

# Economic results of agricultural companies in production and marginal areas in the year 2000

## *Ekonomické výsledky zemědělských podniků hospodařících v produkčních a marginálních oblastech v roce 2000*

F. STŘELEČEK, P. KOLLAR, J. LOSOSOVÁ

*The Department of Accounting and Financial Management, University of South Bohemia, České Budějovice, Czech Republic*

**Abstract:** The article was written on the base of research results concerning economic development of several selected Czech agricultural companies. In dependence on the altitude, the sample was divided into two sub-samples: companies of production areas and companies of marginal areas. Various economic indicators were monitored in these two sub-samples, the most important one being the economic result before tax. Other monitored indicators are closely related to this one – e.g. the required profit ratio, structure of the economic result, tax impact on the economic result. Other monitored indicators were: the structure of the revenue, productivity of labour, labour technical equipment, capital efficiency and other. Time comparison (development during several recent years; comparison between production and marginal areas) and space comparison of these two sub-samples were carried out. In its conclusion, this article evaluates the history of the hitherto development.

**Key words:** production areas, marginal areas, economic result before tax, economic result for the accounting period, capital efficiency, productivity of labour, labour technical equipment, tax multiplier, tax rate, liquidity, assets structure, liabilities structure

**Abstrakt:** Příspěvek je zpracován na základě výsledků výzkumu ekonomického vývoje vybraného vzorku zemědělských podniků hospodařících na území ČR. Výběrový soubor podniků je rozdělen od začátku na základě nadmořské výšky na produkční a marginální oblasti. V takto rozděleném souboru jsou potom sledovány různé ekonomické ukazatele. Hlavním sledovaným ekonomickým ukazatelem je hospodářský výsledek před zdaněním. Od něho se potom odvíjejí i další ukazatele, jako např. požadovaná míra zisku, skladba hospodářského výsledku a vliv daně na hospodářský výsledek. Sledovanými ukazateli jsou dále struktura výnosů, produktivita práce, technické vybavení práce, fondová účinnost a další. Všechny tyto ukazatele jsou porovnávány jak v čase (vzhledem k vývoji za několik posledních let), tak i v prostoru (vzájemně mezi produkčními a marginálními oblastmi). Na závěr je provedeno celkové zhodnocení dosavadního vývoje.

**Klíčová slova:** produkční oblasti, marginální oblasti, hospodářský výsledek před zdaněním, hospodářský výsledek za účetní období, fondová účinnost, produktivita práce, technické vybavení práce, daňový multiplikátor, míra zdanění, likvidita, struktura aktiv, struktura pasiv

Economic development of the companies in mountainous and sub-mountainous areas has been monitored for six years within the framework of the grant CEZ J 06/98 - 1222 00001 in co-operation with the Agrarian Chamber of the Czech Republic. The sample involves companies using double entry book-keeping.

The agriculture companies are divided into two groups: companies in production areas – the altitude up to 450 m, and companies in marginal areas – the altitude over 450 m. In the group of marginal area companies, economic indicators are monitored in dependence on the altitude as well.

### SAMPLE

Monitored companies:

Year of monitoring	Monitored companies – total number	Companies in marginal areas (out of the total)
1995	283	222
1996	228	189
1997	103	76
1998	240	99
1999	98	64
2000	102	68

---

The article was written within the framework of the grant CEZ: J 06/98:122200001

As regards the number of companies and the volume of production, the sample of companies in marginal areas can be seen as a representative one, while the sample of companies in production areas can be seen as a relatively representative one. Distribution of companies in dependence on the altitude is less representative.

### DISTRIBUTION OF THE COMPANIES IN DEPENDENCE ON THE LEGAL FORM OF ENTERPRENEURSHIP AND IN DEPENDENCE ON THE TYPE OF THE MONITORED AREA

Table 1 shows that legal persons i.e. co-operative farms, joint stock companies and limited liability companies predominate in the sample. Conditions of agricultural companies are characterized by the average altitude and by the average land price. There is quite a high reciprocal statistical correlation between the average altitude and the average land price. This correlation is given by the correlation coefficient  $r = -0.77$ . In 2000, the average altitude of agricultural companies in marginal areas was 554 m while the average altitude of agricultural companies in production areas was 337 m. The average land price in production areas was 6.07 CZK and in marginal areas 2.90 CZK.

### THE ECONOMIC RESULT OF AN AVERAGE COMPANY FOR AN ACCOUNTING PERIOD

Economic result of a company can be seen as a summary economic indicator of its quality. According to the existing methodology, the profit and loss statement structure of the economic result can be described in the following way:

The economic result from operation activities (before tax)	+
The economic result from financial activities (before tax)	-
The income tax from operation and financial (routine) activities	=
The economic result from current activities	

The economic result from current activities (after tax)	+
Economic result from extraordinary activities (after tax)	+ (-)
Transfer of the shares of the economic result to the partners	=
The economic result for the accounting period	

To keep the data comparable and to analyze them correctly, economic result was monitored before tax and without transfer of the shares of the economic result to the partners. This interpretation of economic result shows the level of the efficiency, effectiveness and economization of the production process. Economic result is significantly influenced by the costs and by conditions at the market.

