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ECONOMIC RESULTS OF AGRICULTURAL ENTERPRISES IN 2010

F. Střeleček, D. Kopta, J. Lososová, R. Zdeněk

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Abstract

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The paper analyses the development of economic measures on a sample of agricultural enterprises in the Czech Republic in 2006–2010. These enterprises were divided according to the share of the land in the LFA. The aim of the paper is to describe current economic state of agricultural enterprises and to define long-term tendencies of the profit/loss and of factors that can influence it. Compared to 2009, the situation of agricultural enterprises improved in 2010, the majority of enterprises reached a profit, however the profit was not at the same level as in 2007 and 2008. Primarily, total production after its considerable decline in 2009 increased only slightly and reached a level of 2006 in the average enterprise. The labour productivity increased due to a reduction of the number of workers. Decreasing the number of workers is a long term trend as well as increasing of financial support in agriculture. However, the growth rate of support is slowing; the non-LFA support has been decreased in last two years. The increasing share of revenues from crop production and reducing the share of revenue from livestock production is also a long-term tendency.

profit/loss, profit rate, labour productivity, subsidies, LFA, NON-LFA

According to the Czech Statistical Office, agricultural profit amounted to CZK 7.7 milliard in 2010, that means an increase of 271 % compared to 2009. The share of agriculture in gross value added increased from 1.66% in 2009 to 1.76 %. Output of the agricultural sector expressed at current basic prices amounted to 102674 million, of which 56954 million CZK counted for crop production and 40958 million CZK was livestock production. The rest consisted of agricultural services (2708 million CZK) and non-agricultural secondary activities (2056 million CZK).

An increase of crop production occurred despite a decline in the harvest of majority of commodities due to a significant increase in cereal prices. Total livestock production was lower in 2010 compared to the previous year due to a decline in production of all commodities, except the milk for which there was a price increase.

The estimated total volume of subsidies on production in 2010 amounted to 839 million, of which 65.4 million CZK counted for crop production and 773.6 million CZK was livestock production; compared to the total volume of subsidies on production in 2009 that was 2145.8 million (MoA 2011).

In 2010, crop production counted for 55.5 % of the agricultural sector production in current basic prices, with the greatest share of cereals (43.2 %) and industrial crops (23.8 %). Livestock production represented 40 % of the agricultural sector output in current .basic prices with the most significant share of milk production (45 %) and breeding pigs (22 %). Intermediate consumption is involved in the production of the agricultural sector with 75 %, of which the greatest share accounted for the fodder (36.8 %). Agricultural producer prices in total for the year 2010 were higher by 5.4 % compared to 2009. Prices of crop production were increased by 6.3% after last year's sharp decline; the prices of animal products increased by 15.8 %. The price index of goods and supply services to agriculture decreased by 1.8 % in 2010 (CSO 2011).

MATERIALS AND METHODS

The paper analyses the agricultural development of economic and production measures on a sample of agricultural enterprises in the Czech Republic. Sample enterprises were divided according to the share of the LFA land. The outputs are the results of the survey of the sample farms, classified into three groups according to the share of agricultural land in the LFA in the total utilized agricultural land. Group at the LFA is a farm managing more than 50 % of agricultural land included in the LFA. Group marked as the NON-LFA consists of farms with the acreage in the LFA of less than 5 %; other enterprises are labeled as "intermediate area".

Up to date development in a timeline is assessed by economic and statistic methods, primarily by financial analysis ratios. Data of 2006–2010 were used. The sample included agricultural enterprises with bookkeeping that means that the majority of enterprises were legal entities. The data consisted of copies of the following financial statements – balance sheet as of 31 December; Income statement ended 31 December; Crop production annual summary and Statement of areas under crops as of 31 May. The data are followed by a questionnaire that includes other production and management information.

For the purposes of comparative analysis various methods of classification of agricultural enterprises were applied, for example according to the type of production orientation, according to the FADN, based on the economic category of the standard gross margin. The standard gross margin determines the economic gain of a production unit of plant and animal production (Divila-Sokol, 1999). Other classification types are chosen according to agricultural production areas or according to legal form of business (Grznár-Szabo, 2008). Riveiro *et al.* (2008) in their study developed a procedure to characterize and group farms into different types according to the following basic variables: land uses, size classes and production systems. In this paper, the classification according to the share of land situated in the LFA was applied. Štolbová (2007), Štolbová *et al.* (2008); Štolbová-Hlavsa (2008); Štolbová (2008) dealt with different conditions of farming in the LFA, criteria of defining LFA and differentiation of rates of the LFA compensatory allowances.

Farmers face an agricultural treadmill whereby short-run gains of increasing yields from the adoption of new technology are reduced in the long-run. As the innovation spreads throughout the industry, output rises and prices fall (Cochrane, 1979). To deal with worsening terms of trade, farmers have look to further intensify and increase yields or expand the land area they farm, resulting in fewer, larger farms with the marginalisation and exit of smaller, less capitalised units. High levels of direct payments dampen pressures for restructuring rather than stimulating improvements in productivity. Farms in the most marginal areas benefited relatively little from the switch to more direct forms of farm support and their continued existence depends on farmers accepting returns below their opportunity costs for own land and labour (Iraizoz *et al.*, 2007).

Forstner and Isermeyer (1998) dealt with the problems of the farms in eastern Germany. The reform of the Common Agricultural Policy in 1992 has had a marked impact on the farm structure which emerged and on the profitability of the farms. Structural development is going to be heavily influenced by the general framework created by agricultural policy. Miklovičová and Gurčík (2009) dealt with the profit or loss creation analysis and with the added value analysis, which is an important factor by profit creation in the Slovak farms. Kopta (2009) said that agricultural holdings are in danger due to both the long-term negative profitability and by the steep fluctuation of the profit/loss followed by the negative cash flow from operations and financial insolvency. The permanently low or negative profitability affects especially agricultural holdings in the mountain and sub-mountain regions. The profit/loss of such holdings was negative but without major fluctuations. The main danger resulted from the inability to renew the long-term assets. Problems with long-term negative profitability were best identified by the owner indices.

