The analysis of financial situation of agricultural enterprises in productive and marginal conditions with the use of non-financial indicators

Analýza finanční situace zemědělských podniků hospodařících v produkčních a v marginálních podmínkách s využitím nefinančních ukazatelů

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Abstract: The paper is focused on the evaluation of the development of financial situation of agricultural co-operatives in the Czech Republic in 1997–2000 operating in both productive and marginal regions. The comparison of financial situation in these two groups of agricultural firms comes from the classification of firms according to productive regions. Presented results cover firms from the sample of agricultural firms observed in the RIAE Praha. Development tendencies of agricultural co-operatives in these two regions are analysed by means of chosen debt, liquidity, activity and profitability indicators. Non-financial indicators enlarging the above mentioned characteristics of firms' financial situation are suggested and analysed in the last part of this paper.

Key words: agricultural enterprises, financial situation, liquidity, activity, profitability, non- financial indicators

Abstrakt: Příspěvek se zaměřuje na posouzení vývoje finanční situace zemědělských družstev České republiky v letech 1997 až 2000 hospodařících v produkčních a marginálních oblastech. Porovnání finanční situace u těchto dvou skupin zemědělských podniků vychází z členění podniků dle výrobních oblastí. Výsledky jsou zpracovány za podniky z testovacího souboru zemědělských podniků sledovaných ve VÚZE Praha. Pomocí vybraných ukazatelů zadluženosti, likvidity, aktivity, rentability jsou analyzovány vývojové tendence zemědělských družstev v těchto dvou oblastech. V příspěvku jsou dále uvedeny nefinanční charakteristiky rozšiřující hodnocení finanční situace zemědělských podniků.

Klíčová slova: zemědělské podniky, finanční situace, likvidita, aktivita, rentabilita, nefinanční ukazatele

INTRODUCTION

Financial situation belongs to the key characteristics of position of every entrepreneurial object. A basic instrument for cognition of the firm's financial situation is financial analysis. It can be considered as one of the main instruments of financial management, because financial management uses its results. For evaluation of financial situation, financial analysis uses different types of financial characteristics. Their disadvantage consists of marginalization of other (non-financial) characteristics. Therefore, it is suitable to combine numerical values of financial models with non-financial criteria. This method should be used in both agricultural and non-agricultural institutions that have some impact on outcomes of agricultural enterprises. For a longer time, there are found differences between financial situation of enterprises operating under productive and marginal conditions. Reasons causing these differences are analysed in this paper.

OBJECTIVES AND METHODOLOGY

The paper deals with comparison of financial situation of agricultural enterprises in the CR operating in productive and marginal regions during 1997–2000. The comparison of financial situation of companies in productive and marginal regions comes from the firms classification according to production regions: corn growing, sugar beet growing and potato growing region represent companies operating in productive regions and potato-oats growing and montane region represent firms operating in marginal regions. From the productive regions, there were chosen agricultural co-operatives and individual farmers operating in sugar beet region and from the marginal regions, there were chosen agricultural co-operatives and individual farmers operating in potato-oats region. The base data come from the file of test firms of the CR, the so called sample FADN, which is annually observed by the RIAE Praha and the Ministry of Agriculture CR. The to-

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tal number of respondents in this sample includes 1,218 legal entities and individuals, from that 276 agricultural co-operatives, that cultivate 43.04% from the total agricultural land area cultivated by agricultural co-operatives. From the total number of responding agricultural co-operatives, 78 co-operatives operate in sugar beet growing region, 67 co-operatives operate in potato-oats growing region and 15 in montane region. Agricultural land area of the respondents represents 31.51% in the sugar beet growing region, 23.64% in potato-oats growing region and 4.16% from the agricultural land area of the selected file co-operatives in montane region. Individual farmers' file includes 633 respondents with the average land area 119 ha. The respondents operated on 9.13% of the total agricultural land area in CR, from that number, 135 respondents operate in sugar beet growing region (50.37% of total selected file of individual farmers area). Marginal regions are represented by potato-oats region with 72 respondents (10.2%) and montane region with 29 respondents (5.43%)

Indicators that are used for the evaluation of financial situation of agricultural companies have the following testifying ability:
– indicators 1–6 characterise liquidity of a firm,
– indicators 7–10 characterise indebtedness of a firm,
– indicators 11–15 characterise activity of a firm,
– indicators 16–18 characterise profitability of a firm.