In 2000, the economic result of an average agriculture company for the accounting period reached 2.232 mil. CZK in production areas. It was the best economic result out of the monitored sample since 1996. This economic result cannot be seen as a permanent improving trend as the loss here has taken turns with profits almost regularly. There were three unprofitable years (1996, 1997 and 1999) and two profitable years (1998, 2000). The question arises, whether the economic result of 2000 should be regarded as an extraordinary one or whether it has established a new trend.

In 2000 the economic result in a marginal area average company is, together with the result of 1996, lower than that in production areas and equals to 1.755 mil. CZK. The improving tendency of the economic result in marginal areas is quite stable, with the exception of 1999 (Table 2).

### THE REQUIRED PROFIT-ASSETS RATIO

The average profit-assets ratio of production area companies was 1.6% and that of marginal area companies was 1.98%. The analysis of the profit-assets ratio shows that neither in production nor in marginal areas the positive economic result of an average company is able to ensure its (i.e. the company's) adequate reproduction. Here, we

Table 1. Distribution of the companies in dependence on the legal form of entrepreneurship and in dependence on the type of the monitored area

Companies – total number	Production area						Marginal area					
	1995	1996	1997	1998	1999	2000	1995	1996	1997	1998	1999	2000
School farm	0	0	0	0	0	0	1	1	0	0	0	0
State companies	0	0	0	0	0	0	1	0	0	0	0	0
Public Ltd. companies	0	0	0	1	0	0	1	1	1	1	1	1
Natural person	5	0	0	0	1	0	8	5	1	1	0	1
Joint-stock companies	3	5	7	26	24	12	15	18	13	9	18	13
Ltd.	10	7	3	22	8	6	63	56	13	16	17	13
Co-operative farms	43	27	17	92	33	17	133	108	48	74	54	40
Total number	61	39	27	141	66	35	222	189	76	99	90	68

Source: Sample research of agricultural companies in 2000

Table 2. Economic result structure before tax – the average agricultural company

The economic result (thousand of CZK)	Production area					Marginal area				
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
Operation economic result	492	-302	1 450	-24	3 600	-817	-166	1 343	348	1 652
Economic result from financial activities	-1 148	-1 845	-1 732	-1 876	-1 861	-12	-1 066	-822	-656	-532
Economic result from extraordinary activities	444	940	400	1 124	491	552	658	601	334	634
Economic result for the accounting period	-212	-1 207	118	-774	2 232	-977	-574	1 122	26	1 755

Source: Sample research of agricultural companies in 2000

demonstrate a demand resulting from the two lowest acceptable profit ratio values – i. e. 4 and 6%. In production areas, the profit should reach 4.157 mil. CZK at a 4% profit ratio and at the average company assets of 103.39 mil. CZK. The companies lack 1.833 mil. CZK to reach this level. The current profit satisfies the above mentioned requirement only from 42%. At a 6% profit ratio and at the same volume of assets, the profit should reach 6.235 mil. CZK. The current profit satisfies this requirement just from 28%. With respect to the above mentioned criteria, the current profit is obviously insufficient and cannot satisfy the reproduction requirements of agricultural companies.

An analogous situation can be seen in marginal areas: at a 4% profit ratio and at the average assets of 94.05 mil. CZK the profit should reach 3.762 mil. CZK; at a 6% profit rate the profit should be 5.643 mil. CZK. The requirement of a 4% profit rate is satisfied only from 46.65% and the requirement of a 6% profit rate is satisfied only from 31.10%. These results indicate that a marginal area agriculture company lacks from 2.007 to 3.888 mil. CZK.

### THE ECONOMIC RESULT STRUCTURE – BEFORE TAX

Both in marginal and production areas, the unsatisfactory level of the economic result is closely connected with the economic results from financial activities. With the exception of 1996, the loss from financial activities in production areas varied between 1.732–1.861 mil. CZK and was quite stable. The highest loss from financial activities in marginal areas was recorded in 1997 (1.066 mil. CZK) and it was gradually falling till 2000 (0.532 mil. CZK).

The economic result from extraordinary activities in production areas varied a lot, but we can assume that it can become steady and reach the level of 400 000–500 000 CZK. Marginal areas show lower variability of the extraordinary economic result. Its variation range in the monitored period is 324 000 CZK and its average value is 555 800 CZK. In marginal areas, the extraordinary economic result can compensate for the loss from financial transactions and thus the operation economic result almost equals to economic result for the accounting period. The situation in the production area is completely

different. The extraordinary economic result can compensate for the loss from financial activities just from 26% and therefore the major part of this loss – 74% must be covered from the operation economic result. In this sense, the loss from financial transactions represents a permanent retarding factor between the operation economic result and the economic result for the accounting period. The size of the retarding factor can be given by the amount of 1.37 mil CZK.

