Structural changes and efficiency in Czech agriculture in the pre-accession period[1]

Strukturální změny a efektivnost v českém zemědělství před vstupem do EU

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Abstract: Czech agricultural sector undertook many great changes in the last 12 years. These changes have resulted in the creation of business structure, which, however, is still not finished due to external (market) and internal (enterprise) conditions. The main goal within these changes was to create functional efficient and competitive agricultural sector, which is to survive in ever changing global world, in particular with respect to the intention to join the unified Europe. One of the questions, which is currently discussed very often, is to what extent the current business agricultural structure is efficient in input allocation, eventually which structural changes have to be undertaken to create such effective sector. The main objective of this contribution is therefore to present findings, which were obtained within the research project processing.

Key words: efficiency, transaction costs, economy of scale, organization, business structure

Abstrakt: České zemědělství prošlo v uplynulých 12 letech transformačního období řadou změn, někdy až „turbulentních". Tyto změny s sebou přinesly vytvoření určité podnikatelské struktury, která však dosud vzhledem k vnějším (tržním), ale i vnitřním (v rámci podniků) podmínkám není konečná. Na pozadí těchto změn byl vždy požadavek vytvořit fungující efektivní a konkurenceschopné zemědělství schopné přežít v měnícím se (globálním) prostředí, především se záměrem začlenit se do jednotné Evropy. Jednou z otázek, která je často skloňována v této souvislosti, se týká především skutečnosti, do jaké míry současná podnikatelská struktura agrárního sektoru je efektivní v alokaci vstupů, případně k jakým strukturálním změnám ještě musí dojít, aby takovýto sektor byl vytvořen. Cílem tohoto příspěvku je tedy přispět do této diskuse zjištěnými výsledky, které byly dosaženy v rámci řešeného výzkumného projektu.

Klíčová slova: efektivnost, transakční náklady, ekonomika z rozsahu, organizace, podnikatelská struktura

INTRODUCTION

Historically, the structure of national economy was important for its total performance. At the same time, structural aspects of the particular sectors are of high importance for the sectoral efficiency and therefore competitiveness. Structural changes have played, in particular, key roles in the transformation period, as is the case in the Czech Republic. The questions which are crucial considering agricultural re-structuralisation are to what extent is the current business agricultural structure efficient in input allocation and whether or not all necessary steps contributing to the improvement in a farm efficiency were already done and, if not, what more has to be done. Obviously, there is recognition that agricultural sector is a very specific one, since there are many natural-climatic and other conditions, which, in fact, do not exist in other sectors. Moreover, there is a public demand for maintaining life in rural areas, making the efficiency assessment more difficult. These aspects need to be born in mind when evaluating general performance and efficiency (e.g. economies of scale vs. natural vegetable processes, animal welfare, etc.).

OBJECTIVE OF THE PAPER

This paper is to familiarise the professionals with the main findings, which were obtained during the research processing. One of the main objectives of this research was to identify key changes in the farm structure and at the same time to find the factors causing these changes. Structural changes as to organisational form, ownership, size of farms, production, etc., with relation to their effi-

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ciency were the focus of the research. Besides this objective, the research is to give an answer to the question of what adjustments in farm structure are expected to improve the effective functioning of the sector as a whole. In this paper, the attention is given to the transaction cost theory, economies of scale, institutional arrangements and their relationship to the efficient behaviour.

METHODOLOGY

For this research, individual economic data available from the Farm Accountancy Data Network (FADN) was used, in particular data about assets, capital, profit, subsidies received and others. Further, a sample survey (structured interview) has been conducted which has focused on agricultural enterprise organisation, business strategy and production structure, investment and financial issues, input and output market and the way farmers obtain information. The survey included 23 corporate farms (co-operatives, joint stock companies, limited liability companies) and 11 individual farmers. The surveyed corporate and individual farms were involved in the FADN survey beforehand for years 1999, 2000 and 2001 and thus it was possible to link these databases. As a result of this, comprehensive database including both financial and structural aspects was gained.

