share of external investors on total number of owners
LTD	No 0/Yes 1	Legal form of LTD
EMPLOWN	Share 0 to 1	Share of employed owners on total numbers of employees
COOP	No 0/Yes 1	Legal form of cooperative
COMPAGE	Years	Company age
OWNDECR	No 0/Yes 1	Intention to decrease the number of owners in the next five years
CAPSHARE	1,000 CZK	Average per owner share on legal (fixed) capital
TRANSFDEBT	%	Transformation debt to asset ratio = level of transformation indebtedness
VOTING	No 0/Yes 1	Voting system equal to one member (shareholder) one vote
MANOWNDIFF	Categ. 1-4	Interest differences between owners and managers
PROBWMORAL	Categ. 1-4	Problems with workers' working moral
OWNENGAGM	Categ. 1-4	Owners engagement in company's operation
NONAGRPROD	Share 0 to1	Share of non-agricultural production on total farm revenues
SIZE	Million CZK	Total farm revenues
PARTEST	No 0/Yes 1	Farm established through partition of formal collective or state farm
CROPSHARE	Share 0 to1	Share of crop production on revenues from agricultural production
MANOWN	No 0/Yes 1	Managers own higher ownership shares that the average share
CAPSHARE2	1,000 CZK	Average per owner share on own equity
OWNDIF	1,000 CZK	Difference between the largest and smallest ownership share in the farm
OWNERNR		Number of owners
EMPLNR		Number of employees
LAND	ha	Size of the cultivated agricultural land
WAGE	1,000 CZK	Average wage per worker
CREDDEBT	%	Credit liabilities to total asset ration = level of credit indebtedness
PROFIT1	%	Return of Assets indicator is constructed as Accounting Value Added from agricultural and non-agricultural activities including operational subsidies divided by total assets.
PROFIT2	%	PROFIT1 without operational subsidies.
LABORPROD	CZK/ working hours	Total revenues from agricultural and non-agricultural activities divided by total working hours.
INVACT	%	Share of total investment in total value of tangible assets

TABLE 2: Cluster means for groups of companies derived from cluster analysis

	Cluster 1 10 obs.	Cluster 2 10 obs.	Cluster 3 13 obs.	Cluster 4 18 obs.	Cluster 5 4 obs.	Cluster 6 27 obs.	F / Chi- square	
Component 1. Ownership structure								
EXTEROWN	82	0.11	0.74	0.74	0.86	0.88	0.80	40.88***
LTD ¹⁾	82	100%	0%	0%	0%	0%	0%	81.00***
EMPLOWN	82	0.09	0.51	0.64	0.76	0.55	0.58	12.57***
Component 2. Stage of transformation								
COOP ¹⁾	82	0%	80%	100%	6%	0%	78%	52.44***
COMPAGE	82	10.70	10.70	11.62	6.22	8.75	10.07	9.20***
OWNDECR ¹⁾	82	0%	100%	69%	22%	50%	67%	29.99***
Component 3. Capital structure								
CAPSHARE	82	113.20	298.40	33.77	147.56	133.75	101.19	16.21***
TRANSFDEBT	82	48.49	15.68	51.65	6.35	3.07	24.75	11.81***
VOTING ¹⁾	82	80%	30%	69%	6%	0%	33%	23.89***
Component 4. Agency problem								
MANOWNDIFF ²⁾	82	1.70	2.40	2.62	1.89	1.75	1.74	13.35**
PROBWMORAL ²⁾	82	1.10	1.20	1.46	1.22	1.50	0.78	10.29**
OWNENGAGM ²⁾	82	3.30	1.90	1.85	2.06	2.50	2.37	28.43***
Component 5. Size and Scope								
NONAGRPROD	82	0.06	0.06	0.08	0.08	0.29	0.03	12.21***
SIZE	82	79.52	143.96	211.28	170.93	307.50	93.84	16.67***
PARTEST ¹⁾	82	100%	90%	69%	44%	25%	70%	14.88**
Component 6. Managerial ownership								
CROSHARE	82	0.40	0.37	0.44	0.44	0.49	0.41	1.08
MANOWN ¹⁾	82	10%	40%	15%	44%	25%	48%	7.85
Other structural characteristics								
CAPSHARE2	82	2298.28	393.11	141.32	153.69	145.77	262.86	7.88***
OWNDIF	64	6.86	1162.13	684.50	1249.13	1298.50	993.70	3.85***
OWNERNR	82	4.20	141.60	297.85	474.78	899.25	253.74	12.82***
EMPLNR	82	42.00	67.00	99.69	76.50	153.25	46.15	14.43***
LAND	82	1183.69	1676.46	1910.74	1778.94	1774.25	1173.63	2.76**
WAGE	82	18.04	15.10	15.14	14.52	15.82	14.78	2.00*
CREDDEBT	373	10.77	9.53	7.71	10.50	9.09	9.79	2.20*
Performance indicators								
PROFIT1	373	32.19	24.09	27.27	24.63	29.81	28.07	6.05***
PROFIT2	373	24.76	19.73	22.32	20.98	26.02	22.81	3.06**
LIQUIDITY	373	1.22	1.51	1.75	1.45	2.34	2.38	6.49***
LABORPROD	373	303.04	253.70	231.07	276.38	266.72	286.91	3.20***
INVACT	237	23.36	12.63	14.94	15.42	11.06	13.77	1.95*

*, **, *** significant at 10%, 5% and 1%, respectively.