RESULTS AND DISCUSSION

The financial situation of agricultural co-operatives operating in productive and marginal regions is caused by many factors, which are reflected in the level of reached economic results. The action of these factors can be expressed by various indicators. First group are the indicators of liquidity. In Table 1, there are listed as indicators No. 1–6. Indicators of liquidity of 1st and 2nd degree show a low payment ability of agricultural co-operatives. In years 1998 and 2000, there is a significant improvement of these liquidity indicators in co-operatives operating in marginal regions, contrary to productive regions. It is the result of the improving situation of co-operatives operating in the LFA, as is shown in Table 2, when the change in the subsidy distribution system in 1998 changed their financial situation. An interesting attribute for agricultural co-operatives operating in marginal areas is the decreasing share of accounting receivables in current assets, contrary to the co-operatives operating in productive regions, where this share is fixed for the mentioned years. Liquidity of 2nd degree could be overvalued by impregnable claims.

Liquidity of 3rd degree, formulated as the ratio of total current assets and short term debts, reached favourable values with increasing tendencies. It is necessary to evaluate, which assets are really beneficial for the payment ability of a company.

The share of stocks in current assets shows, that a large share of current assets of agricultural co-operatives are stocks, which are the less liquid part of current assets. The real liquidity is also influenced by the stocks structure and its real evaluation.

Second group of indicators are indebtedness indicators, which measure the range of foreign capital financing, including the measure of long term debt and loan debt. In the observed file of agricultural co-operatives,

Table 1. Idicators of financial situation of agriculture co-operatives in productive and marginal regions

No.	Indicator	Beet growing region				Potato-oats growing region			
		1997	1998	1999	2000	1997	1998	1999	2000
1	Liquidity 1st level	13.52	19.03	16.08	20.77	12.27	20.05	21.94	31.12
2	Liquvidity 2nd level	82.01	83.66	85.79	103.45	58.1	97.31	82.3	118.01
3	Liquvidity 3rd level	213.09	223.38	204.06	241.84	210.55	294.88	249.99	331.14
4	Share of book-debts in fl. assets	31.08	28.22	31.42	30.14	20.44	24.74	22.32	22.06
5	Share of stock in fl. assets	61.51	62.55	57.96	57.22	72.4	67	67.08	64.36
6	Net working capital	53.07	55.23	50.99	58.65	52.51	66.09	60	69.8
7	Share of corporate stock	42.7	42.32	44.26	51.79	34.68	42.69	38.12	43.28
8	Indebtedness	57.3	57.68	55.74	48.21	65.32	57.31	61.88	56.72
9	Long-term indebtedness	40.18	41.29	38.69	32.91	49.76	45.92	48.89	46.52
10	Credit indebtedness	32.08	28.51	27.75	20.17	31.72	21.88	25.31	20.78
11	Stock turnover	2.41	2.48	2.64	2.67	1.89	2.26	2.15	2.13
12	Turnover time	149.08	144.98	136.47	134.68	190.21	159.04	167.82	169.2
13	Turnover of the total capital	0.57	0.6	0.56	0.6	0.46	0.55	0.52	0.53
14	Turnover time of the total capital	1.76	1.67	1.79	1.65	2.15	1.83	1.93	1.9
15	Average collection time	75.33	65.41	73.98	70.93	53.71	58.72	55.84	58
16	Margin of corporate stock	–7.58	–1.91	–0.35	4.81	–7.77	3.48	–4.05	4.09
17	Margin of total capital	–3.17	–0.79	–0.15	2.44	–2.65	1.46	–1.49	1.71
18	Cost margin	–4.74	–1.13	–0.23	3.54	–4.59	2.28	–2.33	2.67

