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FINANCIAL HEALTH OF AGRICULTURAL ENTERPRISES IN THE ORGANIC FARMING SECTOR

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Abstract

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The present research was aimed at evaluating the economic performance of organic farm enterprises (legal entities) in the Czech Republic on the basis of their production base and financial health. The evaluation was carried out by means of specific financial indicators. The results recorded in the organic farming sector were confronted with those of the conventional agriculture. It stemmed from the analysis that conventionally farming legal entities, as opposed to the organically farming ones, tend to have higher average assets per hectare of farmland. Secondly, as for the structure of assets, fixed assets prevail substantially over current assets. Organic farms, on the contrary, have a significantly higher average value of external financial resources per hectare of farmland. In order to evaluate the financial health of organic farms, their economic results were used; firstly in absolute value (including per hectare calculation) and then within the individual ratios. The analysis showed that 84.4% farms of the sample were profitable as long as subsidies were included in the yields. While excluding subsidies from the calculations, an overwhelming majority of enterprises (95.3%) recorded a loss. Comparing the per hectare economic results, higher average profit rates were recorded for organic farms. Furthermore, financial health of the enterprises was analyzed by means of selected indicator ratios. Concrete results, including the respective commentaries, can be found in the present paper too.

The findings presented in the paper were obtained as a result of the Research Program titled *"Economy of the Czech Agriculture Resources and Their Efficient Use within the Framework of the Multifunctional Agri-food Systems"* of the Czech Ministry of Education, Youth and Sports number VZ MSM 6046070906.

financial health, financial analysis, economic result of an enterprise, organic farm enterprises, conventional farm enterprises, legal entities, ratios

The importance of economic sustainability has been significantly increasing in today's globalized and highly competitive entrepreneurial environment. To survive in the ever-changing business world and to be financially healthy are two essential objectives for each and every enterprise in all fields of economic activity. This applies in particular to agricultural enterprises the position of which is quite exclusive (arising from the production process and market process specificities). The necessity of using effectively all resources (human, information, financial etc.) and applying financial management methods aimed at competitiveness and financial health is indisputable.

Financial health is paid substantial attention to in the scientific world, both on a theoretical and practical level. Many authors are dedicated to defining financial health and specifying its methods of measurement, e.g. Brealey and Myers (2003), or Blaha and Jindřichovská (2006), Grünwald and Holečková (2007), Kalouda (2009), Sedláček (2001), Wagner (2009) etc. in the Czech Republic.

Kalouda (2009), for instance, defines financial health as a logical intersection of profitability and liquidity. According to Grünwald and Holečková (2007), financial health is expressed by expectations concerning the level to which an enterprise would be able to meet its liabilities to investors and creditors in near future (within one year). Financial health denotes the resistance level of corporate finance to operational risks in a given financial situation (at a given rate of financial risk security).

The above-mentioned authors use not only the financial analysis methods but as well more complex models based on a discriminant function that can reveal potential financial difficulties of an enterprise. Kouřilová (2010), Kopta and Kouřilová (2008), Šarapatka and Urban (2006), Živělová and Jánský (2005) and others deal with the application of these theoretical methods and approaches on concrete agricultural enterprises (both organic and conventional).

However, monitoring financial health of organic farms is more complicated than monitoring the health of conventionally farming enterprises due to a limited data base in this sector. State authorities strive to support economic viability of organically farming enterprises (Action Plan for Organic Farming Development in the Czech Republic in 2011–2015, 2010). Nevertheless, they have not been monitoring it so far and the research in this domain is quite limited to smaller samples provided by own surveys of the fore-mentioned authors. The existing state-managed databases (Ministry of Agriculture of the Czech Republic, Institute of Agricultural Economics and Information - Division Brno) mostly lack relevant economic data. The data for organically farming enterprises are monitored and recorded only to limited extent while the main focus is on their production base or market characteristics. The Institute of Agricultural Economics and Information (IAEI) in Prague, is aimed at detailed economic categories in the FADN (*Farm Accountancy Data Network*) network. Unfortunately, the FADN database (aggregate database of both conventional and organic enterprises) comprises only about 8 % of organic farms.