### THE IMPACT OF THE INCOME TAX ON THE ECONOMIC RESULT DURING AN ACCOUNTING PERIOD

To assess the impact of the income tax on the economic result, two indicators can be used:

$$\text{Tax rate} = \frac{\text{economic result after tax}}{\text{economic result before tax}}$$

$$\text{Tax multiplier} = \frac{\text{economic result before tax}}{\text{economic result after tax}}$$

For production area agricultural companies, the average tax rate is 0.987 and for marginal area companies, the average tax rate is 0.947. In production areas, from every 1 000 CZK of profit before tax, 987 CZK is the profit after tax and 13 CZK is the tax. In marginal areas, from every 1 000 CZK of profit, 947 CZK is the profit after tax and 53 CZK is the tax. To gain the profit of 1 000 CZK after tax, an average marginal area agricultural company should reach 1 055 CZK profit before tax and an average agricultural production area company should reach 1 014 CZK before tax. Lower average tax rate in production areas (to compare with that of marginal areas) is caused by the unbalanced economic result (Table 3).

### THE ECONOMIC RESULT STRUCTURE BEFORE TAX FOR ACCOUNTING PERIOD – IN DEPENDENCE ON THE ALTITUDE

Table 4 shows the development of the economic result of an average agricultural company in dependence on the altitude.

Table 3. The impact of the tax multiplier on the economic result for the accounting period – the average agricultural company

Category	Number of companies	Economic result after tax (thousands CZK)	Economic result before tax (thousands CZK)	Profit after tax/ profit before tax	Profit before tax/ profit after tax
Production area	34	2 202	2 232	0.987	1.014
450–500 m	17	1 560	1 706	0.914	1.094
500–550 m	19	1 747	1 805	0.968	1.033
550–600 m	16	1 687	1 808	0.933	1.072
600–650 m	9	1 883	1 898	0.992	1.008
Over 650 m	3	403	428	0.942	1.062
Marginal area	64	1 638	1 755	0.933	1.071

Source: Sample research of agricultural companies in 2000

Table 4. The development of the economic result of the average agricultural company in dependence on the altitude

Altitude	Operation economic result (thousands CZK)				Economic result from financial activities (thousands CZK)			
	1997	1998	1999	2000	1997	1998	1999	2000
Up to 450 m	-302	1 450	-24	3 600	-1 845	-1 732	-1 876	-1 861
450–500 m	409	1 969	750	2 872	-1 367	-1 366	-1 081	-1 324
500–550 m	83	1 481	-190	919	-1 356	-1 073	-852	-650
550–600 m	-717	-573	-19	1 277	-224	290	151	304
600–650 m	-1 018	2 977	1 884	1 695	-1 359	-1 297	-1 250	-290
Over 650 m	-480	923	456	723	-405	248	-297	-291
Marginal area	-166	1 343	348	1 652	-1 066	-822	-656	-532

  

Altitude	Economic result from extraordinary activities (thousands CZK)				Economic result before tax for accounting period (thousands CZK)			
	1997	1998	1999	2000	1997	1998	1999	2000
Up to 450 m	940	400	1 124	491	-1 207	118	-774	2 232
450–500 m	393	511	18	158	-565	1 114	-313	1 706
500–550 m	836	768	517	1 536	-437	1 176	-525	1 805
550–600 m	231	149	430	228	-710	-134	562	1 808
600–650 m	1 199	1 406	344	494	-1 178	3 086	977	1 898
Over 650 m	1 350	-18	25	-4	465	1 153	184	428
Marginal area	658	601	334	634	-574	1 122	26	1 755

Source: Sample research of agricultural companies in 2000

In 2000, the economic result before tax was quite stable in marginal areas. For the altitude 450–650 m, its minimal value was 1.706 mil. CZK, the variation range being 192 000 CZK. This well-balanced situation had not been reached in the preceding years; if this trend continues, it will confirm that the efficiency of agricultural companies management has been considerably improved. The well-balanced economic result is, however, a result which consists of unbalanced components.

#### ACTIVITY INDICATORS OF THE AVERAGE AGRICULTURAL COMPANY

Activity indicators of the average agricultural company show entrepreneurial possibilities of a particular com-

pany, as well as how the company's industrial capacity is utilized. Both these indicators may influence considerably the company's economic result. If we want, in the case of profitable production, to increase the volume of production, we can presume proportional profit growth, the constant of proportionality being equal to the profit revenue ratio. Expensiveness of depreciation revenue ratio and of other fixed costs/revenue ratio can be reduced by better utilization of the capacity of production. This factor reduces the total cost-revenue ratio which can progressively accelerate the profit growth. On the other hand, the decrease of the revenues usually results in cost remanence; this remanence itself conditions the higher cost revenue ratio (Table 5).