Donaldson *et al.* (1995), Beard and Swinbank (2001), Benjamin *et al.* (2006), Latruffe and Davidova (2007) studied the problems of CAP, direct payments and their impact on farmers in the EU. Offermann *et al.* (2009) states that direct payments play an important role in the financial viability of organic farms in both Western and Eastern European countries.

In recent decades, traditional farming systems in many European regions have been replaced by modern and intensive production systems with associated negative impacts on the environment (Berger *et al.*, 2006). In addition, the number of farms in Europe has been declining continuously (Glauben *et al.*, 2006; Breustedt and Glauben, 2007). Farm exits accelerate the growth of the remaining farms by redistribution of production factors. The declining number of farms not only has consequences for the agricultural sector but also for rural areas as a whole (Zimmermann *et al.*, 2009). The loss of farms may lead to a depopulation of the countryside, which in turn affects the demand for services and the infrastructure of local communities (Ballas *et al.*, 2006; Piorr *et al.*, 2009).

The direct payment system of the Common Agricultural Policy (CAP) provides income transfers to European farmers. Recently, several countries including England and Sweden have advocated the elimination of direct payments after 2013. The extent to which an elimination of direct payments would affect the land use dynamics in Europe including impacts on structural change and the

environment deal with Uthes *et al.* (2011) (Acs *et al.*, 2010; Offermann *et al,.* 2009).

The majority of the monitored analytical indicators can be used to substantiate the falsity to the claim that if the CAP subsidies were no longer paid, it would not threaten the competitive position of Czech agriculture. Quite the opposite, the given measures would affect the other Member States to a far greater degree. The set of the monitored indicators leads to the conclusion that in the majority of the countries in the comparison, stopping subsidies would lead to a fall in economic results, i.e. a loss (Bašek, Kraus, 2011). Brožová (2011) says that the results of her analysis illustrate a better economic performance of organically farming enterprises. The role of subsidies is crucial and their range is significantly wider for the organic farmers than for the conventional farmers.

RESULTS AND DISCUSSION

1. Sample characteristics

In 2010, 98 agricultural enterprises took part in the survey. There were 59 farms in the LFA; 24 in the NON-LFA and 15 in the intermediate area. The average agriculture holding in the LFA farms at an altitude of 530 m compared to 317 m above sea level in the NON-LFA. Average area is about 1909 ha in the NON-LFA and approximately 1 599 ha in the LFA. The average share of arable land is 74 %; 64 % in the LFA, 78 % in the intermediate area and 93 % in the NON-LFA. Compared to 2006, the only significant change occurred in the LFA, where there was a reduction of arable land from 66.7 % to 63.9 %.

Production volume in average agricultural holding increased by 5 % in 2010 compared to 2009. The production of the LFA enterprises was equal to 71 % of NON-LFA enterprises. Similarly, agriculture efficiency, counted as the ratio of revenues per hectare of arable land, of the LFA farms reached 85 % of the NON-LFA enterprises. Lower production efficiency is related mainly to extensive farming characterised by lower inputs and often lower outputs compared to intensive farming. In 2010, production efficiency increased by 5 % compared to 2009; it slightly declined to 99 % in the NON-LFA areas and increased to 108 % in the LFA areas (Tab. I).

2 Development of production structure of an average agricultural enterprise

The same trends as stated by the CSO (decrease of production, sales) appeared in the sample of agricultural enterprises. The volume of sales of agricultural production of the average enterprise has declined by almost 7 million CZK since 2005 (this represents a reduction of operating income by approximately 16 %). This decrease was mainly due to the reduction of animal production.

Milk is the most important commodity of animal production. In 2005, the sales of milk represented approximately 56 % of incomes from agricultural production in the LFA. By 2010, this share decreased by 3 percentage points. The volume of sales decreased from 18.8 to 16.7 million CZK. The reduction was caused by both a decrease of exercise prices (from 8.28 to 7.46 CZK/liter) and by reducing the number of animals in particular. Production base size decreased from 400 to 351 dairy cows. Even more a significant reduction in the number of dairy cows appeared in the NON-LFA area. Number of dairy cows fell from 363 to 268 pieces. While in 2005 sales of milk accounted for 34 % of revenues from agricultural production, in 2010 it was only 24 % in this area.

The share of beef in total sales of agricultural production reached 5.93 % in the LFA and 2.33 % in NON-LFA areas in 2010. This commodity's production was reduced as well. The volume of production realized in an average holding of the

I: *Comparison of production volume of average LFA and NON-LFA farms*

Number of enterprises	2006	2007	2008	2009	2010
NON-LFA	34	33	32	26	24
transition area	18	17	11	15	15
LFA	75	65	73	71	59
Total	127	115	116	112	98
Production (thous. CZK)	**2006**	**2007**	**2008**	**2009**	**2010**
NON-LFA	100 271	115 481	123 533	95 931	92 036
transition area	95 294	118 676	142 138	115 617	113 767
LFA	63 844	72 567	73 489	59 552	65 582
Total	78 054	91 698	93 804	75 506	79 436
Production (CZK/ha)	**2006**	**2007**	**2008**	**2009**	**2010**
NON-LFA	49 472	55 962	59 445	48 617	48 217
transition area	46 397	52 161	59 041	49 684	51 948
LFA	41 340	45 827	46 181	37 930	41 005
Total	44 711	50 286	52 027	42 779	44 992

Source: Monitoring of agricultural enterprises

LFA area decreased from 65.3 tons to 44.7 tons. In NON-LFA, there was even more significant reduction. An output of current production (30.4 tons) stands for approximately a half of the value of 2005. In monetary terms, it reflects a decrease from 2 712 thousand to 2 090 thousand CZK in the LFA. In the NON-LFA the production decreased from 2 175 to 1 279 thousand CZK. This reduction was due (as there were stagnant prices and only a slight increase in yield) to a decrease the size of the production base.

The most notable decline appeared for the pork production. In NON-LFA areas, the realized production decreased from 7 345 thousand CZK to 2 632 thousand CZK; in the LFA it decreased from 2 883 thousand to 1 553 thousand CZK. Regarding pork, reducing the size of the production base (reduction of feeding days from 137 218 to 85 962 in the LFA and 339 481 to 132 842 in the NON-LFA) showed a decrease in purchase price (from 32.12 to 27.92 CZK/kg). In NON-LFA areas this combination of factors led to a reduction in the proportion of pork meat in total sales from 15.43 % to 4.82 %. In LFA, the share of sales fell to 5.16 %.