A vast room for further economic evaluation of the organic farming sector certainly exists and offers many challenges. The present research strives to reflect this reality and provide a financial health analysis of organic farms (within the biggest sample ever) based on chosen financial analysis ratios. The research results were confronted with those of the conventional agriculture. The sample was composed solely of legal entities (with regard to a limited data base) as they are obliged, unlike natural persons, to publish their financial statements in the Collection of Documents at the Registration Court (even if this duty is often ignored).

The main research objective was subdivided into the following aims:

- evaluating the production base of organically farming enterprises (legal entities) on the basis of assets and assets coverage per hectare of the farmland;
- financial health analysis of organic farms (individual forms of legal entities) on the basis of chosen financial ratios.

MATERIAL AND METHODS

In order to evaluate financial health of the organic farm enterprises, the following sectional data were used:

- financial statements of 128 organic farms (legal entities) as at 31st December 2008 – the data were retrieved from the Creditinfo database – Company Monitor (Creditinfo Czech Republic, Ltd.);
- publicly available database of the Ministry of Agriculture of the Czech Republic – A List of Organically Farming Enterprises as at 31st December 2008.

The sample of organic farms represented 33.4 % of the total basic number of legal entities.

Apart from the above-mentioned data, additional data (enterprise size, area of farmed land, information on combining organic and conventional farming) have been verified by the author of this paper [by means of on-the-farm inquiries or telephone surveys within the development of map portal of organic farms in the Czech Republic – Vaněk *et al.* (2010)] and then confronted with publicly available databases. A range of complementary resources has been used, especially the FADN database, the database of the Institute of Agricultural Economics and Information (IAEI) – Division Brno and the public land register LPIS (*Land Parcel Identification System*).

The following analytical tools and methodology have been applied to meet the main objective:

- document analysis aimed at mapping the possibilities and approaches to evaluation of financial health, the production base of the enterprises and at evaluating the results of previous economic research in the organic farming sector;
- economic data analysis – on the basis of corporate financial statements;
- application of chosen financial analysis ratios (the choice was limited not only by the database as such but as well by the possibility to draw a comparison between and among the production systems) within the framework of elementary technical analysis methods;
- comparison of the data and chosen ratios – within the framework of the individual kinds of legal entities in organic farming and between the two farming systems;
- synthesis in which the findings were processed and evaluated.

The software used – the calculations were performed in MS Excel 2007.

RESULTS AND DISCUSSION

In the first part of the research, the production base of the organic farm enterprises (legal entities) was evaluated using the criterion of assets (total assets per one hectare of farmland, current assets per hectare of farmland) and assets coverage per hectare of farmland (equity capital per hectare of farmland, debt capital per one hectare of farmland). Table I below shows the average figures for these ratios within the individual kinds of organic farm enterprises (legal entities), the whole organic farming sector and the conventional farming sector.

It stems from the above table that legal entities farming conventionally have higher average *assets per hectare* than the organic farms. Organic farm enterprises in general reach lower figures even if there are distinct differences among the individual kinds of enterprises. The highest figures were recorded by joint-stock companies (significantly higher than average values in conventional agriculture). As for the *structure of assets*, fixed assets are valued more than current assets in conventional farming.

As far as the *capital structure* is concerned, we can again observe significant differences among the individual kinds of organic farm enterprises. However, we can state that the organic farms generally evince higher average volume of external financial resources per hectare than conventional enterprises.

In general, the property endownment reflects the overall financial capacities of agricultural enterprises (both equity and debt). The endownment in the organic farming sector is, in spite of a generally higher external resources share per hectare, lower. Higher share of external financial resources can be explained by higher volume of investments into quality technical background (farm buildings, accompanying buildings) that is vital for meeting strict environment protection standards.

In order to evaluate financial health of the organic farms, their *economic results* were used; first in *absolute value* (including per hectare calculation) and then within indicator ratios (see Table II).