Table 5. The agricultural company activity indicators – classification in dependence on the altitude

Companies according to the altitude	Company revenues in mil. CZK						Index
	1995	1996	1997	1998	1999	2000	2000/1995
Production	59.16	60.52	68.49	72.55	80.95	79.08	1.34
450–500 m	48.67	50.67	64.96	76.46	66.19	62.96	1.29
500–550 m	43.82	47.15	55.28	52.03	46.97	57.60	1.31
550–600 m	42.25	41.25	43.01	42.51	35.29	46.74	1.11
600–650 m	47.44	39.51	69.27	47.98	62.24	60.58	1.28
Over 650 m	31.23	39.50	34.41	36.37	19.07	18.38	0.59
Marginal					49.55	55.66	

  

Companies according to the altitude	Assets in mil. CZK						Index
	1995	1996	1997	1998	1999	2000	2000/1995
Production	90.61	86.42	100.34	101.69	111.69	103.37	1.14
450–500 m	77.01	79.88	99.45	102.46	86.79	93.53	1.21
500–550 m	66.00	76.79	90.72	83.06	85.30	87.72	1.33
550–600 m	70.96	72.95	77.94	82.32	59.61	80.27	1.13
600–650 m	75.12	70.48	121.59	83.19	94.73	105.78	1.41
Over 650 m	53.47	55.41	53.83	61.99	118.15	26.71	0.50
Marginal					81.62	88.38	

  

Companies according to the altitude	Total assets turnover ratio						Index
	1995	1996	1997	1998	1999	2000	2000/1995
Production area	0.650	0.700	0.683	0.718	0.725	0.765	1.18
450–500 m	0.632	0.634	0.653	0.717	0.763	0.673	1.06
500–550 m	0.662	0.632	0.609	0.626	0.551	0.657	0.99
550–600 m	0.601	0.565	0.552	0.516	0.592	0.582	0.97
600–650 m	0.634	0.560	0.569	0.577	0.657	0.573	0.90
More than 650 m	0.582	0.713	0.639	0.587	0.161	0.688	1.18
Marginal area					0.607	0.630	

Source: Sample research of agricultural companies in 2000

During the monitored period, the average agricultural company volume of revenues in production areas was higher than that in marginal areas; the same holds true for the growth rate of revenues. In 2000, the volume of revenues in marginal areas reached only 70.04% of the volume in production areas. The growth rate in 2000 is by 23 points lower in marginal areas to compare with that of 1995.

In 2000, the average agricultural company volume of assets in production areas was 103.37 mil. CZK. The volume of assets in marginal areas was 88.38 mil. CZK and reached 85.50% of the volume of assets in production areas. Lower volume of assets in marginal areas shows that these companies are smaller but, on the other hand, the dynamism of their growth rate is higher than the dynamism of the growth rate of revenues and therefore the assets turnover ratio is lower. In 2000 – in production areas, 765 CZK of the revenues were reached per every 1 000 CZK of assets; in marginal areas it was only 630 CZK. To compare the data of 1995 with that of 2000, we can see that more than a half of production area companies reached 118% of assets turnover ratio but for mar-

ginal area companies, this velocity fell in more than a half of the companies. The turnover fall is, above all, linked to the existing extensive production which requires higher costs and can be interpreted as an important reason why the economic development of these companies is not so successful.

In the structure of revenues (Table 6) in production area the orientation towards plant production has been increasing since 1995. In 1995, plant production represented 29.25% of the total structure; in 1996 it was 30.44% and in 2000 41%. The growing proportion of plant production in production areas increases the economic sensitivity of the companies to the price development of plant production, especially of cereals. The proportion of revenues from livestock production in production areas is of a slightly decreasing tendency. In 1995, the proportion of revenues from livestock production was 55.45%, in 1996 it was 48.9% and in 2000 it was 45%. Reduction of livestock production in marginal areas enables the companies to specialize better in livestock production. In production areas, revenues from non-agricultural activities have slightly decreased; in 1995, an average

Table 6. Agriculture company revenues – structure

Category	Number of companies	Revenues from plant production (%)		Revenues from animal production (%)		Non-agricultural revenues (%)	
		1999	2000	1999	2000	1999	2000
Production areas	34	31	41	53	45	16	14
450–500 m	17	29	34	57	57	14	11
500–550 m	19	31	28	58	58	11	14
550–600 m	16	29	32	56	55	15	13
600–650 m	9	25	26	54	60	21	14
Over 650 m	3	11	14	79	80	10	10
Marginal areas	64	28	30	57	58	15	13

Source: Sample research of agricultural companies in 2000

company's revenues represented 15.30% of the total; in 1996, it was 17.61% and in 2000, it was 14%.

Plant production shows a certain variability in the proportion of total revenues and it should settle between 28–30%. In 1995, the proportion of plant production was 27.39%, in 1996 it was 33.86%, in 2000 it was 30.0%. The crucial factor for the marginal areas economy is the proportion of livestock production, which has been increasing steadily since 1995 (1995 – 48.29%, 1996 – 55.20%, 1998 – 48%, 2000 – 58%). The increasing proportion of livestock production has been connected with the fall of revenues from non-agricultural activities. This fall was remarkable especially in 1996. In 1995, the revenues from non-agricultural activities covered almost one third of the agricultural company revenues (27.03%), in 1996 the volume of these revenues fell to 17.41% and the following slight decrease continued until 2000 when it was 14%. The effort of the agricultural companies to orientate their production towards the agricultural production and thus to reduce their diversification in production hardly reflects the tendencies of the EU to strengthen the value added tax preferably in the sphere of manufacturing.

