

# Results of agricultural enterprises economy in 2004

## *Výsledky hospodaření zemědělských podniků v roce 2004*

F. ŠTŘELEČEK, J. LOSOSOVÁ, R. ZDENĚK

*University of South Bohemia in České Budějovice, České Budějovice,  
Czech Republic*

**Abstract:** The study has been elaborated on the basis of a continuous analysis of economic results of a selected sample of agricultural enterprises operating in different climatic and productional conditions. Long-term tendencies and their influencing factors are defined on the basis of this analysis. The goal of this study is to evaluate the influence of external conditions on the economy of agricultural enterprises and on their economic results and to analyze the influence of the accession of the Czech Republic to the EU on the change of economic conditions of agricultural enterprises. On the basis of this study, the authors measures which would intensify the influence of agricultural enterprising on the rural development and which would improve the quality of life of rural inhabitants.

**Key words:** production areas, marginal areas, economic result, revenue rate, labor productivity, financial health of enterprise

**Abstrakt:** Příspěvek byl vypracován na základě několikaleté pravidelné analýzy ekonomických výsledků výběrového souboru zemědělských podniků hospodařících v různých výrobně-klimatických podmínkách. Na základě této analýzy jsou definovány dlouhodobé tendence hospodářských výsledků a faktory je ovlivňující. Cílem je zhodnotit vliv vnějších podmínek hospodaření v zemědělských podnicích na výsledky hospodaření a analyzovat vliv vstupu ČR do EU na změnu ekonomických podmínek zemědělských podniků, na základě analýzy navrhopvat opatření, která posílí vliv zemědělského podnikání na rozvoj venkova a kvalitu života venkovského obyvatelstva.

**Klíčová slova:** produkční oblasti, marginální oblasti, hospodářský výsledek, míra zisku, produktivita práce, finanční zdraví podniku

The accession of the Czech Republic to the EU in 2004 was of principal importance for the Czech business environment. The enlargement of common market has positively influenced economic growth of the given region. It is, however, necessary to consider other important factors, such as control system efficiency and the manifestation of market capacity (Bečvářová 2002). Other important factors affecting the level of business environment are: the stability of the business environment based on clear legal system, an effective solution to problems and effective administration. The non-standard land market is very specific for the Czech Republic, where approx. 90% of agricultural production is managed on rented land (Ministry of Agriculture 2004).

The disparity of inputs and outputs prices, a relatively low equivalent of production subsidies

compared with the countries of the EU 15 and the inconvenient equivalent of consumption subsidies are factors which have been continuously negatively influencing the development of agriculture (Doucha et al. 2002, Rosochatecká 2002). The active reaction on demand, including structural changes is considered necessary for competitiveness of enterprises (Bečvářová 2005).

### MATERIAL AND METHODOLOGY

The economic results of the selected sample of agricultural enterprises have been evaluated since 1996 according to a file of economic factors, regarding their production and climatic conditions, produce orientation and the concept of management. The actual

---

Supported by the Ministry of Education, Youth and Sports of the Czech Republic (Grant MSM No. 600765806).

development in a longer time period is evaluated by economic-statistic methods (Střeleček 1991).

The selected sample includes such agricultural enterprises that conduct their bookkeeping. The sample of enterprises is divided into two groups: enterprises in production areas (up to 450 m above sea level) and enterprises in marginal areas (above 450 m above sea level). Besides this division, the economic indicators of the enterprises in marginal areas are adjusted to the concrete elevation above sea level. In the sample divided according to these criteria, various economic indicators are observed, namely economic result before taxation. It points to other indicators as e.g. the required revenue rate, the structure of economic result and the influence of subsidies on economic result. Other monitored indicators are: the structure of revenues, labor productivity, fund efficiency and intensity of agricultural production.

All these indicators are compared both in time (regarding the development of the last years) and in space (production and marginal areas relatively).

150 agricultural enterprises in average were monitored in between 1995–2003. For 2004, we propose results of 141 enterprises of which 62 are active in production areas and 79 in marginal areas.

## RESULTS AND DISCUSSION

### Economic result structure before taxation

The economic result per accounting period is a complex indicator of management of every enterprise. The economic result was monitored before taxation and without remuneration to co-partners in order

to maintain the comparability of the individual data (Table 1). In this form, the economic result indicates both efficiency and economy of the operation process. Besides costs, the economic result is significantly influenced by conditions of commercialization (Střeleček et al. 2002).

The economic result fluctuates considerably in the course of the period of observation. In the production areas, the economic result was loss-making in five years out of ten. After two significantly losing years there was, in 2004, achieved the most important economic result for the period of observation, in average 6 millions of Czech Crowns (CZK) per enterprise. The increase of economic result in 2004 was 170% compared with 2000, which was the second most successful year during the whole period of monitoring.

In the marginal areas, there were four losing and five profitable years during the period of monitoring. The presumption that economics of these areas has begun to stabilize since 1998 was shattered in 2002 by a loss of almost one million CZK per enterprise. This unfavorable course was even intensified in 2003 and the loss in marginal areas reached 1.68 millions CZK per average enterprise. 2003 was the worst year during the monitored period. Equally as in the production areas, the economic result of 2004 was the most important one for the whole monitored period and the increase compared with 2000 is by 84%.

It is possible to divide the economic result before taxation into three items, which are in additive relation. They are operational economic result, economic result from financial operations and extraordinary economic result. Operational economic result is the most variable item of the economic result. In 2003

Table 1. Economic result structure before taxation in an average agricultural enterprise

Economic result (thousands CZK)	1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>Production areas</b>									
Operational economic result	492	-302	1 450	-24	3 600	2 809	-733	-267	6 972
Economic result from financial operations	-1 148	-1 845	-1 732	-1 876	-1 861	-1 225	-718	-1157	-1 266
Extraordinary economic result	444	940	400	1 124	491	519	401	266	303
Economic result before taxation	-212	-1 207	118	-774	2 232	2 106	-1 050	-1 157	6 021
<b>Marginal areas</b>									
Operational economic result	-817	-166	1 343	348	1 652	594	-913	-1 208	3 611
Economic result from financial operations	-712	-1 066	-822	-656	-532	-505	-551	-526	-562
Extraordinary economic result	552	658	601	334	634	575	573	55	180
Economic result before taxation	-977	-574	1 122	26	1 755	666	-891	-1 679	3 230

Source: Monitoring of agricultural enterprises in 1996–2004

in production areas the loss of operational economic result was 267 000 CZK per enterprise. On the contrary in 2004, there was the best operational economic result which reached to 6.9 millions CZK per enterprise.

In marginal areas, there is evident a positive tendency of the growth of the profit amount in different years. The tendency was interrupted in 2001, when the average enterprise profit decreased to only 594 thousand CZK, followed by loss years 2002 and 2003. The operation economic result increased again in 2004 to 3.6 millions CZK.