¹⁾ Dummy variable. The value in the table indicates the share of farms with the value "1". The test statistics in the last column show the chi-square value from the non-parametric Kruskal-Wallis test of variance differences between more independent samples. In the case of numeric variables, the Analysis of variance (ANOVA) is used to test the hypothesis that the several means are equal.

²⁾ Ordinal variable. The test statistics in the last column for these variables gives the chi-square value from the non-parametric Kruskal-Wallis test of variance differences between more independent samples. The means are used to demonstrate the cluster differences.

The first cluster groups LTDs, and thus typical profit-maximising firms. These farms mainly hire external labour and the level of external ownership is insignificant (11%). Their ownership structure is further assigned by a very low number of owners, high share per owner of the company assets (CAPSHARE2), and significantly lower ownership share differences (OWNDIF) than in other clusters. A markedly lower agency problem refers to low interest differences between owners and managers, and the significantly higher interest of owners in the companies' operation. The LTDs' in cluster 1 are assigned by very high transformation indebtedness. This, in our assessment, relates to their lower willingness rather than lower feasibility of settling their transformation debts to REPs.

Clusters 2, 3 and 6 group companies which are mostly cooperatives; JSCs only represent a small share. Most of these companies were established during the collective farm transformation period at the beginning of transition and are very similar in their external and employee ownership structure. Among the all clusters, companies in cluster 2 have the highest per member ownership share (CAPSHARE). With regard to transformation debts, cluster 2 peaks out when compared to the other two “cooperative clusters”. The low transformation indebtedness leads us to mark this cluster as Low Debt CRTs⁷. Also, the high average capital share per owner in the Low Debt CRTs and the similar span between the richest and poorest owner as in clusters 4, 5, 6 suggest a high minimum member deposit (higher than in the other “cooperative clusters”) which likely reduced the number of eligible members who were able or who wanted to enter the new cooperative. It might also indicate that a company of this cluster was meant to be established by members committed to the company.

Cluster 3, which consists of only cooperatives, is defined as Struggling LMFs; their transformation indebtedness is high, their ownership is disperse and the value of average member share is very low (33,000 Czech Crowns). Moreover, equity is low and almost 5 times smaller than

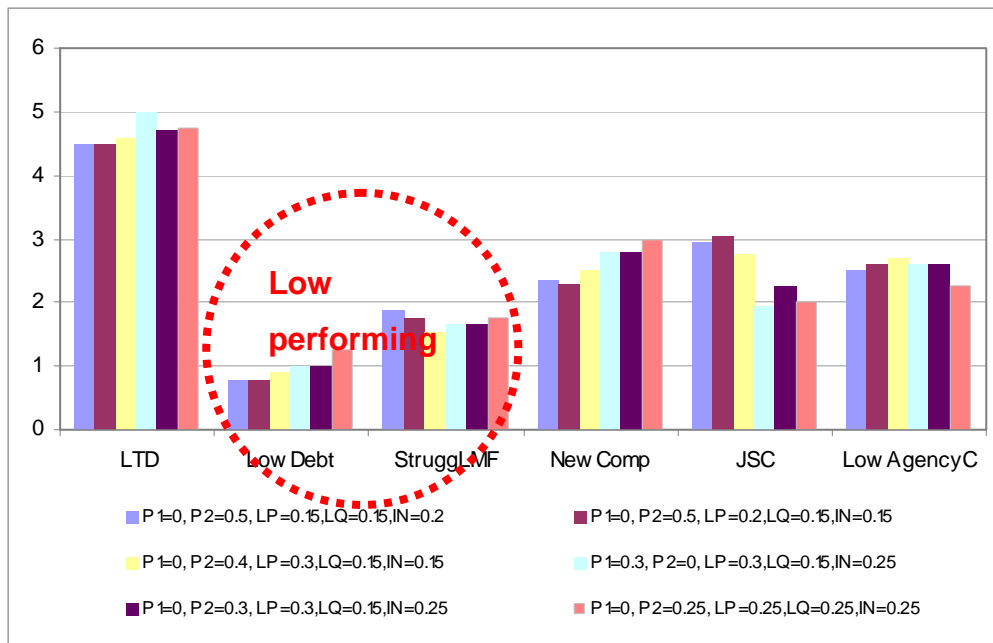
⁷ The variable PARTEST suggests that a significantly higher share of these cooperative compared to the other two “cooperative clusters” were established from only a part of the original cooperatives. For this form of transformation, it was characteristic that the economically healthier (less indebted) parts of the original cooperative were transformed into a new cooperative; the rest went to bankruptcy. This could represent one of the reasons for the lower indebtedness of the cooperatives in cluster 2.

transformation debt. This suggests that the majority of eligible persons opted for non-membership and even members put a modest deposit in the company's equity. Obviously, these companies have not dealt extensively with transformation debts; they were likely not able to. As suggested by slightly lower average credit indebtedness, they might have had greater problems with obtaining a bank credit than other "cooperative clusters".