The plant production reflects a change in the structure of production. The percentage of LFA areas of arable land decreased from 68.1 % to 64.1 % in 2010 compared to 2005, while in NON-LFA arable land increased from 91.6 % to 93.5 %. In NON-LFA areas were sown by oilseed as well as corn for grain by 2009. The most significant changes in the structure of production is an almost complete disappearance of the potato crop rotation.

Wheat is the basic crop in plant production. The share of commodities in total incomes from agricultural production varied between 7.55 % and 14.0 % in the LFA and between 18.25 % and 29.7 % in the NON-LFA. This high variability is due to variations in the yields (between 4.45 to 6.01 tonnes per hectare) and varying exercise prices. A tonne of wheat was purchased from 2 457 CZK (in 2005) to 4 703 CZK (in 2007). The area sown by this commodity in LFA areas decreases slightly (from 211 to 191 hectares) in NON-LFA, it grows from 586 to 594 hectares.

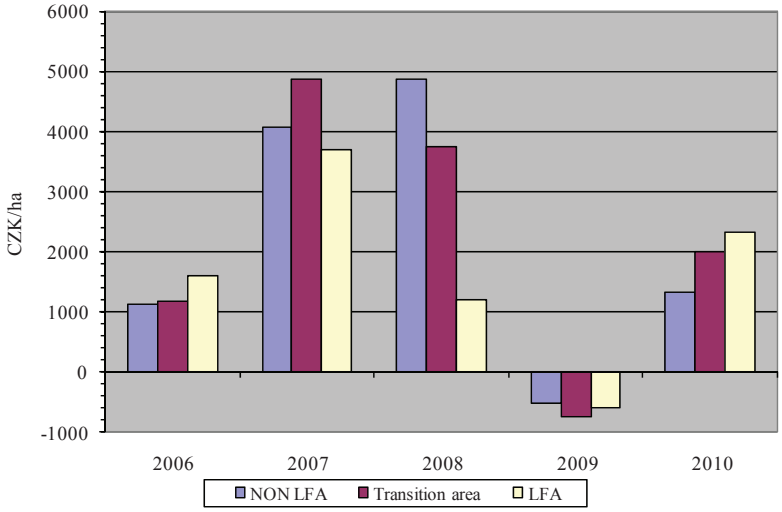
There is a similar situation in the production of barley. The share of this commodity ranges between 3 and 8 % in the LFA and 8–18 % in the NON-LFA areas. In both areas, the share of cultivated area has been slightly decreasing.

In contrast, the area of cultivated oilseed rape has been increasing (from 224 to 246 hectares in the NON-LFA to 139 to 144 in the LFA). This commodity had the highest volatility of exercise prices (minimum 5,485 CZK/tonne in 2005, maximum 8 996 CZK per tonne in 2008) and yields.

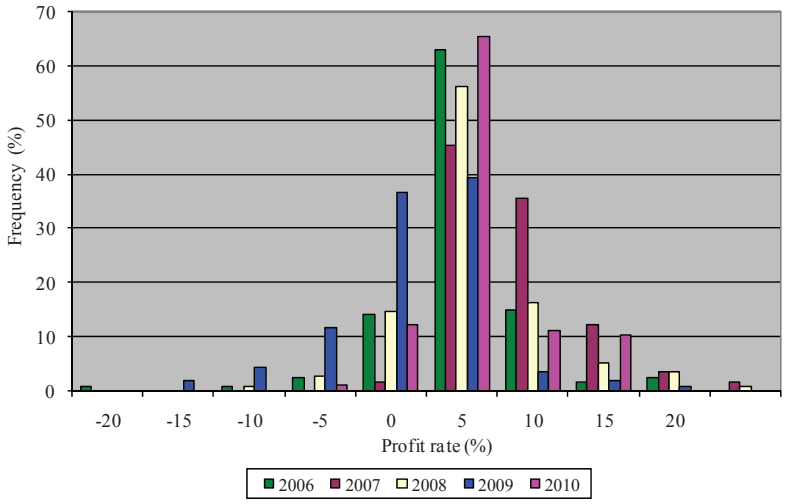
3. Development of the profit/loss of average agricultural holding

Profit/loss per an accounting period is a summary indicator of enterprises successfulness. Within the analysis in order to keep data comparable, the profit/loss before taxation calculated per hectare of farm land was analysed (Fig. 1). The profit/loss of this form expresses both the efficiency and economy of the production. It is significantly influence by costs and conditions of converting into money.

After considerable profit decline in 2009, the net profit increased significantly in 2010 in all areas, although the average rate of profit of the enterprise was 2.7 % only. As shown in Figure 1, the average farm income was the largest in 2007 since 2006, the most noticeable difference in profit between the LFA and NON-LFA occurred in 2008 there was a significant loss of profit of similar values in all areas in 2009. The year 2010 represented an increase in profit compared to the previous year with the highest value in the LFA – there was an increase by 2 936 CZK/ha of agricultural land; by 2 747 CZK/ha



1: *Development of the profit/loss in LFA and non-LFA*
Source: Monitoring of agricultural enterprises, own calculations



2: *Distributions of enterprises according to the profit rate*
Source: Monitoring of agricultural enterprises, own calculations

in the transitional area and by 1,857 CZK/ha in the NON-LFA.

Assessment of management efficiency is an important part of economic results evaluation. It is based on assessment of frequency distribution of enterprises according to their profit/loss. Flat distribution of enterprises frequency according to the profit/loss is connected with huge reserves in the enterprise management within real economic conditions. On the other hand, distribution with kurtosis and low variability is connected with exhausted reserves and the change may be caused by quality conditions only (Střeleček *et al.*, 2011).