The negative economic result from financial operations is both in marginal and production areas the limitative factor influencing the total development of enterprises. In production areas, this loss is by 9% higher in 2004 than in the previous year and in marginal areas, the loss is higher by 7% compared with the previous year.

The efficiency of management represents an important point in evaluation of economic results. This is done by the analysis of distribution of enterprises according to economic result. If the distribution is flat, then there are considerable reserves in enterprise management. On the other hand, peaks with low variability mean that quantitative reserves in management are depleted and a change can be brought about only by the influence of different qualitative conditions (Figure 1).

If the division of enterprises is compared according to the rate of economic result, it is evident that there was an increase since 2000 to 2003 of the number of enterprises with a loss of economic result. For

example in 2000, there was 14.3% of the monitored enterprises loss making, in 2001 26.02%, in 2002 even 54.26% and in 2003 57.7% of enterprises operated with a loss. Extraordinarily favorable climatic and economic conditions in 2004 caused a decrease of loss-making enterprises to 6%, which is less than in the relatively favorable 2000.

In 2000, there were 10.5% of enterprises making a profit higher than 5 millions CZK, in 2001 11%, in 2002 only 4.7%, in 2003 only 3.4% of enterprises made a higher profit than 5 million CZK. In 2004, the number of enterprises with economic result over 5 millions increased to 33.3%. The general shift of enterprises either to worse or to better (2004) economic result indicates the growing influence of external factors, especially prices, climatic conditions and the total number of subsidies.

Regarding the low volume of non-agricultural production, it is useful to show the economic result before taxation per 1 ha of agricultural land (Table 2). This indicator monitors the same development tendencies as the average economic result. In production areas, there was reached the highest profit per ha of agricultural land 2 806 CZK/ha in 2004, which was an increase of 134% compared to the so far most successful year 2000. In 1997 and 2003, there was the lowest economic result, loss 600 CZK/ha and 540 CZK/ha.

In the marginal areas, the development was the same. In 2004, the highest profit per 1 ha 2 194 CZK was reached, which is more than a double profit compared with 2000. The profit increased by 112%. The greatest loss was in 2003, only 1 080 CZK/ha.

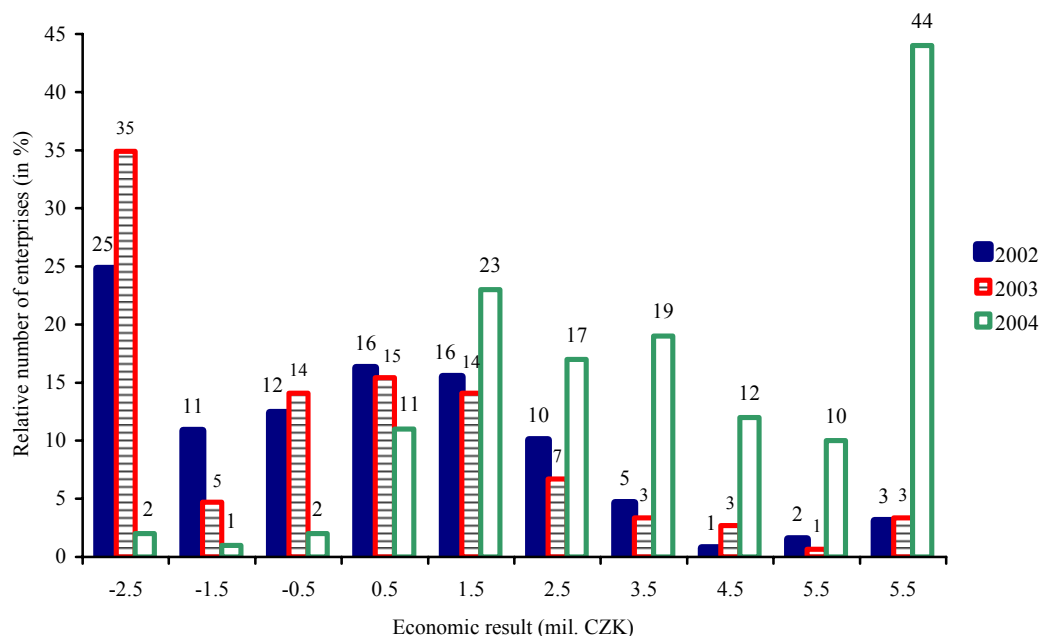


Figure 1. Division of enterprises according to the rate of economic result before taxation

Table 2. The rate of profit and economic result before taxation

	1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>Production areas</b>									
Total assets (thousands CZK)	86 420	100 340	101 690	111 690	103 370	109 650	113 298	122 577	135 105
Agricultural land area (ha)	1 626	2 004	1 641	1 937	1 873	1 890	1 975	2 149	2 146
Profit rate (%)	-0.25	-1.20	0.12	-0.69	2.16	1.92	-0.93	-0.94	4.46
Profit*/ha of agricultural land (thousand CZK)	-0.13	-0.60	0.07	-0.40	1.19	1.11	-0.53	-0.54	2.81
Requisite profit* by 4% revenue rate	3 457	4 014	4 068	4 468	4 135	4 386	4 532	4 903	5 404
Requisite profit* by 6% revenue rate	5 185	6 020	6 101	6 701	6 202	6 579	6 798	7 355	8 106
<b>Marginal areas</b>									
Total assets (thousands CZK)				81 620	88 380	85 524	81 650	80 806	82 347
Agricultural land area (ha)	1 540	1 750	1 881	1 425	1 697	1 718	1 555	1 549	1 472
Profit rate (%)				0.03	1.99	0.78	-1.09	-2.08	3.92
Profit*/ha of agricultural land (thousand CZK)	-0.63	-0.33	0.60	0.02	1.03	0.39	-0.57	-1.08	2.19
Requisite profit* by 4% revenue rate				3 265	3 535	3 421	3 266	3 232	3 294
Requisite profit* by 6% revenue rate				4 897	5 303	5 131	4 899	4 848	4 941

Source: Monitoring of agricultural enterprises in 1996–2004

\*The term profit stands here for economic result before taxation

It is customary to measure the adequacy of economic result according to the proportional indicator of the profit rate, i.e. the proportion of economic result to total assets. From the point of view of the development of the enterprise, only positive values are important. The negative revenue rate is always unsatisfactory.

In production areas, the positive profit rate was reached in four years, in 1998 (0.12%), 2000 (2.16%), 2001 (1.92%) and in 2004 (4.46%). In marginal areas, the highest profit rate was reached in 2004 as well (3.92%). For the first time during the monitored period, an average agricultural enterprise has reached in 2004 an acceptable profit rate. Although the economic result of an average agricultural enterprise in 2004 was by far the best one for the last nine years, the 4% profit rate is a standard result and therefore in the previous years the profit rate was absolutely unsatisfactory.