The data obtained was analysed by using quantitative and qualitative analyses. To evaluate the financial situation of agricultural subjects and their efficiency, financial indicators and economic results according to the EU FADN methodology were applied.

THEORETICAL BACKGROUND
TO THE EFFICIENCY

The term of competitiveness has become central in the transitional countries in the last decades. Obviously, the competitive advantage of firms or farms results from efficient deployment of factors. Usually, there are three types of efficiency in the theory: technical efficiency (technical relationships between input and output), allocative efficiency (positioning of inputs and outputs according to input and output price relationships), social efficiency (refers to Pareto optimal state). However, these outcomes are based on the neo-classical theory that supposes maximisation behaviour of all individuals. On the contrary, there is some inefficiency – so called X-inefficiencies – which significantly determine the effective utilisation of all inputs. These issues are of the central concerns of the following paragraphs.

Traditional efficiency measures

The first measure of economic efficiency was proposed by Farrell (1957). His firm total economic efficiency, commonly identified with X-efficiency, consists of two components: TE, also assigned as managerial efficiency, and AE, also called factor prices efficiency. Allocative, or factor prices inefficiency, reflects the firm's inability to use inputs in optimal proportions given their respective prices (Coelli, Rao and Battese 1998). This means that allocative inefficiency raises the average cost of production by utilising other than the cost-minimising combination of inputs; this is the result of the inequality of the ratio of factor prices to the factor marginal products (e.g., Porter and Scully 1994; Coelli, Rao and Battese 1998).

For the sake of simplicity, Farrell (1957: 254) considers a firm employing two factors to produce a single output under the condition of constant returns to scale. This condition, together with the premise that the efficient production function, that is, the output that a perfectly efficient firm could obtain from any given combination of inputs is known, permits all relevant information to be presented in an isoquant diagram, as illustrated in Figure 1.

In Figure 1, two production factors, capital, K, and labour, L, are illustrated. Their perfectly technically efficient (TE) usage gives the unit production quantity represented by the isoquant Q'. Point D represents the two factors, per unit of output, that the firm is observed to use. Point C, compared to D, represents an efficient
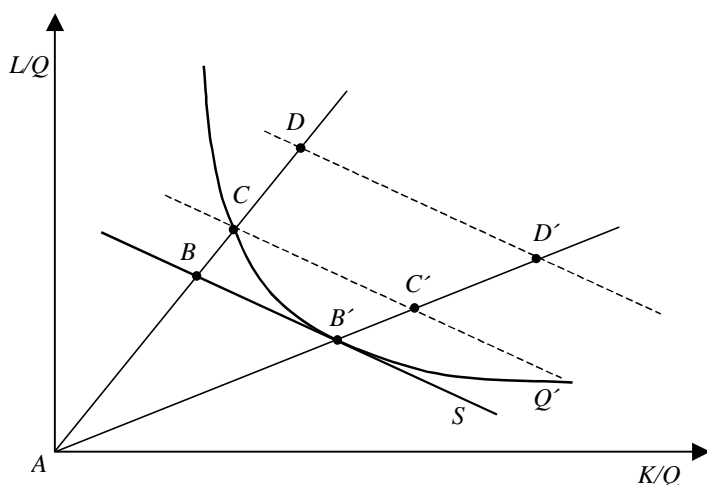

Figure 1. Farrell's components of economic efficiency

Source: Modified from Farrell (1957), Curtiss (2002)

firm using capital and labour of the same intensity as *D*, but needing only a fraction, *AC/AD*, as much of each factor for the same production level. Farrell (1957) also defines this ratio as TE of the firm, *D*. This measure of TE takes the value unity (or 100 percent) for a perfectly efficient firm.

If *S* in Figure 1 has a slope equal to the ratio of the two factor prices and thus represents an isocost function, point *B´* demonstrates the optimal combination of the two factors when the factors are used technically and allocatively efficiently (AE). The costs of production at point *B´* will only be a fraction, *AB/AC*, of those at *C*. Farrell (1957) defines this ratio as the price efficiency of *C*. In later literature, the term *AE of C is used*. As shown in Figure 1, this means that allocative inefficiency raises the average cost of production by utilising other than the cost-minimising combination of inputs.