Table 2. Operation subsidies for agriculture co-operatives in production regions (in CZK/ha)

Indicator	Maize		Beet		Potatoe		Potato-oats		Montane	
	1998	1999	1998	1999	1998	1999	1998	1999	1998	1999
Operation subsidy	668	822	947	1 415	1 055	1 406	1 318	1 473	4 184	3 096
Economic result lowered by subsidies	–466	–1 080	–1 638	–2 356	–892	–2 069	–805	–1 764	–1 942	–2 740

Source: Annual Report of Czech Agriculture 1999, MZe CR, Prague

the large rate of indebtedness is caused by long-term debts, which come from the debts to entitled persons in transformation of agricultural co-operatives.

Decreasing tendencies toward marginal conditions are observed also at the level of total capital, caused by the decrease of equity and corporate stock. There is a significant tendency of structural change of capital toward foreign capital.

Long-term indebtedness is not changed in co-operatives operating in the productive regions, an exception is the year 2000. Interesting is the decreasing tendency of long-term indebtedness in co-operatives operating in marginal regions, which also caused the total indebtedness rate and increased the rate of self-financing.

Loan indebtedness is the highest in 1997, in the years 1999 and 2000, it decreased to 20%. In co-operatives of both regions, there is positively reflected the operation of the Support and Guarantee Farm and Forestry Fund.

The structure of assets, which influences the value of liquidity indicators, is also closely related to utilisation efficiency of individual components of the co-operative assets. There are indicators of activity, which can tell us, whether the level of individual assets is in an appropriate ratio to the present or future activities of company. Table 1 shows the tendency of reducing turnover time and also total assets. In the co-operatives of productive regions, these indicators are significantly better, than in the marginal regions. Turnover time is by 35 days shorter and total assets turnover time by 0.25 years shorter in the years 1999 and 2000. Interesting is the indicator of average collection time, which shows reduction. Co-operatives operating in productive regions have a longer collection period by 10–12 days in the years 1999 and 2000, than co-operatives in marginal regions.

The influence of debt, liquidity and activity indicators is shown in profitability indicators. Profitability is the ability of a company to create new sources, to crate profit with the use of invested capital. Agricultural co-operatives in both regions do not show any significant tendency in the observed period, the loss culminated in 1997. Table 2 shows impact of operation subsidies for agricultural co-operatives in the years 1998 and 1999 according to the production region. The table shows, that co-operatives operating in sugar-beet growing region, which is the base for measuring agricultural co-operatives operating in productive regions, created loss even with received subsidies. In potatoes-oats growing region and also in montane growing region, which are the base

Table 3. Idicators of financial situation of individual farmers in productive and marginal regions

No.	Indicator	Beet growing region				Potato-oats growing region			
		1997	1998	1999	2000	1997	1998	1999	2000
1	Liquidity 1st level	33.2	274.87	32.23	67.75	10.59	32.75	16.59	46.79
3	Liquidity 3rd level	142.76	628.25	205.61	292.05	54.87	240.72	143.53	277.4
4	Share of book-debts in fl. assets	47.43	17.81	36.77	28.67	47.66	13.64	15.3	13.13
5	Share of stock in fl. assets	29.31	38.44	47.55	48.13	33.04	72.76	73.14	70
6	Net working capital	77.24	89.97	76.91	86.63	70.05	90.51	84.11	91.85
7	Share of corporate stock	66.91	83.66	74.66	80.67	64.45	73.29	65.86	81.83
8	Indebtedness	33.09	16.34	25.34	19.33	35.55	26.71	34.14	18.17
9	Credit indebtedness	31.33	16.38	20.79	14.67	17.52	23.08	20.47	10.65
11	Stock turnover	14.51	4.95	4.88	4.69	10.65	2.64	1.92	1.9
12	Turnover time	24.81	72.66	73.76	76.79	33.79	136.58	187.65	189.83
13	Turnover of the total capital	0.76	0.41	0.53	0.54	0.48	0.48	0.4	0.35
14	Turnover time of the total capital	1.32	2.45	1.88	1.84	2.08	2.1	2.5	2.88
15	Average collection time	40.15	33.67	57.04	45.75	48.75	25.6	39.26	35.61
16	Margin of corporate stock	8.7	1.02	2.02	3.92	3.64	2.6	2.93	4.04
17	Margin of total capital	5.82	0.85	1.51	3.17	2.35	1.91	1.93	3.31
18	Cost margin	8.31	2.13	2.91	6.18	5.13	4.17	5.08	10.54