Comparing the distribution of enterprises by size of income revealed the largest number of enterprises with a loss in 2009 since 2006 – it was 54 % of enterprises. In 2006 and 2008, 18 % of businesses were unprofitable. Extremely favourable climatic and economic conditions in 2007 meant a decrease of share of enterprises in the loss to 2 %. The share of loss-making enterprises was 13 % in 2010. The most favourable year for the entire period appeared in 2007 when 47 % of enterprises made a profit of more than 5 million CZK. It was approximately 30 % between 2008 and 2010 20 % in 2006 and 6 % only in 2009. Common decrease or increase of economic outcome highlights the growing influence of external factors, especially prices and climatic conditions.

The rate of profit is the most common indicator of profitability. This indicator measures the total earnings assets. In terms of business development, only positive values are relevant. Negative profit margin is always unsatisfactory. The profit rate analysis showed that the average profit enterprise in the NON-LFA and even in LFA areas was unable to provide adequate conditions for reproduction until 2007. If we accept the lowest acceptable value

II: *Development of profit per hectare of farmland, per worker and profit rates*

Profit/loss before tax in CZK/ha	**2006**	**2007**	**2008**	**2009**	**2010**
NON LFA	1 116	4 068	4 875	–533	1 325
Transition area	1 167	4 873	3 748	–747	1 999
LFA	1 610	3 697	1 204	–609	2 326
Total	1 383	4 034	2 694	–614	1 997
Profit/worker in CZK	**2006**	**2007**	**2008**	**2009**	**2010**
NON LFA	23 972	88 383	12 3791	–14 046	38 604
Transition area	25 633	122 786	91 744	–19 324	53 925
LFA	39 958	95 725	32 672	–18 214	74 325
Total	32 070	97 869	70 577	–17 273	60 286
Profit rate in %	**2006**	**2007**	**2008**	**2009**	**2010**
NON LFA	1.6	5.6	6.4	–0.8	1.7
Transition area	1.8	7.0	4.9	–1.0	2.6
LFA	2.5	5.4	1.7	–0.9	3.3
Total	2.1	5.8	3.7	–0.9	2.7

Source: Monitoring of agricultural enterprises

profit rate of 4 %, then it is clear that since 2000 the average enterprise, both in the NON-LFA and the LFA approached the minimum required rate of profit in 2004 and 2007 only. In 2010, the highest rate of profit was reached by enterprises farming in LFA (3.3 %); in the transitional area it was 2.6 % and in NON-LFA only 1.7 %. Number of enterprises with more than 4 % profit rate was highest in 2007 (64 %), in 2006, 2008 and 2010 were around 30 % and the lowest number of enterprises with a 4 % rate of profit appeared in 2009 – 11 % enterprises only (Fig. 2).

4 Activity ratios of an average agricultural enterprise

Ratios of the average farm activity are expressed both as business opportunities and as utilization of production capacity of the enterprise. Both of these factors have a significant impact on enterprise earnings. Increasing the volume of production of profitable production has to be related to proportional profit growth, where the constant of proportionality is the profitability of production. Increased utilization of production capacity leads to a decrease in depreciation and other fixed cost items. This process results in a decrease of total cost of production, which progressively accelerates profit growth. In contrast, a decreased performance usually leads to constant cost, which is a condition of higher cost of production (Střeleček *et al.*, 2007).

The volume of the average farm income in the LFA as well as in the NON-LFA was a growing trend until 2008. In 2009, there was a significant decline. The year 2010 meant a significant change compared to the previous year, revenues grew by 10 % only in the LFA, the NON-LFA decreased by 4 % and the transition area decreased by 1.6 %. Since 2006, the average growth was 0.7 % in the LFA and 4.5 % in the transitional area. The NON-LFA decreased by 2 % per year on average.

In 2010, total assets in the average enterprise in the LFA increased by 7 % and by 4 % in the NON-LFA compared to the previous year. The transition area fell by 6 % compared to the previous year. Since 2006, assets grow by of 3.7 % per year in the LFA, by 6 % in the transitional area and by 1 % in NON-LFA on average (Fig. 3).

Turnover rate of assets is lower in enterprises farming in the LFA compared to farming enterprises in the NON-LFA. The lower volume of revenues with lower turnover rate are important factors of worsened economic situation of enterprises in the LFA.

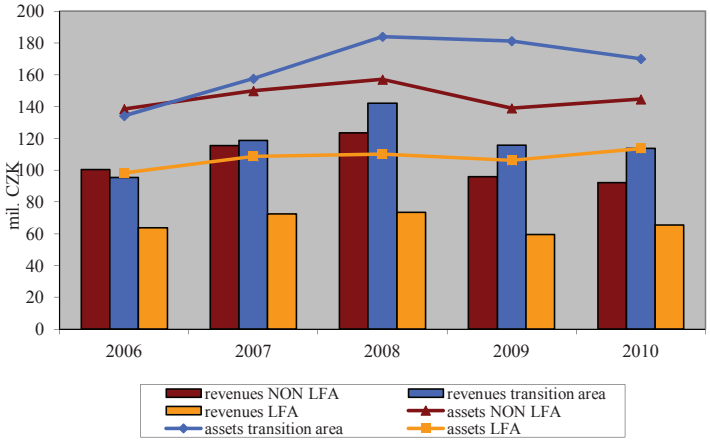
In 2009, labour productivity as well as the average number of employees decreased due to the significant decline in revenues. Despite the fact that in 2010 there was a decline in production in the NON-LFA and in transitional area, an increased labour productivity occurred due to workforce reduction in all areas – by 9.6 % in NON-LFA and by 9.1 % in the transitional area; in LFA the labour productivity increased by 14.6 % compared to the previous year. Average growth rate of labour productivity ranged from 6 % in the LFA to 7 % in the NON-LFA and 8 % in the transitional area per year. In 2010, there was a relative saving of workers due to labour productivity. The saving was equal to 6.3 workers in the NON-LFA and 7.4 in the LFA and transitional area.

Average number of workers calculated per 100 ha of agricultural land has been decreasing. It ranges from 3.2 workers in the LFA to 3.4 in the NON-LFA and 3.7 in the transitional area.