#### Structure of revenues of an average agricultural enterprise

In production areas, the rate of plant production revenues was gradually decreasing since 2000 till 2004, when a growth by 4.1 percentual points was recorded. On the contrary, the animal production revenues were slowly increasing till 2004 when a 1.9 percentual points

decrease was recorded. The rate of non-agricultural activity revenues was ranging since 2000 at 14% out of the total enterprise revenues; only in 2003 and 2004 a slight decrease was recorded (Table 3).

In marginal areas, the rate of plant production revenues shows the same tendencies as in production areas, after the decreasing tendency of the previous years, there was an increase of 3.5 percentual points in 2004. Animal production is essential for marginal areas. The animal production rate was permanently increasing since 1995 till 2004, when it decreased by 1.9 percentual points. While in 1994 the animal production rate represented 48% of the enterprise revenues, in 2003 it reached almost 62% of the enterprise revenues. The increasing rate of animal production was related to the increase of non-agricultural activity revenues. Especially in 1996 the rate non-agricultural activity decreased to 17.41%, although in 1995 the revenues of non-agricultural activity represented almost one third of the enterprise revenues (27.03%). The non-agricultural revenues show a permanent decrease; in 2004 they cover only 12% of total enterprise revenues. The agricultural enterprises tend to orientate their production specialization towards agricultural production and to reduce their production diversification. This tendency is against the EU goal to enforce the value added especially in the processing area.

Table 3. Revenue structure of an average agricultural enterprise

Elevation above sea level (m)	1999	2000	2001	2002	2003	2004	1999	2000	2001	2002	2003	2004
	Number of enterprises						Plant production revenues (%)					
To 450	34	34	58	51	68	62	31	41	38	37	35.80	39.86
450–500	16	17	21	20	22	21	29	34	28	26	22.37	25.27
500–550	20	19	26	23	19	20	31	28	30	27	26.27	33.41
550–600	18	16	19	17	18	17	29	32	32	28	21.16	30.73
600–650	7	9	18	14	16	17	25	26	26	26	27.73	25.76
Over 650	2	3	4	4	6	4	11	14	12	12	28.65	13
Over 450	63	64	88	78	81	79	28	30	28	26	24.52	27.99
	Animal production revenues (%)						Non-agricultural revenues (%)					
To 450	53	45	48	50	49.80	47.9	16	14	14	14	13.54	12.25
450–500	57	57	54	59	63.00	58.44	14	11	18	15	14.47	16.29
500–550	58	58	59	62	59.73	55.67	11	14	11	12	14.18	10.92
550–600	56	55	58	59	69.33	60.69	15	13	10	13	10.07	8.59
600–650	54	60	57	57	57.69	63.94	21	14	16	17	15.55	10.31
Over 650	79	80	80	78	53.63	70.93	10	10	8	10	17.72	16.08
Over 450	57	58	58	60	61.92	60.04	15	13	13	14	13.85	11.97

Source: Monitoring of agricultural enterprises in 1996–2004

### Evaluation of indicators of production process efficiency

The efficiency indicators compare the revenue rates with three main factors, i.e. land, labor and capital. The relation between revenues and agricultural land is characterized by production intensity, the relation between revenues and the average number of workers is characterized by labor efficiency and the relation between yields and assets is characterized by activity indicators.

In the case of profitable production in the initial period, the increase of revenue volume results in profit from production increase. The growth in labor efficiency causes a relative labor saving and lesser expenses on wages. The fund efficiency increase results in relative savings of the enterprise property, related with the relative depreciation saving and reduction of further costs. A faster turnover of short-term assets results in decrease of storage and material manipulation costs. Relative savings concerning assets and farmland are connected with higher appreciation. On the other hand, lowering of the volume of revenues under the otherwise stable conditions results in the relative excess of basic production factors and thus to the associated additional costs. The reduction of revenues volume causes the reduction of profit from

production extent. The lower revenues volume is related to cost remanence which results in higher cost rate of the production.

The revenue volume of an average agricultural enterprise in production areas shows an increasing tendency in 1995–2004, with certain stabilization in 1999–2002 (Table 4). The growing revenue volume is followed by the growing turnover rate of total assets, with a slight decrease in 2002 and 2003. In 2004 in the production area enterprises, the turnover rate equaled 0.763 and it increased compared with 2003 to 104%.

In marginal regions, the revenue volume growth is much slower compared with 1995 and in 2002 and 2003 a decrease was recorded. In 2003, the revenues volume grew by 13% compared with the previous year. The turnover rate is lower compared with the production areas, which results in a longer turnover rate by 96 days. The lower revenues volume and the turnover rate are second important factor of a worse economic situation of enterprises in marginal areas.

The enterprises in production areas have displayed a slight increase in the number of workers in the last three years (Table 5). In 2004, an enterprise employed in average 107 workers, which is a slight decrease compared with the previous year. Yet compared with 1995, the number of workers increased by 17. The

growth in number of workers since 1995 is related with growing labor productivity, except in 2002 and 2003. In 2004, the labor productivity reached 959.14 thousand CZK/worker and it increased compared with 1995 by 146% and 2003 by 115%. The labor productivity growth in production areas in 2004 represents for an average enterprise saving of 16.8 workers.

In marginal areas, an average agricultural enterprise shows a decreasing tendency in the number of workers. In 2004, the number of workers dropped from 67 to 60 and compared with 1999 the number of workers decreased by 18. Also in marginal areas the labor productivity decreased in 2002 compared with the previous year to 96.1% and in 2003 to 94.6%. In 2004 the labor productivity recurs a new growth, 910.3 thousand CZK/worker, which is a 125% increase

compared with 2003. Thanks to labor productivity, the enterprises in marginal areas showed saving of 15.9 workers.

The causes of labor productivity are different in the particular areas. In production areas, we can speak of a faster revenue volume growth with a slower reduction in the number of workers, while in marginal areas the labor productivity is caused by reduction of number of workers with a slower revenue volume growth. This fact is confirmed by comparison of the land area per worker. In production areas in 2004 the average land area per worker was 20ha, while in marginal areas 24.5ha. The given relation has a general character, since with growing elevation above sea level the number of workers in the enterprise decreases and the rate of land area per worker increases.