for measuring agricultural co-operatives operating in marginal regions, the economical result is also loss in both years after subsidies deduction. Indicator margin of corporate stock is –0.35% at co-operatives in productive regions in 1999 and in marginal regions –4.05%. From profitability indicators, there is evident disparity at agriculture co-operatives in both regions in 1998 and 1999, which was influenced by subsidies. Subsidies per hectare of agriculture land in 1995–1997 were in average 555–606 CZK, in 1999 they were 1 501 CZK and in 2000 the amount was increased almost 1.6 times to 2 346 CZK. Year 2000 belonged to significantly profitable years for agricultural companies in both regions.

It is possible to say, when we review liquidity indicators (shown in Table 3) of *individual farmers* operating in marginal regions (in potato-oats growing region), that they do not achieve the level of farmers operating in productive areas. Especially the farms in montane region are at a very low level of 1st and 2nd degree liquidity. When we compare them with legal entities in marginal regions, we find out a reverse situation with individual farms operating in marginal regions. Extremely high liquidity indicators in 1998 at individual farms in productive regions were caused by the 3–4 times higher level of financial assets in comparison with other years.

Debt indicators are not different between individual farms operating in production and marginal regions. The long-term debt indicators (No. 10) are not observed at individual farms because of their extremely low level.

Activity indicators show some differences between productive and marginal regions. For example, time turnover for companies operating in productive regions is 77 days and for companies operating in marginal regions 190 days in 2000. It is the same for the indicator turnover time of total assets. A very different situation is observed for the average collection time, when companies operating in marginal regions collect payments in 36 days and companies operating in productive regions in 46 days.

Profitability indicators are in favour of individual farms operating in marginal regions. In the overall view of the financial situation of individual farms operating in productive and marginal regions, it is possible to mention, that most of indicators in marginal regions are lower, worse, than it is at individual farms operating in productive regions, except for profitability indicators.

Use of non-financial indicators for evaluation of agriculture companies

Financial analysis is done by the means of financial indicators coming from economic data. The disadvantage of financial indicators is marginalizing of non-financial aspects of the evaluated subject. All decisions done by management are shown as a change of economical data, certainly with some time delay. Therefore, it is necessary to combine numerical values of financial indicators with non-financial indicators.

Problems of non-financial indicators was dealt by Argenti, who set up a combined model, called A-score. It evaluates lacks in firm management, lacks in accounting, mistakes, which were scored by points and score 25 was set up as a critical level for firm bankruptcy.

While dealing with the problems of non-financial indicators, we also suggested evaluating management opinion for firm management, data of employees development and their qualification, data of loans use and also evaluation of IS in company and its use in financial decision-making. These problems of non-financial indicators were expressed by 61 questions and the research was done in the form of questionnaire in 30 agricultural companies (legal entities). The selected set included productive and marginal regions. 21 companies represented productive region, other 9 companies represented marginal region. 20 companies are focused at combined agricultural production and other 10 companies are focused on plant production or animal husbandry. Out of 30 companies, 22 are focused on other secondary production, mostly services to other agricultural companies, citizens, non-agriculture companies. Out of these 22 companies, 11 want to sustain, 9 to increase and 2 to reduce the secondary production.