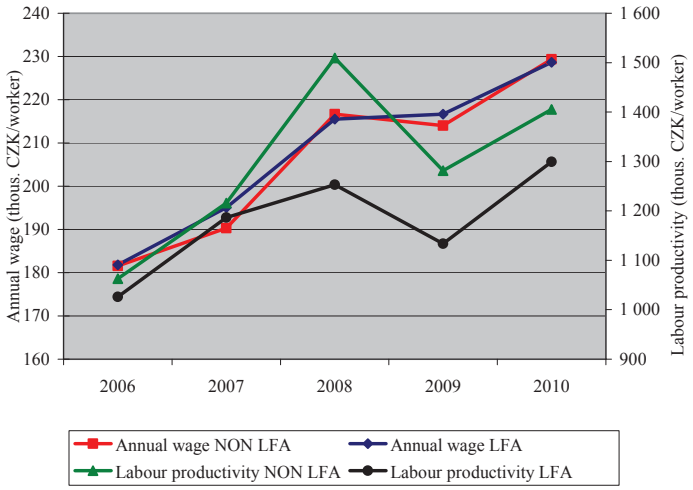
The average annual wage per worker in the period was significantly different between the areas. Average annual growth rate of wages per worker amounted to 5.9 % in the LFA; 6.5 % in the transitional area and 6 % in the NON-LFA (Fig. 4).

5. Technical development and cost/revenue ratio

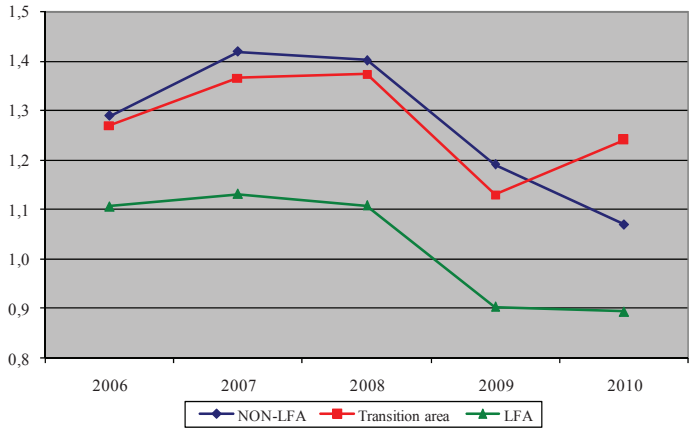
Renovation and modernization of buildings and technologies with increasing concentration of farms has resulted in growth of fixed assets. The volume of fixed assets average farm in the NON-LFA grew by



3: *Development of revenues and total assets*
Source: Monitoring of agricultural enterprises, own calculations



4: *Development of labour productivity and average annual wages*
Source: Monitoring of agricultural enterprises, own calculations



5: *Development of fund efficiency*
Source: Monitoring of agricultural enterprises, own calculations

2.5 % in average; by 5.1 % in the transitional area and by 6.2 % in the LFA per year.

The growth rate of technical equipment of work is faster compared to the dynamics of growth of fixed assets – there was an average growth rate of 12 % in NON-LFA and the LFA and 9 % in the transitional area. The disintegration index of technical equipment of work showed that this index is the ratio of fixed assets index and the index of the average registered number of employees. If the index of technical equipment is growing faster than labour index of tangible fixed assets the average registered number of employees will necessarily decline.

Growth of fund efficiency led to relative saving of enterprise assets, which is associated with a relative saving of depreciation and other costs. Increasing the rate of turnover of current assets leads to a reduction in the cost of storage and material handling. Relative savings assets associated with its higher interest rates.

Fund efficiency reflects essentially the same trends that affect the volume of revenues. There had been any significant development of this indicator the NON-LFA up only the annual oscillation. The major change occurred in 2009, a decrease by 15–18 %. In 2010, a decrease in fund efficiency by 10 % occurred in the NON-LFA; and by 1 % in LFA. To the contrary the transition area reported an increase by 10 % compared to 2009. Decrease of the fund efficiency in 2010 is connected with a relative overrun of tangible assets for the average enterprise by 8 710 thousand CZK in the NON-LFA, by 771 thousand CZK per enterprise in the LFA. Fund efficiency increase in the transitional area represents a saving of fixed assets by 8 928 thousand CZK per enterprise in the transitional area.

Evaluation of the type of technical development, i.e. the relationship between tangible assets and income is given sufficient attention neither in economic theory nor in practice. Assessment of investment efficiency is usually done before the implementation of investment project, followed

the other in several years after the investment operations. The aim of this assessment is to evaluate the acquisition of investments. The aim of assessing the type of technical development is to assess the proportional volume of development between the development of tangible fixed assets, the average registered number of employees and total earnings of the farm (Střeleček *et al.*, 2011).

In 2010, the average farm realized demanding type of technical development in the LFA and the NON-LFA, which was associated with an increase in labour productivity and relative saving of the number of workers and labour costs. At the same time, the average farm realized the relative overrun of tangible assets and the relative overrun of depreciation. There was a relative savings in personnel costs of 2 269 thousand CZK for the average farm in the LFA and 1977 thousand CZK in the NON-LFA. The relative overrun of fixed assets resulted in a relative overrun of depreciation by 88 thousand CZK in the LFA and by 965 thousand in the NON-LFA. This type of technical development can be effective if the absolute value of relative personal cost savings will be greater than the relative overrun of depreciation.

In the transition area, a fund saving type of technical development was implemented in 2010 combined with rising labour productivity, the relative savings in workers and personnel costs. A relative savings of the fixed assets and depreciation was also realized. This type of technical development is economically very advantageous for the enterprise.

One of the frequent questions related to the assessment of production economy discusses if increasing volume of production will be economically efficient. Basic knowledge of the issue will be provided by the cost efficiency degrees, which express qualitatively different trends depending on the volume of production and costs. These trends affect fundamental changes in the dynamics of the level of profitability, the volume of profit (loss) and the volume of production. Degrees of cost efficiency can be used to evaluate the effectiveness of development costs for both the entire enterprise, its organizational units as well as for individual sectors (Střeleček *et al.*, 2007).

The development of cost/revenue ratio reported a slightly downward tendency with the lowest average cost/revenues ratio realized by an average farm in all areas in 2007. In 2010, an average farm in the NON-LFA realized increasing cost efficiency connected with reduced loss of reduction in production resulting from the relative cost saving. Due to cost/revenue ratio reduction the relative cost savings of 3 536 thousand CZK occurred.