Table 4. Activity indicators of an average agricultural enterprise according to elevation above sea level

Elevation above sea level (m)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>Revenues of enterprise (million CZK)</b>										
Up to 450	59.16	60.52	68.49	72.55	80.95	79.08	85.605	87.984	89.92	103.08
450–500	48.67	50.67	64.96	76.46	66.19	62.96	75.387	62.693	71.58	70.049
500–550	43.82	47.15	55.28	52.03	46.97	57.60	53.166	47.351	43.20	50.501
550–600	42.25	41.25	43.01	42.51	35.29	46.74	49.224	47.557	36.55	47.181
600–650	47.44	39.51	69.27	47.98	62.24	60.58	55.050	49.919	45.20	55.637
Over 650	31.23	39.50	34.41	36.37	19.07	18.38	19.543	20.342	25.48	27.871
Over 450					49.55	55.66	56.475	50.406	48.51	54.942
<b>Total assets (million CZK)</b>										
Up to 450	90.61	86.42	100.34	101.69	111.69	103.37	109.650	113.298	122.577	135.11
450–500	77.01	79.88	99.45	102.46	86.79	93.53	107.189	100.219	114.935	98.06
500–550	66.00	76.79	90.72	83.06	85.30	87.72	82.440	75.619	73.308	76.765
550–600	70.96	72.95	77.94	82.32	59.61	80.27	78.492	77.973	62.772	76.434
600–650	75.12	70.48	121.59	83.19	94.73	105.78	84.666	84.174	80.403	84.957
Over 650	53.47	55.41	53.83	61.99	118.15	26.71	29.108	30.269	34.588	41.799
Over 450					81.62	88.38	85.524	81.650	80.806	82.347
<b>Total assets turnover rate</b>										
Up to 450	0.650	0.700	0.683	0.718	0.725	0.765	0.781	0.777	0.734	0.763
450–500	0.632	0.634	0.653	0.717	0.763	0.673	0.703	0.626	0.623	0.714
500–550	0.662	0.632	0.609	0.626	0.551	0.657	0.645	0.626	0.589	0.658
550–600	0.601	0.565	0.552	0.516	0.592	0.582	0.627	0.610	0.582	0.617
600–650	0.634	0.560	0.569	0.577	0.657	0.573	0.650	0.593	0.562	0.655
Over 650	0.582	0.713	0.639	0.587	0.161	0.688	0.671	0.672	0.737	0.667
Over 450					0.607	0.630	0.660	0.617	0.600	0.667

Source: Monitoring of agricultural enterprises in 1996–2004

Table 5. Labor productivity and remuneration in an average agricultural enterprise

Elevation above sea level (m)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>Revenues including financial and extraordinary (thousands CZK)</b>										
Up to 450	59 160	60 520	68 490	72 554	80 954	79 082	85 605	87 984	89 920	103 077
450–500	48 674	50 670	64 960	76 464	66 190	62 955	75 387	62 693	71 577	70 049
500–550	43 820	47 145	55 280	52 025	46 970	57 603	53 166	47 351	43 199	50 501
550–600	42 246	41 249	43 010	42 510	35 292	46 742	49 224	47 557	36 546	47 181
600–650	47 443	39 506	69 270	47 982	62 242	60 582	55 050	49 919	45 203	55 637
Over 650	31 226	39 504	34 410	36 368	19 068	18 375	19 543	20 342	25 482	27 871
Over 450					49 552	55 660	56 475	50 406	48 512	54 942
<b>Wages (thousands CZK)</b>										
Up to 450	7 106	7 450	14 220	14 210	11 736	11 935	13 351	15 036	15 699	17 215
450–500	8 639	9 440	10 064	11 317	9 545	9 940	10 435	10 633	13 171	11 260
500–550	7 011	8 165	12 632	8 978	9 162	9 834	9 373	9 238	8 764	8 855
550–600	7 458	7 410	8 269	6 600	7 294	7 014	7 750	8 409	6 930	8 130
600–650	7 167	7 567	9 400	11 154	12 362	9 854	10 018	9 466	9 756	10 339
Over 650	5 246	6 968	6 871	7 198	3 652	3 528	3 717	3 944	4 916	4 945
Over 450					8 906	9 837	9 151	9 195	9 464	9 460
<b>Average number of workers</b>										
Up to 450	90	79	134	108	100	96	100	105	108	107
450–500	105	99	95	100	78	75	80	73	92	69
500–550	89	90	126	83	81	79	71	68	62	58
550–600	95	83	81	65	66	57	61	58	47	51
600–650	90	85	97	105	117	100	79	72	71	69
Over 650	71	78	76	68	30	26	28	29	34	35
Over 450					78	74	71	66	67	60
<b>Labor efficiency</b>										
Up to 450	657.3	766.1	511.1	671.8	809.5	823.8	854.9	837.3	830.84	959.14
450–500	463.6	511.8	683.8	764.6	848.6	839.4	937.3	862.9	780.32	1 015.91
500–550	492.4	523.8	438.7	626.8	579.9	729.2	748.2	701.3	694.99	877.75
550–600	444.7	497.0	531.0	654.0	534.7	820.0	806.3	814.7	769.87	932.64
600–650	527.1	464.8	714.1	457.0	532.0	605.8	701.3	698.2	636.66	808.39
Over 650	439.8	506.5	452.8	534.8	635.6	706.7	709.2	707.5	755.48	798.70
Over 450					635.3	752.2	799.0	767.6	726.17	910.27
<b>Average annual wages per worker (thousands CZK)</b>										
Up to 450	79.368	94.44	106.35	129.79	117.14	127.99	133.321	143.096	145.06	160.189
450–500	82.400	94.74	105.54	112.42	121.78	132.53	129.743	146.365	143.59	163.302
500–550	78.876	90.23	100.58	106.73	113.11	121.93	131.909	136.815	140.99	153.905
550–600	78.453	81.90	101.58	100.49	110.70	119.76	126.944	144.048	145.99	160.705
600–650	79.590	89.02	96.66	106.10	105.79	119.91	127.616	132.397	137.41	150.232
Over 650	74.077	65.36	96.49	105.59	121.73	117.02	134.885	137.183	145.76	141.697
Over 450					113.63	123.99	129.472	140.029	141.67	156.727

Source: Monitoring of agricultural enterprises in 1996–2004

Table 6. Average fund efficiency of agricultural enterprises

Elevation above sea level (m)	Fund efficiency									
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Up to 450	1.13	1.34	1.32	1.20	1.32	1.323	1.388	1.359	1.315	1.38
450–500	1.10	0.98	1.02	1.21	1.35	1.189	1.187	1.018	1.013	1.206
500–550	1.11	1.06	1.09	1.12	0.94	1.081	1.103	1.056	0.996	1.137
550–600	0.97	1.16	0.94	0.98	1.18	1.139	1.210	1.125	1.052	1.085
600–650	1.01	1.21	0.91	1.06	1.01	0.987	1.120	0.971	0.934	1.085
Over 650	0.89	0.86	0.94	0.90	0.33	1.111	1.157	1.162	1.408	1.426
Over 450					1.07	1.106	1.153	1.042	1.011	1.143