#### THE AVERAGE NUMBER OF EMPLOYEES, PRODUCTIVITY OF LABOUR AND WAGES

In 2000, the average number of employees in production and marginal areas (Table 7) decreased slightly to compare with the data of 1999. In production areas, the average number of employees fell to 96% and in marginal areas to 94.87%. The development of the average number of employees in marginal and production areas was different.

In production areas, the number of employees was rising since 1995 till 1997. In 1997, this number reached its maximum, the basic index of 1995 being 148.88%. From that time till 2000, a steady decrease can be seen. The basic index which compares the year 2000 and 1997 equals to 71.64%, the index which compares 2000 and 1995 equals to 106.66%. In respect to 1995, the average number of employees in an agricultural company has increased absolutely by 6 employees, relatively by 6.66 points.

In marginal areas, the number of employees was decreasing in most intervals. In 2000, the average number of employees was 74, i.e. by 22 employees less than in production areas.

The level of the productivity of labour in the monitored period can be characterized by two different time segments. The first one is the period 1995–1997, the second one 1997–2000. The first time segment is characterized by the productivity of labour 400 000–500 000 CZK, (with some exceptions of 500 000–600 000 CZK). Also the annual growth is relatively small. The second period is characterized by a considerably higher productivity of labour: 600 000–800 000 CZK and in 2000: 700 000–840 000 CZK. The productivity of labour is an important indicator which shows that an important change is under way in the particular monitored period. In production areas, the growth rate of the productivity of labour was 175.27%, in marginal areas, it was 159.34%. The lower growth rate in marginal areas was probably caused by the decrease of revenues in agricultural companies.

The dynamism of the average annual volume of wages development per an employee is considerably slower. In 1995, the average annual volume of wages in production areas was 79 368 CZK, in marginal areas 74 000–82 000. In 1997 and in the following years the volume of wages grew distinctively. In 2000 the annual remuneration was 127 990 CZK in production areas and 123 990 CZK in marginal areas.

If we compare the indexes of the productivity of labour and of the average wages, it is obvious that the productivity of labour has been growing more rapidly than the volume of annual wages. In production areas, the productivity of labour index was 175.27%, the average wages index was 161.26%. The productivity of labour index was by 14.01 points higher to compare with the average wages index. In marginal areas, the productivity of labour index was 159.34% and the average wages index was 157.58%. The productivity of labour index was by 1.01 point higher. The fact that the productivity of labour growth rate was higher than the volume of average wages contributed to a considerable reduction of the cost

Table 7. The average number of employees, productivity of labour, wages

Category of the company	Revenues (including financial and extraordinary revenues)					
	1995	1996	1997	1998	1999	2000
Production area	42 045	42 834	85 889	72 554	80 954	79 082
450–500 m	48 674	50 670	54 606	73 464	66 190	62 955
500–550 m	43 806	47 135	59 827	52 015	46 970	57 603
550–600 m	42 246	41 249	40 190	42 503	35 292	46 742
600–650 m	47 443	39 506	49 629	47 982	62 242	60 582
Over 650 m	31 216	39 504	34 465	36 368	19 068	18 375
Marginal area					49 552	55 660
Category of the company	Volume of wages					
	1995	1996	1997	1998	1999	2000
Production area	7 106	7 450	14 220	14 210	11 736	16 828
450–500 m	8 639	9 440	10 064	11 317	9 545	12 420
500–550 m	7 011	8 165	12 632	8 978	9 162	13 102
550–600 m	7 458	7 410	8 269	6 600	7 294	9 492
600–650 m	7 167	7 567	9 400	11 154	12 362	16 336
Over 650 m	5 246	6 968	6 871	7 198	3 652	4 388
Marginal area					8 906	12 227
Category of the company	Average number of employees					
	1995	1996	1997	1998	1999	2000
Production area	90	79	134	108	100	96
450–500 m	105	99	95	100	78	75
500–550 m	89	90	126	83	81	79
550–600 m	95	83	81	65	66	57
600–650 m	90	85	97	105	117	100
Over 650 m	71	78	76	68	30	26
Marginal area					78	74
Category of the company	Productivity of labour (thousands CZK)					
	1995	1996	1997	1998	1999	2000
Production area	469.62	542.61	642.38	612	808	822
450–500 m	464.22	512.72	572.64	834	845	839
500–550 m	492.86	523.72	476.33	611	580	731
550–600 m	444.41	496.97	492.74	770	536	824
600–650 m	526.85	464.77	510.35	641	553	605
Over 650 m	440.78	506.46	505.14	575	636	702
Marginal area					632	755
Category of the company	The average annual volume of wages per 1 employee					
	1995	1996	1997	1998	1999	2000
Production area	79.368	94.44	106.35	129.79	117.14	127.99
450–500 m	82.400	94.74	105.54	112.42	121.78	132.53
500–550 m	78.876	90.23	100.58	106.73	113.11	121.93
550–600 m	78.453	81.90	101.58	100.49	110.70	119.76
600–650 m	79.590	89.02	96.66	106.10	105.79	119.91
Over 650 m	74.077	65.36	96.49	105.59	121.73	117.02
Marginal area					113.63	123.99