Average farm in the transitional area as well as the LFA realized an increasing degree of cost efficiency in 2010. A farm performs an increase of a loss from extended production and an increase of profit from a relative cost saving. Production cost decreases and the profit rate increases.

6. Debt ratio and liquidity

Debt ratios assess long-term financial structure of an enterprise indicating the level of the risk taken by an enterprise within a given structure of outer and inner financial sources as well as the ability of an enterprise to increase its profit by using liabilities. The debt assessment uses several indicators derived from the balance sheet or income statement. Total debt ratio is the share of external capital in total assets. Generally, the larger the value is, the higher will be the debt of the company and the greater the risk for both creditors and shareholders. However, it is necessary to assess the overall profitability that an enterprise achieves and the total capital employed in connection with the structure of liabilities.

Development of the average farm debt ratio in all areas is of a slightly decreasing trend (0.1 percentage points per year). In 2010, the value of total debt stayed at 35 % in the NON-LFA, as well as in 2009. In the transition area, 37.1 % appeared (decrease by 13 percentage points) and 38. 3% in the LFA, which is a decrease of 5 percentage points compared to 2009.

Liquidity indicators reflect enterprise's abilities to pay its obligations promptly in the nearest future. Condition of the solvency is the binding a part of the property in the form of money. Fully liquid enterprise has a sufficient amount of cash to pay its obligations. If not, is only partially solvent or insolvent. Basic indicators are derived from current assets. The higher is the short-term liquidity, the more favourable should be maintaining the solvency of the company. This indicator should range between 2 to 2.5. Too high liquidity indicates high values and unproductive binding of cash and disruption of operating cycle of the enterprise.

The value of short-term liquidity averaged 3.5 for the NON-LFA farm in 2010 that is a decrease compared to 2009. Since 2006 there has been a slight decrease of this indicator. In the transition area this indicator was equal to 3.34. The LFA's value was 3.86 that is an increase compared to the previous year, although multi-annual trend also showed a slight decline.

Short time of the operation cycle is a disadvantage of short-term liquidity as the stock has to change into available cash. The acid test excluded inventory from current assets. The approximate value of 1 is considered to be satisfactory. The low value of this indicator means that the company has to raise its available cash.

Also, acid value test has had a slightly decreasing trend in recent years and varied within the range 1 to 2. In 2010, there was a decrease in this indicator in NON LFA by 14 percentage points compared to 2009. In the transition area and in the LFA, this indicator increased by 7 percentage points and 17 pp.

7. Development of financial health

The methodology designed for the evaluation of applicants under the Rural Development

III: *Values of the average enterprise*

Indicator	2006	2007	2008	2009	2010
Sample size	127	115	116	112	98
ROA (%)	2.27	6.31	4.63	–0.51	2.69
Long term profitability (%)	17.69	21.14	24.11	23.21	26.62
Value added/input (%)	39.29	48	41.09	29.39	40.23
Profitability of output, from cash flow (%)	18.18	24.05	21.14	15.88	21.91
Total indebtedness (%)	36.88	35.64	36.56	37.61	36.11
Interest coverage	2.93	7.52	5.17	–0.55	3.37
Payback of debt, from cash flow (years)	4.30	2.93	3.1	4.89	3.88
Supplies covered by net working capital	1.22	1.29	1.21	1.13	1.2
Total liquidity	3.01	3.23	3.09	2.95	3.02
Number of points	30	31	31	26	30

Source: Monitoring of agricultural enterprises, own calculations

IV: *Classification of farms according to a number of points*

Category	Number of points	Number of enterprises (proportion in %)		
		2008	2009	2010
A	25.01–31	72 (71.3 %)	63 (67%)	62 (63.3 %)
B	17.01–25	26 (25.7 %)	26 (27.7%)	27 (27.6 %)
C	15.01–17	1 (1%)	2 (2.1%)	3 (3.1%)
D	12.51–15	1 (1%)	2 (2.1%)	5 (5.1%)
E	9–12.5	1 (1%)	1 (1.1%)	1 (1%)

Source: Monitoring of agricultural enterprises, own calculations

Programme – 2011 Methodology (SAIF 2011) was used. Tab. III showed the values for each part in the development of financial health. Value indicators ROA and interest coverage amounted positive values with the exception of 2009. Making profit is reflected in the indicators of long-term profitability – accumulated profits from previous periods. The total indebtedness of the average company in the period oscillated in the range of 36 to 38%. The indicators covering of inventory with net working capital reserves and total liquidity were of favourable values in all years. The average farm stood at 30 points of the financial health of the 31 maximum possible in 2010.

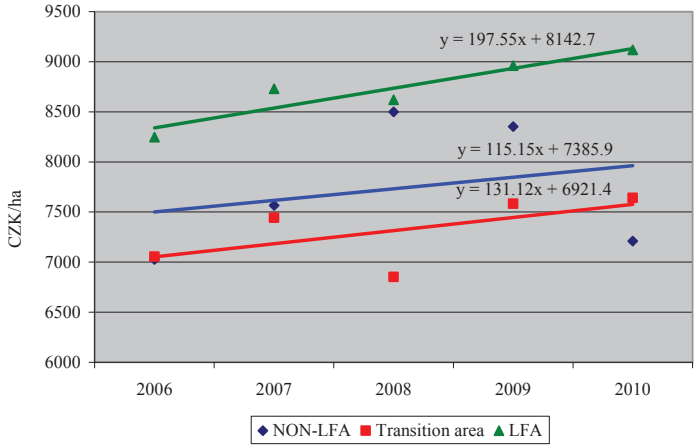
Methodology for calculation assesses the financial health of the last three, respectively two accounting years closed. The resulting value for assessing the financial health is a simple arithmetic average of scores for the last three, respectively two years. For this purpose, the financial health of 85 farms was examined for years 2008 to 2010. Financially healthy businesses can be classified into categories A, B or C, i.e. farms which have reached more than 15 points. This condition was met by 95.3% of enterprises (Tab. IV).