Source: Monitoring of agricultural enterprises in 1996–2004

Table 7. Agricultural production intensity of an average agricultural enterprise

Elevation above sea level (m)	2000	2001	2002	2003	2004
<b>Revenues (thousands CZK)</b>					
Up to 450	79 082	85 605	87 984	89 920	103 077
450–500	62 955	75 387	62 693	71 577	70 049
500–550	57 603	53 166	47 351	43 199	50 501
550–600	46 742	49 224	47 557	36 546	47 181
600–650	60 582	55 050	49 919	45 203	55 637
Over 650	18 375	19 543	20 342	25 482	27 871
Over 450	55 660	56 475	50 406	48 512	54 942
<b>Agricultural land area (ha)</b>					
Up to 450	1 873.2	1 890.25	1 974.98	2 149.13	2 145.96
450–500	1 816.3	1 867.97	1 762.20	2 104.78	1 784.92
500–550	1 763.5	1 692.65	1 550.39	1 382.79	1 367.22
550–600	1 653.1	1 624.48	1 435.71	1 092.61	1 128.59
600–650	1 626.8	1 834.79	1 564.36	1 680.22	1 608.66
Over 650	1 046.3	1 025.86	1 016.50	1 062.15	1 235.56
Over 450	1 697.1	1 718.53	1 554.83	1 549.40	1 472.19
<b>Revenues per 1 ha of agricultural land (thousands CZK)</b>					
Up to 450	42.218	45.288	44.549	41.840	48.03
450–500	34.661	40.358	35.576	34.007	39.24
500–550	32.664	31.410	30.541	31.241	36.94
550–600	28.275	30.301	33.125	33.449	41.81
600–650	37.240	30.004	31.910	26.903	34.59
Over 650	17.562	19.050	20.012	23.991	22.56
Over 450	32.797	32.862	32.419	31.310	37.32

Source: Monitoring of agricultural enterprises in 1996–2004



In general, the fund efficiency reflects the same tendencies, which influence the revenues. In production areas, there was not recorded any development of this indicator since 1996, only its annual oscillations (Table 6).

In the marginal areas, the fund efficiency grows steadily since 1996 to 2001. In 2002 and 2003, a decrease of fund efficiency and its recurrent growth in 2004 was recorded in both production and marginal areas. In production areas in 2004 the fund efficiency represents a relative saving of fixed assets 3 664 thousand CZK. In marginal areas in 2004 the fund efficiency reached 84% of fund efficiency in production areas and it represented a relative saving of tangible property 6 288 thousand CZK in marginal areas.

Revenues per 1ha of agricultural land represent the evidence of agricultural production intensity in the financial statement monetary evidence. From the comparison of years 2000–2004, this tendency can be derived: The revenue volume decreases with the increasing elevation above sea level. In 2004, an average enterprise in marginal areas reached only 78% of revenues in CZK/ha of an enterprise in production areas.

The average size of a marginal area enterprise is smaller than in production areas (Table 7). An average enterprise in marginal area reaches 68% of land area of an enterprise in production areas, 64% of fixed assets, 56% of average number of workers and 53% of revenues per enterprise. The disproportion concerns especially the revenue volume, which is caused by the influence of extensive production, signaled by decrease of revenues per 1 ha of agricultural land. With the elevation above sea level, this intensity decreases significantly. Lower production intensity in marginal regions influences higher production costs and thus a lower profitability level.

### The subsidy influence on the rate of economic result before taxation

The volume of subsidies shows a steady growth in the years 1995–2000. In 2000, there was a significant increase in subsidies caused by drought subsidies, the settlement of which continued in 2001 (Table 8). In 1995–1998, the subsidies in marginal areas surpassed those in production areas, e.g. in 1999 the index comparing marginal and production areas was 126.6%. In 2000, this proportion changed to 91.16% and in 2001 the volume of subsidies was almost equal in marginal and production areas as it were in 1999 (126.4%).

There is almost no difference in the rate of subsidies per an average agricultural enterprise in 2002 compared to 2001. In 2003, there was an increase of subsidies per enterprise especially in production areas (index 03/02 = 176%). 2004 is marked by a significant increase of subsidies into agriculture. In the separate sea level areas, the volume of subsidies per enterprise increased in the range from 57% to 110% in comparison with the previous year.

To compare more easily the subsidies in production and marginal areas, the subsidy volume was calculated per ha of agricultural land. Figure 2 shows a relatively high dependence of economic result on subsidies in CZK/ha of agricultural land, which is testified by the correlation coefficient, equal to 0.775 in production areas and 0.716 in marginal areas.

In 2004, the entrepreneurs could claim not only the state paid subsidies but also subsidies according to the EU Common Agricultural Policy. Despite the fact that these means are significantly lower than subsidies paid out in the original EU countries (EU 15), the subsidy volume rose by 60% compared with the preceding year.

Table 8. The subsidies of an average agricultural enterprise in thousand CZK

Elevation above sea level (m)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
To 450	23.23	818	1 411	1 856	3 420	5 308	3 432	3 503	6 193	10 798
450–500	31	1 450	1 196	3 279	4 110	5 352	4 268	4 308	5 948	10 404
500–550	19.49	1 769	1 872	2 798	3 806	4 770	3 920	4 320	4 126	8 897
550–600	15.02	1 235	1 649	2 159	4 040	4 620	3 819	3 747	3 586	6 956
600–650	16.82	2 362	2 791	3 995	6 670	4 753	5 566	4 561	5 099	10 807
Over 650	5.03	2 383	3 387	4 647	3 904	4 356	4 368	4 532	5 672	8 935
Over 450	18.03	1 739	1 921	3 090	4 330	4 849	4 339	4 246	4 807	9 293
Total	19.36	1 552	1 765	2 703	3 945	4 997	3 978	3 952	5 439	9 955