Based on the marking in Figure 1, the ratios *CD/AD* or *C´D´/AD´*, and *BC/AC* or *B´C´/AC´* illustrate the measures of technical and allocative inefficiencies, respectively. If the observed firm were perfectly efficient, both technically and with respect to prices, its costs would be a fraction, *AB/AD* or *AB´/AD´*, of what they in fact are. Farrell (1957) denotes this product of TE and AE as the overall economic efficiency of a firm.

Later, the economists Färe, Grosskopf and Lovell (1985) released the assumption of constant returns to scale and recognised two components in Farell's (1957) TE, namely, pure TE, which is identical in meaning to the above definition of TE, and scale efficiency (SE). In their definition, a farm is scale efficient if its input-output combination corresponds to the combination that would arise from a zero profit long-run competitive equilibrium situation. The definition of SE as given by Färe, Grosskopf and Lovell (1985) is derived from the profit maximisation condition in the neo-classical theory and thus relies on the assumption of perfect market conditions.

AE as defined by the neo-classical theory involves only the net marginal effects, which can capture the only inefficiencies possible as a consequence of price and quantity distortions; otherwise a perfect market leads, based on Adam Smith's invisible hand concept, to the optimal allocation of resources. No other inefficiencies are admitted, because firms are assumed to purchase and utilise all of the inputs, negotiate their production cost-free, and optimise their production according to profit-maximising behaviour. Leibenstein (1975: 582) refutes this concept and argues that even though inputs or factors of production may be properly allocated to the "right" decision units, there is no need to presume that the decision and performance units involved must decide and

actually use inputs as effectively as possible. Leibenstein (1966: 413) argued, that "for a variety of reasons people and organisations normally work neither as hard nor as effectively as they could".

Efficiency of the firm versus institutional environment

Neo-classical economics deals with a firm as a production function, where the natural production output is expressed in relation to production factors, labour, capital and other goods necessary for the attainment of the calculated production outcome. Therefore, defining production factors and their transformation is an important step in the concept of inefficiency sources.

The transformation of production factors, the production of goods as one of the economic activities can be, based on Coase (1937), co-ordinated not only by a firm, but this firm co-ordination can be (in restricted terms) substituted by a co-ordination by markets. Later, Williamson (1985) extended the firm versus market co-ordination view of an economic activity by entire co-ordination (or contract forms[3]) and thus includes the co-ordination aspects of hierarchical organisation with firm and hybrid arrangements. Therefore, neo-classical production factors, principle-agent relationships within the firm, and market and non-market institutions are decisive for the production outcome.

The contracting relationships or arrangements represent governance structures governing transactions. These governance structures can be, as it follows from the above arguments, divided into firm internal and firm external government structures. Internal design refers to the structure governing the relationship between farm owners, managers and employees, while the external design refers to the structure governing the farm's relationships in the markets (Mathijs and Vranken 2001: 3).

The fundamentals for the explanation of how an institutional environment influences production levels and efficiency was presented, e.g., by Williamson (1985). He argued that if markets are imperfect and/or incomplete, the acquisition of resources could be associated with costs, which transform the information into economically non-optimal and therefore lead to inefficient resources allocation, which decreases production. This argument builds on Coase's (1937) confutation that the co-ordination through markets is not cost-free, but causes TCs[4]. A production deviating from neo-classical production then does not have to be an expression of inefficiency of a firm, but its efficient reaction to TCs of the real world, which

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[3] In market economy systems which are based on the basic economic institutions of private ownership and contractual freedom, the different co-ordination forms such as markets, hierarchies and collectives are founded upon willing (optional) contracts between individuals. Each co-ordination form thus has a contractual basis (Beckmann 2000: 32).

[4] Coase (1937), in his article "The nature of the firm", approaches these costs as "the cost of using the price mechanism". He also states that "The most obvious cost of organizing production through price mechanism is discovering what the relevant prices are", (1937: 390). Also, the firm internal co-ordination determined by the principal-agent relations among the owners, managers and employees is accompanied by costs, costs of organization and TCs, also resulting in moral hazard. Dahlman (1979: 148) compiled different views on TCs into a single fundamental one, namely, that TCs represent resource losses due to lack of information.

can be lowered by non-market institutions providing trust (Hobbs, Kerr and Gaisford 1997).