8. Impact of subsidies on the profit/loss

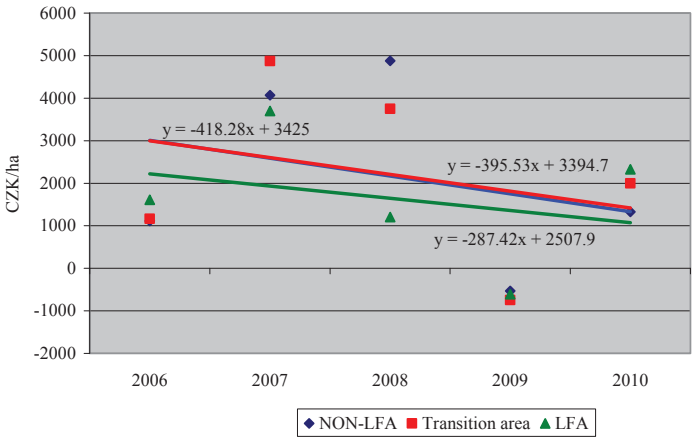
Since 2004, the development of subsidies has showed a significant trend in reducing the difference in the total subsidies paid per hectare of agricultural land between enterprises in the LFA and in the NON-LFA. While in the years 2004–2005 the LFA subsidies were higher approximately by 30 %, the difference was around 15 % between 2006 and 2007 and only 2 % and 7 % in 2008 to 2009. This trend was observed in the last year interrupted due to a considerable decrease in subsidies converted per hectare of agricultural land – by 14 % in the NON-LFA and a slight increase in funding in the transitional area (1 %) and the LFA (2 %). The difference between received subsidies in the LFA and NON-LFA increased again to 30 % in favour of the LFA in 2010.

We can see a slightly increasing trend in the development of subsidies converted per hectare of agricultural land since 2006. In 2010, an average farm in the NON-LFA received a subsidy of 7 210 CZK/ha of agricultural land, which is by 2.6 % more than in 2006. In the transition area, an average enterprise received 7 640 CZK/ha, i.e. an increase of 8.3 % compared to 2006 and in the LFA it was 9 119 CZK/ha, which is by 10.6 % more than in 2006. Average growth rate of subsidies ranged between 1 % in the NON-LFA to 2 % in a transitional area and 3 % in the LFA per year in 2006–2010.

Fig. 6 revealed an increasing tendency of subsidies in the monitored period characterised by regression equations: $y = 115.15x + 7\,385.9$ in the NON-LFA, $y = 131.12x + 6\,921.4$ in transition area and $y = 197.55x + 8\,142.7$ in the LFA. Profit during the period had a slightly decreasing trend, mainly due to significant loss of profit in 2009. In 2010,



6: *Development of subsidies since 2006*
Source: Monitoring of agricultural enterprises, own calculations



7: *Trends in profit since 2006*
Source: Monitoring of agricultural enterprises, own calculations

while net profit was positive, but far from the profit of 2007 and 2008, so the profit trend in the period has been falling in all areas (Fig. 7). It revealed that even relatively high subsidies in agriculture cannot eliminate the profit declines that occur due to unfavourable climatic conditions and production as those in 2009.

Comparing the structure of subsidies converted per hectare of agricultural land revealed that the SAPS payments were almost identical, which is given by the nature of payments. Minimal differences may be due to inaccuracies or changes in agricultural land area.

Regarding the TOP-UP in the years 2004–2007, these payments rather favoured the NON-LFA farms (i.e. those with a high degree of arable land) as the authors pointed out in several previous studies (Střeleček, Lososová, 2005; Střeleček *et al.*, 2008). In the last two years, TOP-UP in the LFA were significantly higher. However, this difference in total subsidies is not significant, as these payments were introduced as a partial settlement of the differences in direct payments for new and old EU states and the amount converted per hectare of agricultural land has declined by half of the year 2006.

The most significant differences are of course in compensation payments to the LFA, the amount is insignificant in the NON-LFA; however it reached the amount of 445 CZK/ha of agricultural land in a transitional area and 1 279 CZK/ha in the LFA in 2010. A significant difference occurred in the agri-environmental measures, which rose by 7 % in the transitional area and by 6 % in the LFA compared to the previous year, while it decreased by 13 % in the LFA. Other subsidies which include separate sugar payment, a subsidy under the "Principles" (Principles laying down the conditions for granting subsidies for the maintenance and utilization of genetic resources for food and agriculture), payments to dairy cows, and others are significantly higher in the NON-LFA.

If we abstract subsidies from total enterprise revenue the average farm was in loss in every area. The loss would averaged 7.5 million CZK per enterprise at best in 2007 i.e. the loss of 4 000 CZK/ha of agricultural land. The worst loss would occur in 2009, when this loss was more than CZK 16

V: *Structure of the NON-LFA subsidies in CZK/ha of agricultural land*

Subsidies	2006	2007	2008	2009	2010	2010/2009
Total	7 027	7 567	8 499	8 353	7 210	0,86
SAPS	2 521	2 779	3 056	3 683	4 036	1,10
TOP-UP	2 284	2 407	1 779	1 554	851	0,55
LFA	16	7	6	9	10	1,11
AEO	489	496	576	411	358	0,87
PGRLF	324	282	242	296	194	0,65
Other	1 393	1 596	2 839	2 401	1 762	0,73

Source: Monitoring of agricultural enterprises

VI: *Structure of subsidies in the transition area in CZK/ha of agricultural land*

Subsidies	2006	2007	2008	2009	2010	2010/2009
Total	7 055	7 443	6 853	7 583	7 640	1,01
SAPS	2 152	2 287	3 032	3 674	4 016	1,09
TOP-UP	2 103	1 973	2 017	1 849	1 136	0,61
LFA	473	530	426	340	445	1,31
AEO	641	643	859	635	676	1,07
PGRLF	137	220	179	262	152	0,58
Other	1 548	1 791	340	822	1 215	1,48

Source: Monitoring of agricultural enterprises

VII: *Structure of subsidies in the LFA in CZK/ha of agricultural land*

Subsidies	2006	2007	2008	2009	2010	2010/2009
Total	8 247	8 729	8 620	8 961	9 119	1,02
SAPS	2 599	2 921	3 085	3 683	4 034	1,10
TOP-UP	2 454	2 530	2 278	2 027	1 299	0,64
LFA	1 277	1 267	1 109	1 189	1 279	1,08
AEO	1 087	1 201	1 085	1 076	1 137	1,06
PGRLF	253	268	233	268	180	0,67
Other	576	542	830	718	1 191	1,66

Source: Monitoring of agricultural enterprises

million for the average enterprise, i.e. more than 9 000 CZK/ha of agricultural land. Profit in such a case would be reached by 0.8 % of enterprises only in 2006, by 7 % of enterprises in 2007, by 6 % in 2008 and by 0.9 % in 2009. In 2010, 3 % of enterprises only would be profitable without subsidies.