Source: Monitoring of agricultural enterprises in 1996–2004

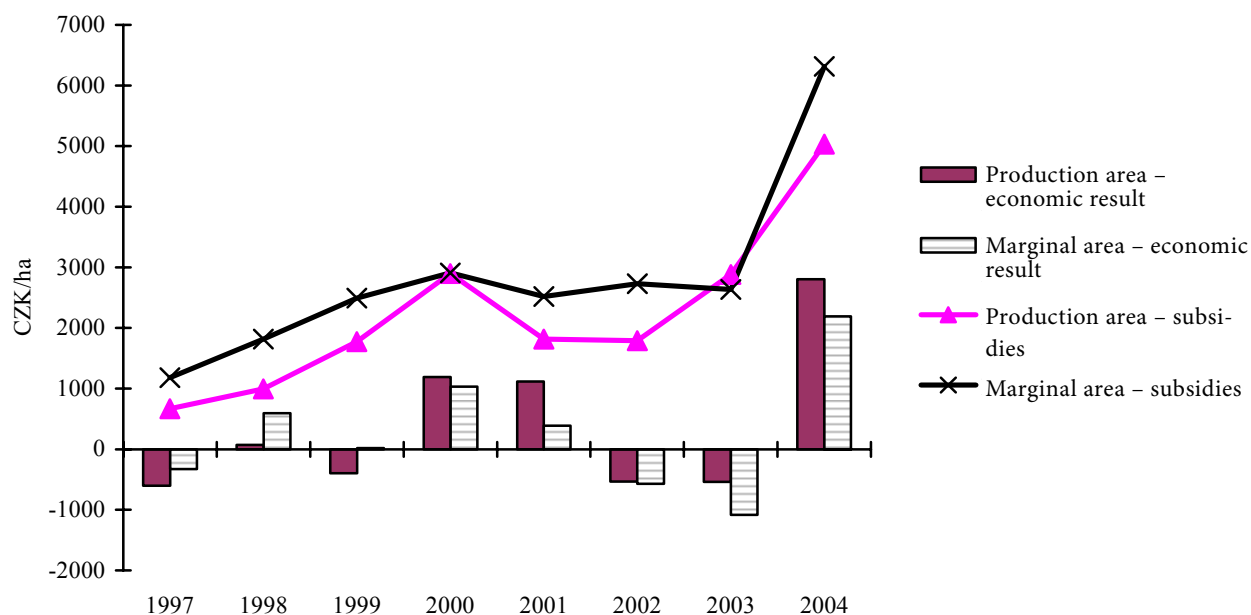


Figure 2. Development of economic result and subsidies in CZK/ha

Direct payments (including adjustments) represented the greatest rate of subsidies in 2004. The second greatest rate was represented by the payments in the range of the Horizontal Rural Development Plan (HRDP). An average enterprise in the production area was paid 3 458 CZK/ha of agricultural land as direct payment, which is almost 69% of all subsidies. Through the HRDP, 667 CZK/ha (13%) was paid, and 244 CZK per ha (4.85%) as State-aid. Concerning other subsidies, most was paid out through the programs of Supporting and Guarantee Agricultural and Forestry Fund (PGRLF) (6%).

In marginal areas the greatest rate of the paid out, means was represented also by the direct payments 3 350 CZK/ha (53%) per average enterprise. Further 2 124 CZK/ha represented the HRDP payments (34%). The State-aid payments covered 256 CZK/ha (4%) and the PGRLF covered 3%.

Nowadays, subsidies to agricultural enterprises are an important factor influencing profitability of the agricultural business. Accounting subsidies into operational economic result marked significantly the operational economic result in 2004. The important increase of subsidies caused the relatively favorable

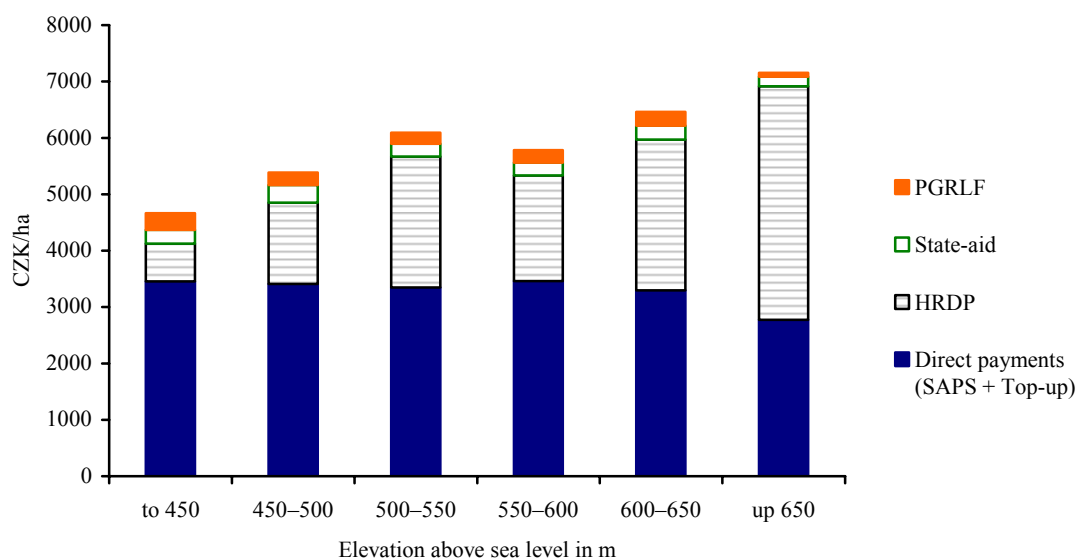


Figure 3. Subsidies in 2004 according to the elevation above sea level

operational economic result and together with very favorable climatic conditions during the vegetation period, they resulted in the best economic result during the whole monitored period (Figure 3).

### Structure of plant production

In 2004 in production areas, 50% of agricultural land was covered by grain crops, which is by 8 percentual points more than in 2003. In 2004, an average grain crops yield was 6.07 t/ha in production areas, which is by 15% more than in 2003. Potatoes covered 5% of agricultural land in production areas and the average yield grew by 46% compared with the previous year. Sugar beet covered 4.2% of agricultural land, which is the same surface as in the previous year; the yield 47 t/ha means the growth by 20%. Colza covered 8.5% of agricultural land and the yield was 3.63 t/ha (174% of 2003 yields).

In the marginal areas, grain crops covered 35.8% of agricultural land, which is a 1.8 percentual points increase. An average grain crops yield was 5.46 t/ha (142% of 2003 yields). Potatoes covered 14.9% of agricultural land and the yield was 127% of 2003 yields. Colza covered 7.3% of agricultural land and the yield was 3.63 t/ha, which is a 100% increase compared with 2003. Flax area stayed on the level of 2003 but the yields grew by 60%.

### Structure and utility of animal production

Since 1999, there has been a slight increase in the number of cattle, in 2004 the total number of cattle

and of cows is the same as the preceding year. The rise in cattle number and the performance of milk cows dropped by 1% compared with the previous year. Number of pigs dropped to 91% and the yield increased by 3%.

Since 1999, there was a decrease in the number of cattle in marginal areas (Figure 4). In 2004, it is 5.6% and the decrease in the number of cows is 6% compared with 2003. The increase in cattle number dropped by 3% and the performance of milk cows increased by 5% compared with the preceding year. Numbers of pigs dropped to 90% and the yield increased by 4% compared with the previous year.

The utility of animal production has been increasing in the production areas faster than in marginal areas since 1999. Daily increments of cattle rose in the period 1999–2004 by 11% to 0.902 kg, while during the same period, increments in marginal areas were stagnant (index 04/99 = 0.99). The increments of pigs show similar development. In production areas, increments rose almost by 12% to 0.672 kg/day, while in marginal areas the rise was only 6% to 0.639 kg per day. The annual utility of milk cows increased since 1999 by 45% and in 2004 it was 6 238 l/1 milk cow. In marginal areas, the annual utility increased by 18% compared with 1999 and it represented 5 657 l/1 milk cow in 2004.