In the individual companies of the observed file, there are employed 5 to 527 full time employees and the ownership structure is 1 to 1800 members, shareholders and partners. In agricultural co-operatives, there are employed in average 121 employees, 63% out of this figure are members, in the limited liability companies 20 employees, 30% out of this figure are partners, and in the joint-stock companies 127 employees, 69% out of this figure are shareholders. Management is done in 24 cases by owners and in 6 cases by hired managers with or without ownership share. It signals the importance of ownership relations in agricultural companies (legal entities) and also the high qualification level of managers.

In other part of research of non-financial indicators we focused on managers‘ opinions. Most of the respondents in agricultural companies were represented by economists. Questions were focused on goals of enterprise, main criteria for decision-making including changes in the range of enterprise and the enterprise structure, necessity of cooperation with other agricultural companies, situation according to suppliers of inputs and other present problems. Most of the companies see their goal in securing stable company development regardless of the recent situation in agriculture. Other optimistic goal is securing an adequate income for employees. The average monthly income in companies included in the observed file was 9 654 CZK. There are no significant differences according to different business forms. There is a higher income for managers. Some of the data are presented only for limited liability companies, it is 13 000 CZK most of the respondents did not answer this question. The presented average income is far bellow the state average, which also shows the status of agriculture. In decision-making about extending the range of enterprise activities, the companies mostly express a better use of the existing long-term assets, in hope of reaching higher profit and coping with the competition. Companies

agreed with restricting the range of enterprise activities after the long-term loss. Managers of agricultural companies are not afraid of long-term indebtedness, low quality of labour, lack of labour (however, some companies alerted to this problem). Companies are forced to decision-making about production structure by the constant adaptation to market conditions, natural conditions and production diversity linked with decreasing of entrepreneurial risk. Cooperation with the surrounded agricultural companies is considered by most of the companies as a foregone conclusion (27 out of 30 companies). The main cooperation is aimed toward machine use, mainly harvest machinery, sale of agricultural products and common purchase of machinery.

The main evaluated problems were:
– long collection time
– financial indebtedness
– difficult leviability of law
– low profitability
– lack of young qualified labour and managers
– high financial inputs for production, low sale prices of agriculture products.

Some of the problems refer to the state and development of labour force in agriculture companies and their qualification. Most of the companies are still considering to lower the number of employees, if they need to get new employees, there is no problem. Qualification of top managers in 70% of respondents is university education and over 5 years of working experience, in 27% of respondents it is high school education and also over 5 years of working experience.

22 companies in the observed sample (over 80% of joint stock companies and also limited liability companies and 54% of agriculture cooperaives) requested bank loan in years 1997–2000. Bank loan was received by 17 companies, as shown in Table 4. Out of the total number of 30 companies, there did not answer 5 companies. Number of bank loan requests was multiple in some companies. 3 companies did not request bank loan at all. A lot of companies repeatedly requested short term bank loans. The bank loans payback period is between 1 and 8 years. They are mostly bank loans with payback period between 4 and 6 years. Most of the companies from the observed sample payback the loans in time or according to the adjusted

Table 4. Use of loans and credits in agriculture enterprises

Characterization	Form of enterprise			In total
	co-operative	limited liability company	joint-stock company	
Request for bank loan in years 1997–2000				
Loan requested	6	4	12	22
Loan received	5	2	10	17
Loan not received	1	2	2	5
No viewpoint	5	1	2	8
Situation of received loans and credits				
Specification in means of use	X	X	X	X
Specification in means of maturity time	X	X	X	X
Pay off in last year				
Pay off (interest, principal) in time according to timetable	4	2	9	15
Pay off is late or partial at:	1	0	1	2
– principal	1	0	1	2
– interest	0	0	0	0
Loan is not paid off at all	0	0	0	0
Bank loan coverage				
Long term assets	5	1	10	16
Fl. assets	0	1	0	1
No viewpoint	0	0	0	0
Reasons why enerprises do not pay off loans				
– late payments from customers	0	0	2	2
– unfavourable development of large projects	0	0	0	0
– high costs	0	0	0	0
– other reasons	1	0	0	1
No viewpoint	0	0	0	0
Use of leasing financing				
No	7	1	5	13
Yes	4	4	9	17