Source: Sample research of agricultural companies in 2000

Table 8. Technical equipment, and capital efficiency – the average agricultural company

Category of the company	Capital efficiency					
	1995	1996	1997	1998	1999	2000
Production area	1.13	1.34	1.32	1.20	1.32	1.323
450–500 m	1.10	0.98	1.02	1.21	1.35	1.189
500–550 m	1.11	1.06	1.09	1.12	0.94	1.081
550–600 m	0.97	1.16	0.94	0.98	1.18	1.139
600–650 m	1.01	1.21	0.91	1.06	1.01	0.987
Over 650 m	0.89	0.86	0.94	0.90	0.33	1.111
Marginal area					1.07	1.106

Source: Sample research of agricultural companies in 2000

revenue, which can be interpreted as one of the important economic effects of an agricultural company.

#### **TECHNICAL EQUIPMENT AND CAPITAL EFFICIENCY – THE AVERAGE AGRICULTURAL COMPANY**

Renewal and renovation of the buildings and technologies and higher concentration of the companies are the factors that increase the volume of tangible investment assets. In production areas, the average volume of tangible assets is 59.787 mil. CZK while in marginal areas, it is 50.304 mil. CZK. We can see a stable growth in production areas. In 2000, the growth rate was 131.08% to compare with 1995; it slowed down in 1999 and was 101.47%. In 1995, the growth rate in marginal area, in dependence on the altitude, was relatively high (116.90–168.05%). The higher the altitude, the slower the growth rate. To compare with 1999, the growth rate is lower and equals to 108.72%. The relative age of tangible assets was stable in both areas. In the production area, this age equals to 43.20%, in marginal to 44.52%. If tangible assets are not considerably restored and renovated, about 50% of tangible assets will be depreciated within a short time. To reduce the relative age by 1% means to invest 2.093 mil. CZK into an agricultural company every year; this fact corresponds to the average annual growth of the tangible assets which is 103.72%. From this point of view, the average reproduction rate of the tangible assets in either area is inadequate (with several exceptions).

The dynamism of the development of the technical equipment is, in comparison with the dynamism of development of the tangible labour assets, much faster. From the analysis of the labour technical equipment, it can be derived that the labour technical equipment index equals to the quotient of the tangible assets index and to the average registered number index. If the labour technical equipment index grows faster than the tangible assets index, the average number of employees must decline. Almost in all cases the labour technical equipment index is higher than the tangible assets growth. Thus the

growth of the labour technical equipment depends on the growth of the tangible investment assets, as well as on the average number of employees.

In 2000, the capital efficiency of an average production area agriculture company reached 1.323 CZK, e.g. the revenues reached 1 325 CZK per every 1 000 CZK of tangible assets. To compare these data with those of 1995, capital efficiency increased by 1.17 times; to compare it with 1999 it increased only by 0.22 points. In marginal areas, capital efficiency is considerably lower and equals to 1.106. To compare with 1999, capital efficiency increased only by 3.35 points (Table 8).

#### **LIABILITIES STRUCTURE – THE AVERAGE AGRICULTURAL COMPANY**

Volume of assets of an agricultural company has been increasing thanks to the following two factors – the rise of prices and the enlargement of the agricultural company revenues (Table 9 and 10).

In comparison with 1995, the volume of assets in production areas increased to 114.08% and equalled to 103.370 mil. CZK. The development of assets and debts can be also classified as a positive one – in 1995, external debt contributed to the total capital by 57.16% and in 2000 the external sources contributed to the total capital only by 43.27%. The fact that the contribution of equity has been rising is definitely positive and enables the company to be more financially independent. The reduction of debt also results (at a high interest rate) in reduction of farm costs.

For marginal areas agricultural companies, the absolute value of the assets is smaller, nevertheless, it shows a greater time-dynamism during the monitored period to compare with production areas. In 1995 the average agricultural company assets in marginal areas were 68.558 mil. CZK and in 2000 they increased to 88.382 mil. CZK. The property of an agricultural company in marginal areas equalled to 85.5% of that in production areas. The property growth index compared with that of 1995 equalled to 128.91%, which is 14.83 points more than in production areas. In 1995 the share of external sources in



Table 9. Liabilities structure in thousands CZK – the average agricultural company