### Financial health of an enterprise

The evaluation of the development of financial health of enterprise was carried out on a file of 125 enterprises, where the data for 2002–2004 (balance

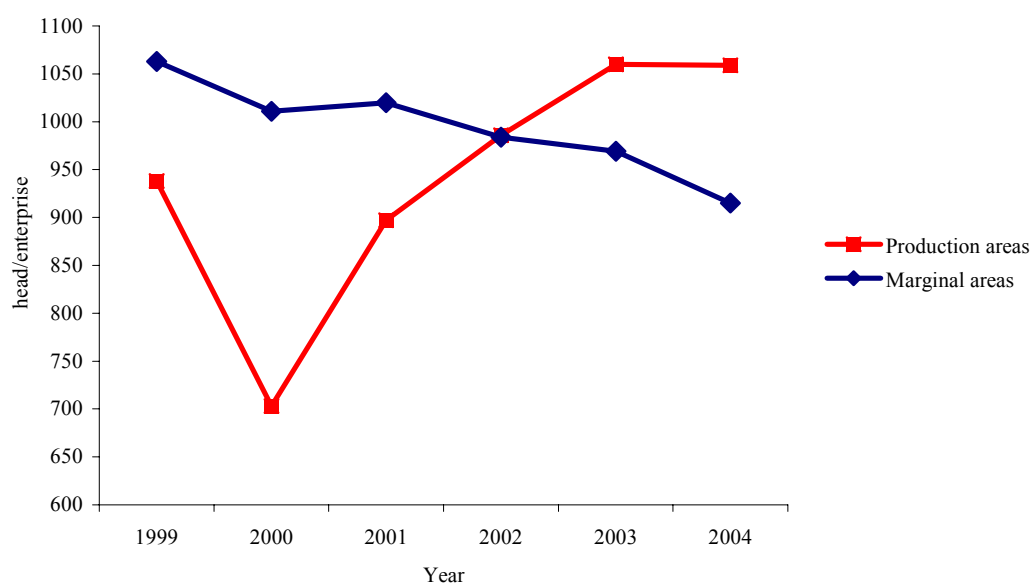


Figure 4. Development of cattle number in production and marginal areas

sheets and income statements) were accessible. The methodology used for the Operational Programme Agriculture was employed for the calculation.

After 2002 and 2003 when the value of financial result reached 24 points, respectively 23 points, there was a significant improvement in 2004, the maximum value reaching 31 points. This means that all indicators reached a maximal evaluation in points. This improvement was influenced by the achieved profit and therefore the indicators based on it rose.

Table 9 shows the development of the individual indicators. The value of the indicators ROA and

interest coverage reached for the first time in 2004 positive values, which resulted for both indicators in a rise from 1 to 3 points. The indicator of long-term profitability noted a fall in 2003 to 5.9%. This development was caused by two reasons. First by the decrease of the reserve and indivisible funds and profit funds and second by the rise of losses from the previous years and from the current period. But in 2004 the economic result of the current accounting period covered losses of the preceding years and the indicator of long-term profitability passed the 8% limit. More indicators showed a significant improvement: the revenues profitability indicator rose from 10.2% in 2003 to 20.8% in 2004 and the value of the liability maturity of the CF indicator dropped from 6.9 years to 3.5 years. The indicators of value added/inputs and the total insolvency did not change significantly compared the previous years. They show positive

Table 9. Indicator values of an average enterprise

Indicator	2002	2003	2004
ROA (%)	-3.47	-1.36	5.38
Long-term profitability	9.43	5.94	9.33
Value added/inputs (%)	46.66	48.46	51.67
Revenues profitability from cash flow (%)	5.43	10.20	20.80
Total insolvency (%)	39.69	39.44	38.28
Interest coverage (times covered)	-3.21	-1.45	6.37
Liability maturity of cash flow	6.40	6.85	3.54
Stock coverage with net working capital	0.79	0.93	1.02
Total liquidity (times)	1.99	2.50	2.57

Source: Monitoring of agricultural enterprises in 1996–2004

Table 10. Division of enterprises according to the number of points achieved

Category	Number of points	2002	2003	2004
A	25.01–31	44	40	88
B	17.01–25	73	55	33
C	15.01–17	4	11	3
D	12.51–15	4	14	0
E	9–12.5	0	5	1