Table 5. State and use of firm IS in financial decision-making

Characterization	Form of enterprise			In all
	co-operative	limited liability company	jiont-stock company	
What kind of information source do you have for financial decision-making				
Do you elaborate and use CASH FLOW				
– biannually	3	1	1	5
– quarterly	1	0	2	3
– monthly	3	0	10	13
Do you elaborate financial analysis for your decison-making				
– ad hoc	2	2	2	6
– regularly	5	0	11	16
D*o you have system of managerial accounting*				
– yes	10	2	13	15
– partialy	0	2	0	2
– no	1	1	1	3
Are financial plans formed in the company				
– systematically	4	0	10	14
– partialy, sometimes	4	5	4	13
– not at all	3	0	0	3
Other information for accounting statement in the observed period				
Overview of account receivables maturity:				
– short term account receivables after maturity period	7	5	7	19
– short term account receivables in maturity period	4	0	7	11
Overview of debts maturity:				
– short term debts after maturity period	6	3	8	17
– short term debts in maturity period	5	2	6	13
Factual content of long term debts:				
– long term debts from privatization of state land and property	0	1	0	1
– long term debts from transformation of agricultural cooperatives	5	3	4	12
– other long term debts – borrowed property from transformation of agricultural cooperatives	1	0	2	3
State of property claims settlement with entitled persons from transformation:				
– state of property claims settlement	5	4	x	9
– state of property claim settlement agreement with entitled persons	6	1	x	7

schedule. The loans are guaranteed by fixed assets and by SGFFF. The companies argue with late payments from customers when the loans are not paid back in time. Almost 57% of companies also use leasing financing while purchasing machinery and agriculture technologies.

Table 5 shows data about information systems and its use in financial management. It is noticeable that not all of the companies use cash flow sheets regularly in 3 months or shorter period. Ordinarily they use their own system for financial decision-making.

CONCLUSION

It can be stated, that financial situation of agricultural co-operatives operating in marginal conditions has, especially in 1998–2000, significantly improved in liquidity, indebtness and activity indicators. First and second degree liquidity indicators are even better in co-operatives operating in marginal than in productive regions in the observed period. Profitability indicators in agricultural co-operatives are in both regions negative, although in 1998 and 1999, there is obvious the negligible importance of subsidies for agricultural companies. The year 2000 was profitable for agricultural co-operatives. Profitability indicators reached 4–5% in both regions. Evaluating general financial situation of individual farmers operating in productive and marginal regions, it can be stated that most indicators in marginal regions reach lower values than in productive regions except of profitability indicators. For agricultural firms' evaluation, there

is necessary to use, in addition to financial indicators, also other non-financial indicators that complement the general view of the company or group of companies. Regarding these facts, it is necessary to further deepen arrangements of agricultural policy in these fields.

REFERENCES

Jánský J. (1999): Porovnání finanční situace zemědělských družstev a akciových společností v zemědělství ČR. Zemědělská ekonika, *45*, (9): 405–409.

Jánský J., Živělová I. (2000): Vývoj ukazatelů finančního hospodaření zemědělských družstev České republiky. Zborník vedeckých prác z mezinárodných vedeckých dní 2000. Nitra, s. 301–308.

Jánský J. (2001): Finanční hodnocení zemědělských podniků ČR. Sborník z mezinárodní vědecké konference Mezinárodní vedecké dny 2001. Nitra, FEM SPU, s. 849–855.

Annual report of Czech Agriculture (1997,1998,1999,2000). MZe CR, Prague.

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