Indicator	Production area (thousands CZK)					
	1995	1996	1997	1998	1999	2000
Liabilities – total	90 610	86 421	100 343	95 284	111 693	103 370
Equity	37 400	34 015	47 463	43 475	49 226	57 790
Debt	51 799	51 921	52 408	51 348	62 467	44 733
Indicator	Marginal area (thousands CZK)					
	1995	1996	1997	1998	1999	2000
Liabilities – total	68 558	71 867	92 314	91 683	81 624	88 382
Equity	24 780	15 237	37 555	39 630	35 909	44 091
Debt	43 517	56 216	54 344	51 523	45 715	43 970

Source: Sample research of agricultural companies in 2000

Table 10. Relative liabilities structure in thousands CZK – the average agricultural company

Indicator	Production area (%)					
	1995	1996	1997	1998	1999	2000
Liabilities – total	100	100	100	100	100	100
Equity	41	39	47	46	44	56
Debt	59	61	53	54	56	44
Indicator	Marginal area (%)					
	1995	1996	1997	1998	1999	2000
Liabilities – total	100	100	100	100	100	100
Equity	36	21	41	43	44	50
Debt	64	49	59	57	56	50

Source: Sample research of agricultural companies in 2000

the total property was 64%. Till 2000, it fell by 24 points and equalled to 50%.

#### DEBT STRUCTURE – THE AVERAGE AGRICULTURAL COMPANY

Long-term debts from restitution prevail in the structure of total debt (Table 11). These obligations equal to 40.34% in production areas and to 58.64% in marginal areas. Short-term debts, e.g. debts resulting from commercial relations, equal to 26.77% in production areas and to 17.74% in marginal areas. Bank credits of an average production area agricultural company equal to 13.113 mil. CZK and make up 29.31% of the total debts; in production area, they equal to 9.033 mil. CZK and make up 21.18% of the total debt. Quite a large amount of bank credits is one of the decisive factors that causes high losses from financial transactions and thus influences considerably the economic result for the accounting period. For example, if the average interest rate is 6.798%, the above mentioned volume of credit in production areas requires nearly one million CZK to pay off the inter-

est (890 024 CZK) and 614 000 CZK in marginal areas. If the profit/assets rate is lower than the interest rate, the financial lever works in an unfavourable way and only a targeted help from the Support and Guarantee Agricultural and Forestry Fund can provide sufficient sources to use these credits effectively.

Long-term bank credits prevail in the structure of bank credits (Table 12). These credits are linked to investment activities of agricultural companies. In production areas, the volume of these bank credits equals to 8.413 mil. CZK and the credits represent 64.16% of the total company bank credit. In 2000 the average amount of long-term bank credits in marginal areas was 7.353 CZK and equalled to 80.84% of the total company bank credit. High proportion of long-term bank credits indicates that the loss from financial activities will be of long-term character.

Current credits are another very important component; in 2000 they equalled to 4.556 mil. CZK and represented 34.75% from total credits. In marginal areas, the average amount of these credits reached 1.548 CZK and represented 34.75% from the total credits. In marginal areas the average credit was 1.548 million CZK and they represented 17.49% from the total credits. On one hand, short-term

Table 11. Debt structure – the average agricultural company

Category	Number of companies	Debt			Reserves		Long-term debt		Short-term debt		Bank credits	
		1000 CZK	1000 CZK	%	1000 CZK	%	1000 CZK	%	1000 CZK	%	1000 CZK	%
Up to 450 m	34	44 733	1 599	3.58	18 045	40.34	11 976	26.77	13 113	29.31		
450–500 m	17	46 310	1 503	3.25	25 209	54.43	5 990	12.93	13 609	29.39		
500–550 m	19	43 782	888	2.03	24 139	55.13	10 485	23.95	8 270	18.89		
550–600 m	16	39 552	860	2.17	25 612	64.76	6 758	17.09	6 322	15.98		
600–650 m	9	52 681	192	0.36	34 873	66.20	9 634	18.29	7 982	15.15		
Over 650 m	3	15 593	1 136	7.29	7 703	49.57	1 171	7.51	5 556	35.63		
Marginal areas	64	43 326	958	2.21	25 531	58.93	7 803	18.01	9 033	20.85		
Total	98	43 814	1 180	2.69	22 933	52.34	9 251	21.11	10 449	23.85		

Source: Sample research of agricultural companies in 2000

Table 12. Bank credits structure – the average agricultural company

Category	Number of companies	Bank credits							
		total		long-term		current account		short-term	
		1000 CZK	1000 CZK	%	1000 CZK	%	1000 CZK	%	
Up to 450 m	34	13 113	8 413	64.16	4 556	34.75	144	1.10	
450–500 m	17	13 609	10 937	80.37	2 556	18.78	115	0.85	
500–550 m	19	8 270	7 530	91.05	740	8.95	0	0.00	
550–600 m	16	6 322	4 149	65.63	2 064	32.64	110	1.74	
600–650 m	9	7 982	6 508	81.54	955	11.97	518	6.49	
Over 650 m	3	5 556	5 556	100.00	0	0.00	0	0.00	
Marginal areas	64	9 033	7 353	81.40	1 549	17.15	131	1.45	
Total	98	10 449	7 721	73.89	2 592	24.81			

bank credits improve the company liquidity, on the other hand, they are a considerable interest-burden. At the average interest rate of 6.798% the financial costs are higher by 309 000 CZK in production areas and by 105 000 in marginal areas.