Source: Monitoring of agricultural enterprises in 1996–2004

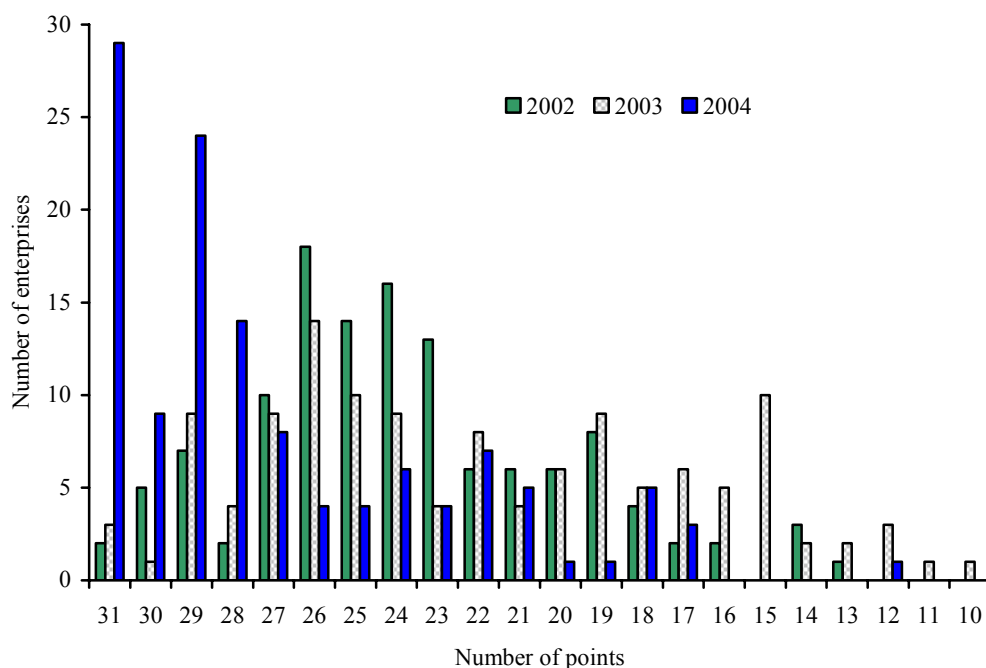


Figure 5. Division of enterprises according to number of points achieved

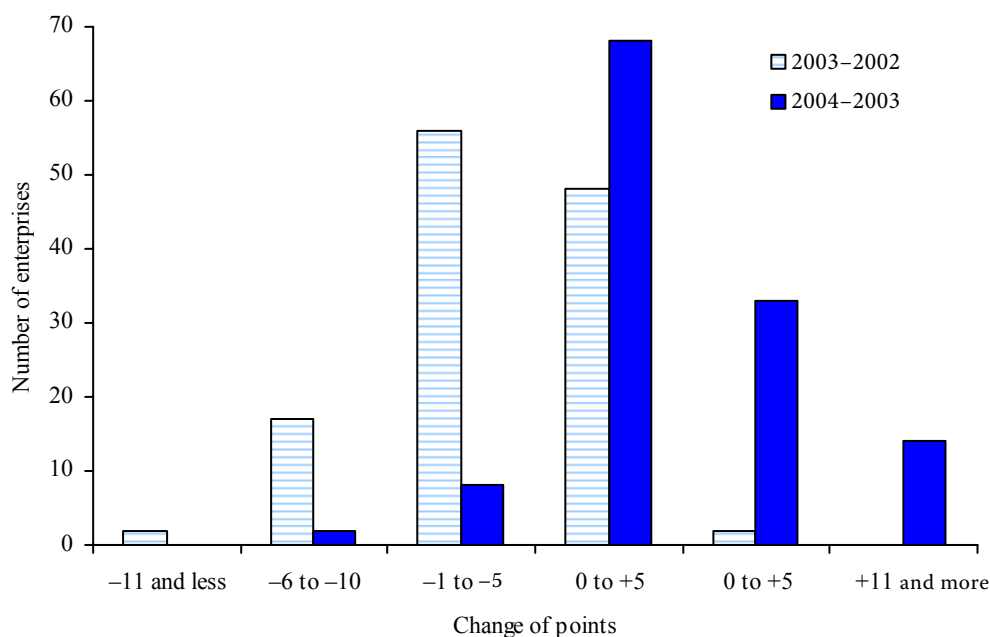


Figure 6. Division of the annual change of the financial health of enterprises

values as well as the indicators the stock coverage by the net working capital and total liquidity.

The rate of enterprises that achieved the highest point evaluation increased in 2004. While in 2002 only 2 enterprises and in 2003 3 enterprises, in 2004 already 29 enterprises reached the highest evaluation (Figure 5).

If the separate enterprises were be grouped into categories according to the number of points achieved (Table 10), the double increase of the number of enterprises in the category A compared with the previous years will be evident and so will be the significant decrease in the categories C, D and E. 124 enterprises in 2004 (only 106 in 2003) fulfill the criteria of the Operation Programme (more than 15 points-categories A, B, C).

The inter annual monitoring of financial health of the individual enterprises shows, that between 2002 and 2003, there was a fall off in the point evaluation for 75 enterprises and 50 enterprises either did not change or improved their financial health. The fall by 1 to 5 points affected in this period 56 enterprises, over 5 points 19 enterprises. An improvement by 1 to 5 points was monitored by 34 enterprises; over 5 points only by 2 enterprises and 14 enterprises did not change their financial health at all (Figure 6).

In 2004, the financial health improved or did not change in 110 enterprises, only 10 fell off. There was a rise by 11 and more points in 14 enterprises, by 6 to 10 points in 33 enterprises and by 1 to 5 points in 61 enterprises. In 7 enterprises, the financial health did not change. A decrease by 1 to 5 points affected

8 enterprises and only 2 enterprises marked a decrease over 5 points.

## CONCLUSION

After significantly unfavorable years 2002 and 2003, when the losses in economic result of agricultural enterprises were caused by the adversary climatic and economic conditions, the following 2004 brought exceptionally favorable climatic conditions during the vegetation period and better economic conditions than the previous years.

The favorable climatic conditions resulted in the highest yields of most products of plant production during the whole monitored period. High yields and the highest proportion of grain crops areas in the last period caused an extraordinary high production of grain crops, and therefore the prices dropped already during the harvest period. The average price was the lowest one in this year in the last five years. Costs per 1 ha of grain crops were raising regularly because of the growing prices of inputs into agriculture. Although the costs reached their highest value in 2004, thanks to very high yields the costs per ton of grain crops were lowered by 16% compared with the previous year.

The number of cattle per average enterprise shows a slight decrease compared with the previous year. The utility of animal production increases faster in the production areas than in the marginal ones.

The profit in CZK/ha of agricultural land was 2 806 per an average enterprise operating in production area,

2 194 in marginal area. The number of enterprises showing a positive economic result, representing only 42% in 2003, rose in 2004 to 94%. One of the factors that influenced the best result in farming in the last 10 years was state and the European subsidy policy. The increase in the volume of subsidies in CZK/ha of agricultural land represented 175% in production areas and 239% in marginal areas of 2003 volume.

The financial health of an enterprise is related to the development of profit in the last years. According to the criteria of the Operation Programme of Agriculture, the category A was reached in 2002 by 35% of enterprises, in 2003 only by 32% and in 2004 by 70% of the monitored enterprises.

According to the indicator of profit rate, 2004 was the only year during the whole monitored period (since 1995), when a congruous profit rate was reached, 4.2% in an average enterprise. Even though this value is the most favorable one since 1995, a 4% profit rate shows a standard economic result. The low or even negative values reached in last years are from the point of view of the sustainable development of agricultural enterprises absolutely insufficient.

## REFERENCES

- Bečvářová V. (2002): The changes in agribusiness impact on the collective environment of agricultural enterprises. *Agricultural Economics – Czech*, 48 (10): 449–455.
- Bečvářová V. (2005): Agribusiness – a scope as well as an opportunity for contemporary agriculture. *Agricultural Economics – Czech*, 51 (7): 285–292.
- Doucha T. et al. (2002): Main survey sampling findings in agricultural enterprises in the Czech Republic for the project Phare ACE. *Agricultural Economics – Czech*, 48 (5): 197–210.
- Rosochatecká E. (2002): Economic efficiency of agricultural enterprises and its evaluation. *Agricultural Economics – Czech*, 48 (3): 97–101.
- Střeleček F. (1991): Analysis of business activity. VŠZ Prague, 61 p.
- Střeleček F., Kollar P., Lososová J. (2002): Economic results of agricultural companies in production and marginal areas in the year 2000. *Agricultural Economics – Czech*, 48 (10): 433–443.
- The Green Report 2004 (2005). Ministry of Agriculture of the Czech Republic, Prague.

Arrived on 11<sup>th</sup> October 2005

---

### Contact address:

František Střeleček, Jana Lososová, Radek Zdeněk, University of South Bohemia in České Budějovice, Studentská 13, 370 05 České Budějovice, Czech Republic  
e-mail: [strellec@jcu.cz](mailto:strellec@jcu.cz), [lososova@zf.jcu.cz](mailto:lososova@zf.jcu.cz), [zdenek@zf.jcu.cz](mailto:zdenek@zf.jcu.cz)

---