Firm internal inefficiency factors

The X-efficiency theory explains a firm's internal inefficiencies by virtue of problems concerning (a) differentiating interests of the firm and the firm's individual, who (b) behave based on the principle of selective rationality, and (c) whose effort depends on principal and environmental motivational incentives, (d) inert areas, (e) incomplete contracts, and (f) principal-agent problems as discussed above. Even though some of the determinants (e.g., selective rationality) can be explained only by the psychological concept of X-efficiency theory, other inefficiency determining factors occur in a number of various other theoretical approaches. Agency theory deals, for instance, with the principal-agent problems, basically saying that the owners' inability to monitor managers perfectly makes it reasonable to suppose that managers cannot perfectly monitor their workers. Monitoring problems give span for decision-making about own effort as accompanied with free-riding causing inefficiencies.

The internal TCs relate to the administrating, directing, negotiating, organising and monitoring of joint productive teamwork in a firm. These costs thus relate to principal agency and general intra-firm governance costs. Fahlbeck (1996: 9) also uses Ollila's (1988: 153) TC definition, which adds to the previous definition the costs of all activities of gathering and processing information and solving possible disputes.

We branch out from the consideration that the higher TCs are, the higher the information (resources) losses and inefficiencies that the firm faces are. The relevant question in this context is: What determines the level of TCs in the firm? According to Williamson[5] (1985), the organisational form of transactions in economic life that is decisive for the level of its costs is, beside the contractual form (C), determined by the dimensions of transactions which can be derived from asset specificity (S), uncertainty (U), and frequency (and persistence) (F). When an asset is specific in Williamson's view, it has a drastically lower value in alternative use (Fahlbeck 1996). The uncertainty is closely related to the problems of information and the ideas of bounded rationality – arguments about the limits of human language in expressing and transmitting all existing information and also of the complexity associated with institutions which all are involved in decision making. Frequency indicates the repeating pursuance of the same or a similar transaction. The frequency of transactions influences not only the level of TCs, but also the level of production costs. There are two main reasons for this, namely, the learning-by-doing effect, and the utilisation of indivisible factors related to economies of scale.

Size and firm efficiency

The existing literature on agricultural farm size provided evidence that there is no harmonious position among economists as to whether the small, large or both firm organisations are economically optimal, even considering both scale and TCs issues.

The question of the "efficient boundaries" of a firm is of interest in this section[6]. Defining the efficiency boundaries regarding size, there are basically two issues discussed in literature. First, the TCs associated with the organisation size, and second, economies of scale[7] indicating the optimal extent, which is mostly considered as the technologically optimal size of production. With respect to TCs, the firm internal TCs increase with size. The higher TCs in larger firms relate to the firm's more complex organisational structure, emphasising the principal-agent problems associated with administration and the monitoring problems that stimulate free-riding and decrease effort (e.g., Beckmann 1996, 2000; Schmitt 1993b; Pollak 1985). Returns to scale can be, meanwhile, increasing, constant, or decreasing, where the constant level designs the optimal scale, and the long-run average costs are minimal. Then the firm has to harmonise advantages and disadvantages linked to TC and the scale economies the firm could exploit. This means that firms are not driven by the neoclassical principle of minimising the long-run average costs, but rather behave based on profit maximising principles (see, e.g., Groenewald 1991; Caves and Pugel 1980; and Porter 1979).

DISCUSSION

Farm business structure in the Czech Republic

The structure of land use and farm business structure have changed outstandingly since the beginning of the 90s and the end of the last decade can still be characterised by the structural development (see Table 1).

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[5] We have to keep in mind that Williamson's transaction cost approach builds on assumptions that humans behave based on the principle of bounded rationality, they are opportunistic and risk neutral.

[6] The focus of our study is located in a simple case analysis of one-product technology without any type of vertical integration. Taking more than one product or more stages of the production process, we could also speak about horizontal and vertical integration. However, these will not be considered here in more detail.