### THE AVERAGE AGRICULTURAL COMPANY LIQUIDITY

The company liquidity describes the ability to fulfil its short-term obligations. Usually two indicators are used to express the liquidity: current liquidity and quick test.

$$\text{Current liquidity} = \frac{\text{Current assets}}{\text{Current liabilities}} = \frac{\text{Balance sheet (row 021)}}{\text{Balance sheet (row 084)}}$$

$$\text{Quick test} = \frac{\text{Current assets} - \text{Inventories}}{\text{Current liabilities}} = \frac{\text{Balance sheet (row 021)} - \text{Balance sheet (row 022)}}{\text{Balance sheet (row 084)}}$$

In production areas, the quick test results have been changing considerably since 1996 and in marginal areas since 1997. Till this time, the quick test was completely insufficient. The liquidity indicator was lower than 1.0, which means, that the agriculture companies without credits were not able to fulfil their obligations. Since 1996 in production areas and since 1997 in marginal areas the liquidity has been sufficient. The liquidity of 2000 in production areas fell from 1.284 (1999) to 1.225. In marginal areas the liquidity is higher – in 1999 it was 1.395 and in 2000 it was 1.582. Higher level of liquidity in marginal areas is probably linked to greater proportion of livestock production and to regular payments from the manufacturers. High volume of short-term bank credits can be seen as an important factor to ensure the liquidity.

On the basis of long-time series, it is possible to suppose that the standard value of current liquidity equals to three. It means that the current assets are, in average, three times as high as short-time obligations. Higher value of liquidity means that the company has a surplus of current assets; the contrary – its lower value can evoke shortage in inventories. Higher value of short-time liquidity in production areas (the value of about 4) is probably

Table 13. Liquidity – the average agricultural company – production and marginal areas

Indicator	1995		1996		1997	
	marginal area	production area	marginal area	production area	marginal area	production area
Current liquidity	2.16	2.49	2.48	3.60	4.11	3.03
Quick test	0.66	0.96	0.77	1.38	1.40	1.05
Indicator	1998		1999		2000	
	marginal area	production area	marginal area	production area	marginal area	production area
Current liquidity	4.65	3.05	3.714	3.009	4.019	3.191
Quick test	1.73	1.08	1.395	1.284	1.582	1.225

Source: Sample research of agricultural companies in 2000

linked to the storage of market products at which higher seasonal price can be expected (Table 13).

## CONCLUSION

In 2000 agricultural companies experienced some positive tendencies of development. In 2000, companies both in production and marginal areas had a positive economic result for the accounting period. This was the first year when a positive economic result was reached in production areas and it is a question whether this positive tendency will continue. In marginal areas, this is the result of a longer positive tendency. The profit from operation activities is worsened by the loss from financial transactions, which will be – due to high indebtedness – of a long-term character. The revenues of an average agricultural company in production areas have had an increasing tendency and they seem to influence positively also the assets turnover ratio. In marginal areas, the revenues growth is slower and negatively influences the assets turnover ratio. High productivity of labour on one hand and a low average annual remuneration on the other hand have a double-dealing influence. On one hand, this relation results in low working cost and on the other hand, this relation deepens the income disparity between agriculture and other branches of national economy. The capital efficiency is higher than 1. Its dynamism in 1995–2000 was slower than the labour technical equipment, which is influenced by a lower pace of productivi-

ty of labour to compare with the labour technical equipment. Better labour technical equipment was a result of lower dynamism of development of registered number of employees to compare with long-term investment assets; this fact probably lead to its lower exploitation. In this sense, we can say that many agricultural companies are over-invested. Long-term and short-term credits load agricultural companies highly and influence considerably and unfavourably the loss from financial transactions and thus the development of economic result. The good economic result of 2000 indicates a positive turn in the economy of agriculture companies, but it is not enough to ensure the prosperous and successful reproduction of agricultural companies.

## REFERENCES

- Synek M. a kol. (1992): Business Economics. Aleko, Praha.  
 Střeleček F., Kollar P., Lososová J., Kopta D. (2002): Degrees of Costs Effectiveness. *Agricultural Economics*, 48, (4): 145–154.  
 Report on the State of Agriculture of the Czech Republic in 2001 (2001). Ministry of Agriculture of the Czech Republic, Praha.  
 Statistical Yearbook of the Czech Republic (1996–2001). Czech Statistical Office, Praha.

Arrived on 18<sup>th</sup> December 2001

### Contact address:

Prof. Ing. František Střeleček, CSc., Ing. Pavel Kollar, Jihočeská univerzita v Českých Budějovicích, Zemědělská fakulta, katedra účetnictví a financí, Studentská 13, 370 05 České Budějovice, Česká republika  
 e-mail: strelec@jcu.cz, kollar@zf.jcu.cz