Absolute value of the economic result is influenced by both costs and yields. The yields level is, for organically farming enterprises in particular, [according to many authors e.g. Hrabalová and Zander (2006) or Šarapatka and Urban (2006)] considerably dependent on operational subsidies[1]. That is why the economic result has been recorded variantly as follows:

- economic result as a difference between total revenues (including subsidies or more precisely other operation revenues) and total costs;
- economic result as a difference between total yields (excluding subsidies, or rather other operation revenues) and total costs.

The share of profit-making and loss-making farms has been monitored for both variants of the economic result in the enterprise sample. It stems from the analysis that out of all 128 organic farms, 84.4% (108 farms) recorded a positive economic result. However, this result was conditioned by including subsidies in the total yields. While excluding subsidies from the calculations, a vast majority of enterprises (95.3% – 122 farms) recorded a loss. The above-mentioned data clearly imply the ultimate dependence of enterprises on the subsidies. The subsidies constitute substantial financial resources that actively influence economic results of the farms, resources without which most enterprises would be in a loss. Within the present sample, the subsidies represented 48% (average value) of the total yields.

We have to mention here that these results show only the situation of agricultural enterprises under the form of legal entities, i.e. enterprises that, compared to natural persons, farm significantly bigger areas of agricultural land (reflected as well in higher subsidies for the farm) but usually offer

I: *Production base of organic and conventional farm enterprises (legal entities) in 2008*

Ratios	Units Czech crowns .ha^{-1}	Organic farming					Conventional farming
		Cooperatives	Joint-stock company	Limited liability companies	Other	Legal entities total	Legal entities total
Assets total	Kč.ha^{-1}	42,127	113,632	72,605	33,471	77,317	83,853
Fixed assets	Kč.ha^{-1}	24,211	71,719	35,792	11,869	41,312	59,431
Current assets	Kč.ha^{-1}	17,295	39,447	35,025	21,534	34,202	24,422
Equity capital	Kč.ha^{-1}	26,441	66,314	19,491	17,356	28,889	60,697
Debt capital	Kč.ha^{-1}	15,436	46,328	52,554	15,987	47,822	23,155

Source: own elaboration, based on the Creditinfo and FADN databases

1 Operational subsidies include, apart from organic farming subsidies within agro-environmental measures, other agro-environmental subsidies, the Single Area Payment Scheme (SAPS), TOP UP, Less Favoured Areas (LFA) payment scheme etc.

II: *Economic results of organic and conventional farm enterprises (legal entities) in 2008*

Ratios	Units	Organic farming					Conventional farming
		Cooperatives	Joint-stock company	Limited liability companies	Other	Legal entities total	Legal entities total
Profit	Thousands CZK	3,345	–972	1,935	1,640	2,327	-
Profit	CZK.ha^{-1}	3,068	–846	3,422	2,461	2,577	2,152
Return on total capital	%	7.20	0.88	7.84	9.99	6.52	2.32
Cost effectiveness	%	–2.96	13.93	–21.95	20.59	–12.92	-
Total liquidity	x	6.06	2.84	3.6	12.27	3.81	-
Indebtedness	%	35.51	44.06	57.58	42.15	52.96	27.61
Interest coverage	x	19.56	9.81	11.90	9.97	12.14	-
Total assets turnover	x	0.24	0.54	0.27	0.32	0.32	0.40

- data not available
Source: own elaboration, based on the Creditinfo and FADN databases

a narrower range of customer-centred activities. The author of this paper estimates that, as a result, subsidies represent a higher share in their yields. It would be highly interesting to monitor as well the enterprises of natural persons as these are usually smaller farms (family-run farms) that, apart from the production function, are much more focused on other activities (accommodation, on-farm sale etc.). Therefore, the income from their own activities represents - in relation to subsidies – a higher share of the total farm incomes. The database, however, did not enable us to do so.