[7] The basic concept of the description of scale economies is based on the average cost function. If the average costs decrease with an increasing amount of the produced goods or services, we speak about economies of scale, or in other words, scale advantages. Considering more products in a firm, we could speak about economies of scope, or joint advantages, denotative that average costs decrease by a simultaneous production of two or more products (Beckman 2000: 136).

Following the table, the increase in the number of individual farmers was rapid until 1995 as a result of settled restitution claims. However, in the next few years, the number of individual farms has gone up again and their share in the cultivated land has increased from 23.2% in 1995 to 25.8% in 2000. In 1994, business corporations were established as a new type of corporate farms, mainly as a result of the privatisation of state farms.

Joint stock companies have registered the most dynamic development and their share in the agricultural land has tripled from 7.6% to 21.6%. These companies have evolved mainly from agricultural co-operatives and were the only legal forms with increasing average acreage – from 1 206 ha in 1995 to 1 502 ha in 2000.

On the contrary, the number of agricultural co-operatives has decreased by more than 1/3 in the second half of the 90s accompanied by their lower share in the total agricultural land.

What is behind the development of farm structure (having in mind a significant shift from the legal form of co-operative to joint stock company) between 1995 and 2000? Divila (2001) has provided the explanation that rests in the following causes:

– To avoid possible settlement of transformation debts by agricultural co-operatives, which, according to the transformation law, were obliged to settle the claims. The transformation debts were exchanged for the shares (mostly practically non-tradable shares). The owners of the transformation claims were aware of the bad financial situation of a co-operative while making decisions about its possible transformation and, at the same time, they were expecting higher future profits from the new arrangement (instead of waiting for the uncertain settlement of the transformation debts). However, this cannot be regarded rigorously since, in some co-operatives, members do not want to change the legal form just because that means that their claims would not be settled at all.

– To create the conditions enabling capital concentration into a few interest groups (stakeholders). Capital concentration facilitates a diminishing role of the so-called "self-employment syndrome" existing in corporate types of farms.

There is some incomplete information that (large) corporate farms in particular, limited liability companies or, to a small extent, joint stock companies, are, in fact, owned by a few people or by one family. On the other hand, some large individual farms were transformed into either joint stock companies or into limited liability companies to improve the internal governance and to cut down transaction costs. These changes should not be overlooked when we assess the relatively insignificant increase of individual farmers in terms of their number, or agricultural land farmed between 1995 and 2000. Following this, the proportion of individual to corporate farm-

Table 1. Farm business structure development – individual farms, corporate farms between 1989 and 2000

	Number of farms			Agricultural land cultivated						Average acreage		
				thousand ha			%			ha [3]		
	1989	1995	2000 [1]	1989	1995	2000	1989	1995	2000	1989	1995	2000
Individual farms	3 205	20 820	24 053	12	823	934 [2]	0.3	23.2	25.8	4	39.5	38.8
Corporate farms	1 198	2 395	2 587	4 284	2 722	2 681	99.7	76.8	74.2	–	1 136.3	1 036.2
State farms	174	80	–	1 089	52	–	25.3	1.5	–	6 261	660.0	–
Agricultural cooperatives	1 024	1 105	723	2 622	1 665	1 059	61.0	47.0	29.3	2 561	1 507.4	1 465.3
Business corporations	–	1 196	1 726	–	996	1 579	–	28.1	43.7	–	832.6	914.8
– joint stock c.	–	223	519	–	269	780	–	7.6	21.6	–	1 205.8	1 502.3
– limited liability c.	–	945	1 171	–	714	784	–	20.1	21.7	–	755.9	669.3
Total	4 403	23 215	26 640	4 296	3 544	3 614	100.0	100.0	100.0	–	152.7	135.7

1) The Agrocenzus 2000, which is a statistical survey realised by the CSO, was focused on all agricultural subjects which are larger than 1 ha of agricultural land or meet other criteria. Due to different threshold limits used in Agrocenzus 1995 and 2000, the data in the table was calculated for farms with acreage larger than 3 ha of a.l. In the Agrocenzus 2000 (AGC 2000) survey were 56.5 thousand farms, and of them, 53.5 thousand were individual farms. Of them about 18 thousand were identified as (semi)-subsistence farms with only little of their output being traded. Following this, there are about 38.5 thousand of agricultural farms, and it is the same number as the one presented by the Register of Agricultural Units (Czech Statistical Office) in 2001.