In contrast to the other two cooperative clusters (2,3), cluster 6 exhibits a significantly lower agency problem. Thus, we name it Low Agency CRTs. It concentrates mainly cooperative farms with a "smaller" size (1,000 hectares, on average). The owners' high interest in the firm's operation seems to contrast with the low value of individual member share and the relatively high number of owners. However, the size, ownership and agency relationship suggests that these companies' objective was to limit expansion in order to maintain efficient management/control. This possibly contributed to a high level of labour productivity in this cluster.

The last two clusters, clusters 4 and 5, represent two factions of mainly JSCs. Companies in cluster 4 were almost exclusively established later in transition as the successors to cooperatives. Therefore we will mark them as New Companies, while we keep the name JSCs for cluster 5. Cluster 5 contains only four JSCs, however, it highlights important differences within JSCs. The *similar* traits between New Companies and JSCs rests in the significantly high number of owners, the highest share of external ownership, the lowest transformation indebtedness, and voting systems proportional to equity shares. The high external ownership and low transformation indebtedness indicate that these companies utilised the JSC legal form to capitalise their liabilities to the REPs, and in this way REPs turned in shareholders. While the average per owner equity shares are the lowest in these two clusters, there is the largest ownership share span and thus inequality among owners. These two groups *differ* in revenues, resulting from the size of non-agricultural production. This production diversification of companies in cluster 5 seems to be the source of the significantly higher return per hectare, and in the end, the higher profitability.

FIGURE 1 Multi-criteria assessment of cluster farm performance



Note: P1 - PROFIT1 , P2 - PROFIT2, LA – LABORPROD, LQ – liquidity, IN – INVACT.
Source: own calculation

In our performance assessment we considered five characteristics: profitability with and without subsidies and agri-environmental payments, labour productivity and liquidity and investment activity. We adopted a simple multi-criteria approach in which we ranked farms in each performance variable and then calculated weighted score; the higher score the better performance. In Figure 1 we summarise the assessment considering six weighting schemes. It is important to keep in mind that our ranking approach produces only indicative judgement that we cannot judge on absolute differences between clusters.

Obviously, profit-maximising firms (LTDs, New Companies and JSCs) perform better; particularly, LTDs exhibit a distinct performance. Of the three cooperative clusters (2, 3, 6) cluster 6 – Low Agency Cooperatives performs best and comparably well as both JSCs (New Companies and JSCs) clusters. In contrast, clusters 2 and 3 (Low Debt CRTs and Struggling LMFs) exhibit the poorest performance in the multi-criteria analysis.

6 Conclusions

If our underlying assumption, that CRTs, particularly cooperatives, were established as LMFs holds, we can interpret the analysis following Miyazaki's model as follows: The sector is in transition from LMFs to PMFs; the lowest performing are cooperatives representing LMFs. Transitional JSCs⁸ show improved performance, with the highest performing being PMFs (LTDs). However, the detailed cluster comparison shows that slight or temporal deviations from this trajectory may occur. These can likely be accounted to agency problems and the low engagement of owners in companies' operations.

To gain better insight into the problem, we investigated the distribution of ownership shares in multi-owner companies. Based on the size of the equity, the average share and the span between the richest and poorest owner, we estimated truncated normal distribution of equity shares for each cluster. The important result of this effort is that we could speculate about the existence of a group of dominant owners. This might be particularly the case of Low Agency, New and Joint Stock companies, where 5% of owners will own 13% of equity, and 25% of owners own almost half. Thus, the richer owners are easy identifiable and management can easily collaborate with them. In contrast, this is not the case with Low Debt companies, where the bulk of owners will always own enough to be motivated to participate in the assembly. Thus, it is likely that management must deal more or less with all owners.

Because the share of employed owners of the total number of owners is twice as high in both of the poorly performing clusters (over 20%) than in the Low Agency cluster and the two JSC clusters (around 10%), it brings us to the assumption that employee preferences might be more extensively incorporated in the firms' objectives in the former clusters.

To conclude, this indicates that the concentration trend might be behind the success of a seemingly LMF cluster (Low Agency CRTs) rather than solidarity, and thus there will be a high probability that these farms will sooner or later convert into PMFs. In contrast, we can hypothesise

⁸ We consider new companies as transitional because of their high share of employed owners, thus the business objective is likely to be a mixture of profit maximisation and employment/wage utility maximisation.

that it might be even the strong multiple ownership (cluster 2) that blocks firm development by not allowing the concentration of dominant owners.

While our analysis has demonstrated the relevance of arguments of both the neoclassical and institutional theories of labour-managed firms' evolution, it has also shown that there are still empirical gaps, and additional research will be needed to understand the structural change.

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