CONCLUSION

Since 2004, the majority of economic indicators of farms showed a positive development compared to the years before the accession to the EU. Net profit of the average farm during the period reached its peak in 2007. In 2009, due to the economic crisis in the majority of monitored indicators there was a significant decline; mainly due to largest drop in production since 2003. The year 2010 marked a significant improvement in profit compared to the previous year, although the level of years from 2007 to 2008 was not reached again. While in 2009 54 % of monitored enterprises were in a loss, it was 13 % in 2010.

Since 2006, total production converted per hectare of agricultural land has had a slightly decreasing trend in the NON-LFA. There has been a slight increase in the transitional area. The LFA has been rather constant. The decline of this indicator in 2009 by 18 % in the LFA and in the LFA and by 16 % in the transitional area meant a significant loss of earnings. In 2010, the decline in production has been still slightly increased by 1 %. The LFA increased by 8 % compared to 2009. Decline in production and sales in the period was caused primarily by reducing the production of major commodities, livestock production is the cause of the stagnant prices and only a slight increase in production, especially the decline in size of the production base. The structure of crop production has changed. The share of arable land in the NON-LFA increased while it decreased in the LFA. The rapeseed and grain corn area have decreased both in the LFA and NON-LFA. The LFA cereal area has slightly declined. The most significant change in the structure of production

was an almost complete disappearance of the potato crop rotation.

Profit before taxation in 2010 converted per hectare of utilized agricultural land was higher in the LFA, and amounted to 2 326 CZK/ha of agricultural land 1 999 CZK/ha in the transitional area; and 1 325 CZK/ha of agricultural land in the NON-LFA. In 2009, the share of enterprises with a profit of more than CZK 5 million was 6 % only. In 2010, this indicator was significantly more favourable as the share of enterprises with a profit of more than 5 million CZK rose to 30.6 %.

Average number of workers per 100 ha of agricultural land during the period decreased by 7 % in the NON-LFA and by 5 % in the LFA on average and is associated with increased labour productivity with the exception of 2009, when the decline in production was due to a decline in labour productivity. In 2010, the increase in labour productivity ranged between 10 % in the NON-LFA and 15 % in the LFA compared to the previous year.

Constantly unbalanced conditions of subsidies for agriculture in comparison with the original EU15 states have been a major limiting factor in the competitiveness of agricultural enterprises in the Czech Republic. The growth rate of subsidies slowed down after 2004, a decrease of subsidies occurred in the NON-LFA in the last two years compared to the previous year. In 2010, the share of subsidies in incomes decreased unlike previous years. The share amounted to 15 % in the NON-LFA and transitional area and to 22 % in the LFA.

Developments of the most important economic indicators were similar for enterprises farming in the LFA and outside the LFA with balanced subsidies calculated per hectare of agricultural land. The major difference is represented by the compensatory payment in the LFA and partly by the agro-environment measure payment in the LFA related to different character of farming in the LFA.

During the reporting period, significant shifts of enterprises to the worse, or conversely, better profit/loss highlighted the growing influence of external factors. Economic results of enterprises farming in the LFA due to extensive farming methods were much less affected by extreme changes in external factors, so the indicators in the LFA reported stable trend and swings toward either better or worse results are milder. As evident the removal of subsidies to agriculture would bring the profit for 6 to 7 % of enterprises only in the most favourable period; in case of adverse weather conditions, production would be profitable only in 1% of enterprises.

SUMMARY

The paper analyses the agricultural development of economic and production measures on a sample of agricultural enterprises in the Czech Republic. Sample enterprises were divided according to the share of the LFA land. The outputs are the results of the survey of the sample farms, classified into three groups according to the share of agricultural land in the LFA in the total utilized agricultural land. Group at the LFA is a farm managing more than 50 % of agricultural land included in the LFA. Group marked as the NON LFA consists of farms with the acreage in the LFA of less than 5 %; other enterprises are labelled as "intermediate area". Up to date development in a timeline is assessed by economic and statistic methods, primarily by financial analysis ratios. Data of 2006–2010 were used. The sample included agricultural enterprises with bookkeeping that means that the majority of enterprises were legal entities. The data consisted of copies of the following financial statements – Balance sheet, Income statement, Crop production annual summary and Statement of areas under crops. The data are followed by a questionnaire that includes other production and management information.

Since 2004, the majority of economic indicators of farms showed a positive development compared to the years before the accession to the EU. Net profit of the average farm during the period reached its peak in 2007. In 2009, due to the economic crisis in the majority of monitored indicators there was a significant decline; mainly due to largest drop in production since 2003. The year 2010 marked a significant improvement in profit compared to the previous year, although the level of years from 2007 to 2008 was not reached again.

Decline in production and sales in the period was caused primarily by reducing the production of major commodities, livestock production is the cause of the stagnant prices and only a slight increase in production, especially the decline in size of the production base. The structure of crop production has changed.

Developments of the most important economic indicators were similar for enterprises farming in the LFA and outside the LFA with balanced subsidies calculated per hectare of agricultural land. During the reporting period, significant shifts of enterprises to the worse, or conversely, better profit/loss highlighted the growing influence of external factors.

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Address

Ing. Daniel Kopta, Ph. D., Ing. Jana Lososová, Ing. Radek Zdeněk, Katedra účetnictví a financí, Ekonomická fakulta, Jihočeská univerzita v Českých Budějovicích, Studentská 13, 370 05 České Budějovice, Česká republika, e-mail: kopta@ef.jcu.cz, lososova@ef.jcu.cz, zdenek@ef.jcu.cz