2) The total acreage of agricultural land cultivated by individual farms which met the criteria of AGC 2000 was 962.3 thousand ha and the total number of these farms was 53 460. Therefore, 29 407 mostly agricultural households have cultivated more than 28 thousand ha and they have on average 0.96 ha of agricultural land.

3) Only farms cultivating agricultural land.

Source: Agrocenzus 1995, 2000, The Report on the State of Czech agriculture (Zpráva o stavu českého zemědělství) 1994–2001, own calculations
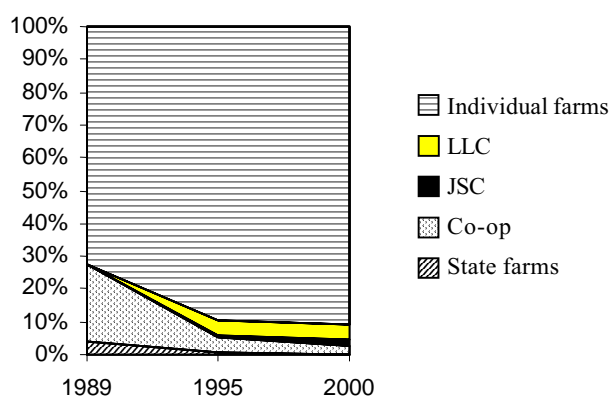
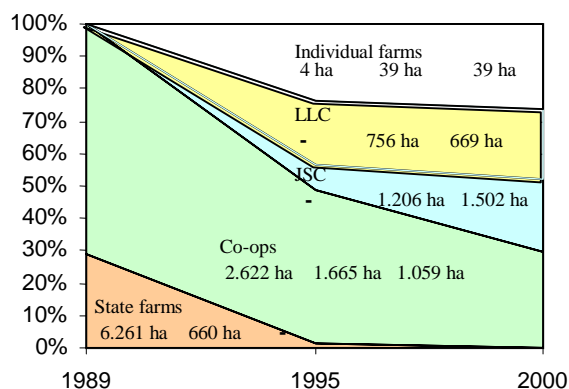Figure 2. The farm structure in the Czech Republic

Figure 3. The farm structure according to the agricultural land cultivated in the CR

Note: Figure 3, the numbers assigned to the individual forms mean the average land cultivated

Source: Agrocensus 1995, 2000, The Report on the state of Czech agriculture (Zpráva o stavu českého zemědělství) 1994–2001, own calculations

ing has not changed to a large extent, partly as a result of the agrarian policy.

As already stated above, the present farm structure reveals an extremely dual character, which has been deepening. This dual structure can be characterised as the following: 75% of all agricultural land is cultivated by only 5% of agricultural farms (mainly large corporate farms or agricultural co-operatives, see Figure 2, 3).

It can be stated, that the dual character of Czech agriculture can, to some extent, contribute as a stabilisation factor[8] in a development of the Czech economy at the time when the role of agriculture in the whole economy has diminished. The explanation rests on the fact that rather

small-scale farms are more flexible in farm restructuring and are able to adjust to the market signals (resulting from lower transaction costs), and, on the other hand, large-scale farms are able to stabilise market production in the medium-term perspective. Another advantage of this farm structure is flexibility within which a family labour force can be employed[9].

Some qualitative results

The previous considerations were coupled with the following indicators:

Figure 4. Gross and net farm surplus calculation

Note: Terms stated in this figure are taken over from the Farm Accountancy Data Network Publication issued by Research Institute of Agricultural Economics (2001)

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[8] Moreover, in some papers it was concluded (e.g. Curtiss 2003) that the dual farm structure is more advantageous for farm efficiency due to various aspects of different internal and external co-ordination of individual and corporate farms.