The significance of subsidies can be illustrated as well by Šarapatka and Urban (2006) for instance who affirm that organic farms are highly dependent on subsidies (accounting for 15–20% of their income). Without subsidies, some kinds of farms would cease to exist. The author of the present paper came to very similar conclusions (Brožová, 2009), confirming the importance of subsidies for both kinds of farms (legal entities and natural persons). These conclusions were reached by processing primary data provided by the Institute of Agricultural Economics and Information (IAEI) Brno within the framework of its statistical surveys (carried out as well for the sake of the EU and EUROSTAT) at farms. Inspectors delegated by the Institute of Agricultural Economics and Information addressed the agricultural enterprises enquiring about their economic results in 2008. The survey, however, was not focused on the exact economic results but on whether the enterprise in question recorded a profit or a loss. The survey showed that 80.8% farms out of the total number of the addressed agricultural enterprises (1,849) reached a positive economic result in 2008. Nevertheless, it was again the result including subsidies in the yields.

The *economic result* was subsequently calculated, for the purpose of comparison with the conventional farming, *per hectare of farmland*. Table II shows that the sample of organic farms reached a higher average profit rate (2,577 CZK.ha^{-1} farmland) than the conventionally farming enterprises (2,152 CZK.ha^{-1} farmland). When we take a closer look at the individual kinds of organically farming legal entities, we can see quite big differences. The highest profit was recorded by limited liability companies while joint-stock companies recorded a loss per hectare. The differences among the individual kinds of organic farm enterprises are not exceptional and it would be very difficult to give general reasons for them. The same or similar differences apply as well to different conventional enterprises. Anyhow, even if it is hard or nearly impossible to draw an objective comparison, we should have in mind the dissimilarities arising from different farming systems.

These should, as e.g. Kouřilová (2006) assumes, indicate lower production effectiveness due to riskier production in organic farming (resulting from strict norms, limited number of processors, tradability of commodities, objective risks etc.). The effectiveness per one hectare of farmland is on the contrary higher as a result of the above-mentioned subsidies and other well-known facts (higher retail price of bio-products and bio-food, activities diversification).

The last part of the research was aimed at evaluating financial health of the organic farm enterprises by means of financial ratios. These constitute the primary methodological tool and the core of financial analysis. A wide range of ratios has been developed while some of them differ from each other in minor modifications. In the course

of their practical use, a group of generally accepted ratios connected to economic and financial health of an enterprise has emerged. The following ratios have been adopted in order to assess financial health organic farm enterprises: total capital profitability, cost effectiveness, total liquidity, indebtedness ratio, interest coverage and total assets turnover. The choice of ratios has been limited by:

1. the data from financial statements (not all relevant indicators were available for all the entities - the Creditinfo database provides financial statements in full or abridged version);
2. indicators used in the Farm Accountancy Data Network (enabling comparison between organically and conventionally farming enterprises)

Average ratio values for the respective groups of enterprises are shown in Table II.

To express the appreciation rate of both equity capital and total capital, the *return on total capital ratio*, calculated as the ratio of the economic result to total capital, has been used. It would be suitable to use the economic result before tax (to prevent misinterpretation due to possible tax deductions from the tax base). Unfortunately, this figure was recorded only for 23 enterprises in the sample (i.e. 15% of the total number). Subsequently, the economic results after tax have been employed. It stems from the Table that the ratios recorded in the organic farming are significantly higher than the figures in conventional farming, not only for the average values within the legal entities total (6.52% in organic farming, 2.32% in conventional agriculture) but as well for the individual kinds of business entities, with the exception of joint-stock companies. These findings correspond with the above-mentioned results (including per hectare calculations) that also confirm higher effectiveness of the organic farming despite its higher risk rate. The reasons were mentioned above (subsidies, strike price, wider range of activities).