– the efficiency of input used, represented by the share of intermediate consumption in total output
– the net farm income indicator illustrated by Figure 4.

Figure 4 illustrates the value added calculation system based on the individual data.

The share of operating and production expenses in the total internal activities varied from 60 to 65% in all legal forms evaluated, while the most efficient form appeared to be limited liability companies (however, in 2001, this form had results comparable to the co-operatives). During the period between 1999 and 2001, it could be stated that the least efficient form were co-operatives if we com-pare them with joint stock companies which were the most efficient one (Figure 5).

Figure 6 illustrates the development of the net farm sur-plus, which consists of value added and of current sub-sidies (in other words, if related to one hectare, this indicator measures the production intensity). Through-out the whole period, limited liability companies are the only legal form which had positive or zero value of net income. On the other side, looking at this indicator for agricultural co-operatives or joint stock companies, the situation is worse (negative value). However, there is no simple answer to the efficiency of individual legal forms since the limited liability companies were less efficient in
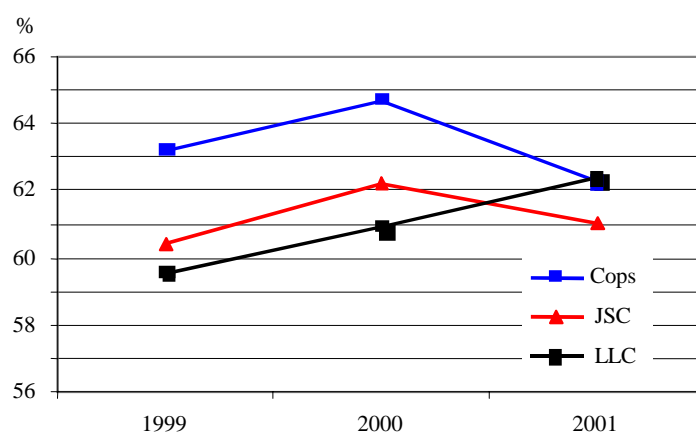

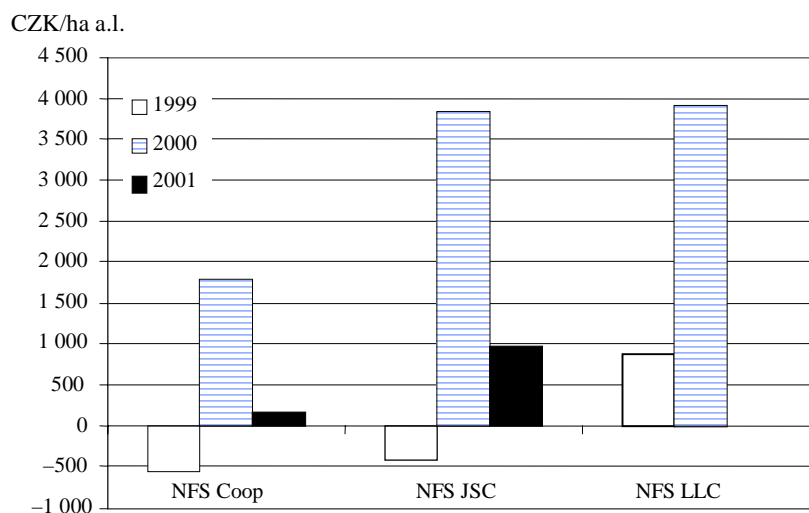Figure 5. Cost efficiency

Source: Own calculations based on FADN

Figure 6. Net farm income according to individual form (CZK/ha a.l.)

Note: NFS = Net Farm Surplus

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[9] A tendency toward increasing of the share of the plural-activity farmers in Western Europe can be illustrated by the Danish farms: in 1965 about 45 thousands were part-time farmers of 150 thousands farmers (30%); but in 1998 where total number of farms has dropped to some 60 thousands, part-time farmers accounted for 37 thousands (62%).

In the Czech Republic, the research dealing, among other things, with the farm pluriactivity was done by Divila (2001) – the share of full-time farmers was 22% but this category of farmers has cultivated nearly 75% of agricultural land. Farmers having a job outside the farm have accounted for 44%, but cultivated only 14% of all agricultural land in this sub-category. Retired farmers have accounted for 29 % of all individual farmers and farmed nearly 12% of agricultural land.

2001. Comparing the indicator stated above between co-operatives and joint stock companies, it can be concluded that co-operatives have half the production intensity of joint stock companies.

To sum up what has been stated above, the choice of a legal form does not have a significant effect on the efficiency, which can, nevertheless be in contrast to the finding of other research studies. However, the differences in methodologies applied have to be kept in mind.

To assess farm efficiency using economic (financial) panel data only can be, to some extent, a bit misleading. Therefore, long-term data series, coupled with qualitative indicators, can be interpreted as more complex and from the broader perspective. This is because factors like management style, human capital, level of transaction costs, co-operation on the input and output markets, etc. have, undoubtedly, impact on the final performance of farms.

CONCLUSION

The farm structure has not been stabilised yet, as was already stated, especially concerning the evolving of co-operatives and joint stock companies. In particular, most joint stock companies were set up in the second half of the 90s and, in fact, this legal form is still being established (in the sample, two thirds of joint stock companies were set up in the last few years). On the contrary, limited liability companies seem to be the most stabilised legal form, and have been following a similar path to rather larger individual farms. Yet, it cannot be proved that their financial situation is better than in other legal forms. One of the important factors was that these companies (limited liability) were obliged to settle the restitution and other debts (which they took over), as were co-operatives or joint stock companies, which, however, mostly did not settle the transformation debts given them in an overall different situation. Also, the agrarian policy has significantly contributed to this (rather unstable development) in the last years. Some of the examples are when some outstanding debts (which were to be paid off to the government) were forgiven; rather unstabilised agrarian policy which has brought about some level of uncertainty for agricultural agents, etc.

Analysing the production structure (the proportion of sales of the particular sub-sectors) in the time series, some divergences can be found. Nearly one half of enterprises analysed (differentiated by legal forms) have changed their production structure. It is supposed that in the next few years, the process of re-structuralisation will continue, in particular, with respect to further harmonisation of current subsidy policy with that of the EU along with other implications; for example, dairy cows might be more profitable to breed in less favourable areas due to better economic conditions (or rather agrarian policy) in these areas (the fact is, that some farms in productive regions have invested in modernisation of milk technology in the transformation period); also the future situation of production of potatoes in sub-mountainous areas is not clear due to lack of profitability for producers currently involved. Similarly, it would be reasonable to expect a raise in the number of beef cows which will be stimulated by the price increase, resulting in a possible commodity surplus (accompanied by the stagnated or maybe even falling demand). The currently unstable sector, influencing significantly the decision-making of the individuals, will be intensified by the conceptual changes in the CAP beginning in 2006.

The ownership structure is still unstable as well. Legal forms which have the most owners and also have cultivated the highest number of hectares – co-operatives and joint stock companies – are probable the structures where the decline in a number of owners is assumed.

The other question, which was not satisfactorily answered yet, is who will be the final receiver of direct payments, weather it will be the operators or land owners. That is the crucial question during the ongoing enlargement of the EU and, in particular, for the CAP. The experiences from abroad have shown (e.g. former East Germany) that the higher income supports (due to the EU support policy) for farmers lead to higher land prices, which mean that the benefit stays in the owners´ pockets instead of the operators. However, coupled direct payments seem to be more justifiable for the time being (considering mainly large-scale corporate farms) since these payments are involved in net value added as a payment for the production factors (labour, land, capital) and, therefore, distribution among recipients will depend on the power of particular stakeholders (interest groups).

Everything stated above will have effects on the further restructuring of Czech agriculture. Not only aspects of the overall transformation process of Czech agrarian sector, but also changes in the CAP (from the historical point of view, significant changes) will be the key factors stimulating further changes. However, it can hardly be supposed that the agricultural economists and analysts will manage to project the "exact picture" of Czech agriculture in years to come. Nevertheless, they should focus their effort on that, as much as possible to be able to predict potential changes – no matter whether they are opportunities or threats.

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