The second ratio illustrating the economic performance of an enterprise was its *cost effectiveness*. As this ratio has more modifications, we would recommend (with regard to double-entry accounting enterprises – the case of the monitored sample) to perceive it as the ratio of added value to the costs of goods sold, inclusive of production consumption. Comparison with conventionally farming enterprises was not possible at this point as it is not monitored by the FADN. The Table shows that, except for joint-stock companies and "other companies", the enterprises recorded negative values as a result of external consumption (material, energy, services) that exceeded the total yields in the period (i.e. negative value added).

Another ratio to be monitored was the *total liquidity* (it was again not possible to draw the comparison with conventional farming) that shows the ability of an enterprise to cover (by short-term financial assets, payables, and stock) its short-term debts (short-term liabilities, short-term credits and borrowings). The figures recorded for the individual kinds of organic farm enterprises (except for joint-stock companies) can be considered quite high. On one hand, higher figures can be perceived positively as they eliminate the risk of liabilities default. On the other hand, the means fixed in stock or payables do not bring any profit to the enterprise and therefore decrease its profitability. In this aspect, each enterprise deserves a specific solution and strategy based on the management attitude to risk-taking and profitability requirements.

Indebtedness ratio – ratio of debts to total assets – was chosen in order to evaluate enterprise assets financing. The ratios calculated for the individual groups of enterprises show (similarly to per hectare calculations) that the organically farming enterprises have a significantly higher share of external financial resources. The average recorded was almost 52.96% (limited liability companies even 57.58%) while the indebtedness of conventional farm enterprises was substantially lower (27.61 %). However, in the mid 90's their indebtedness was as well on a higher level (58 %). Since then, it has not stopped decreasing and is far below 50%. Higher share of external resources can on one hand point at a lower level of financial stability and higher risk rate. On the other hand, a certain rate of indebtedness can prove useful as it increases capital profitability. This indicator deserves to be seen more in depth, i.e. to be concerned with the structure of the resources, in other words with the share of reserves, long-term and short-term credit, liabilities etc. Nevertheless, this can be done within a single enterprise and not within the results of the whole sample. At this point, we have to content with stating the figures; bearing in mind that higher ratio can mean increasing capital effectiveness (reflected in the above-mentioned and commented total capital profitability).

The ability of an enterprise to cover the costs of external resources was expressed in the *interest coverage* ratio. This ratio shows the relationship between the profit before tax and interests paid (operating profit plus interests paid). The average value recorded by legal entities was 12.14. The differences among the individual kinds of organic farms are clear from the Table whereas the highest figures were recorded for the cooperatives (19.56). The comparison with conventional farming was not possible due to the fact that the FADN does not monitor it. In general, we can say that the values recorded for organic farm enterprises were quite high. Higher average figures show, in spite of higher external resources share, the ability of business entities to repay costs related to using external financial resources.

The last ratio to be adopted was the *total assets turnover ratio* (ratio of sales to total assets). This ratio indicates entrepreneurial activity and effectiveness of fixed and current assets appreciation. In accordance with higher assets volume per hectare in conventional farm enterprises, higher effectiveness of its use was recorded in this farming sector (with

an exception of joint-stock companies in organic farming). The latter effectiveness was expressed by higher coefficient of total assets turnover in comparison with the organically farming legal entities. This coefficient was however quite low. It means that the ratio of sales to the value of enterprise property is low, i.e. the property is used ineffectively in both sectors.

SUMMARY

To survive in the changing business environment and to be financially healthy are essential objectives to be met by all enterprises in today's globalized and highly competitive world. The scientific sphere pays substantial attention to financial health issues. The position of organic farm enterprises among business entities is very distinct and special. Monitoring financial health of these enterprises is however quite demanding due to an insufficient data base. The room for economic evaluation of this sector though remains open. The present research strives to reflect this reality and provide a financial health analysis of organic farms (within the biggest sample ever) based on chosen financial analysis ratios. The results were then confronted with those of the conventional agriculture. The sample was composed solely of legal entities (with regard to a limited data base). The analysis was based on cross-sectional data from the financial statements of 128 organic farms (legal entities). The sample of organic farms represented 33.4% of the total basic number of organically farming legal entities in the Czech Republic.

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