EVA and its Determinants for Selected Groups of Farms: Conventional and Organic Farming

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Anotace

Příspěvek se zabývá analýzou ekonomické přidané hodnoty a jejích determinant ve skupinách vybraných zemědělských podniků – právnických osob hospodařící konvenčním a ekologickým způsobem. Je řešen vliv vážených průměrných nákladů kapitálu na hodnotu ukazatele EVA a rovněž efektivnost využití investovaného kapitálu, včetně kapitálové struktury, ve vazbě na způsoby hospodaření. Příspěvek si rovněž klade za cíl ověřit hypotézu, zda jsou sledované podniky schopny bez dotační podpory, konkrétně přímých plateb, dosáhnout kladné ekonomické přidané hodnoty a efektivního využívání kapitálu.

Panelová data pro článek byla získána z databáze CreditInfo firemní monitor, poskytovaná společností CreditInfo Česká republika, s.r.o. Konkrétně byla využita data z účetních výkazů za roky 2006 – 2010 u vybraných podniků. Příspěvek je součástí grantového projektu IGA 20121069 „Identifikace hlavních determinant výsledku hospodaření zemědělských podniků právnických osob a určení jejich specifik“.

Klíčová slova

Ekonomická přidaná hodnota, kapitálová struktura, vážené průměrné náklady kapitálu, jednotná platba na plochu, kapitál, konvenční zemědělství, ekologické zemědělství.

Abstract

This paper analyzes the economic value added, as well as its determining factors, for selected groups of agricultural enterprises - legal persons, farming in conventional and organic ways. The impact of the weighted average cost of capital to the value of EVA, as well as the efficient use of invested capital, including capital structure, in relation to farming, are both evaluated. The article also aims to verify the hypothesis that selected farms are able to achieve, without subsidies, particularly direct payments, positive economic value added and an efficient use of capital.

The panel data set we use is drawn from the database of the Creditinfo Company Monitor, collected by Creditinfo Czech Republic, s.r.o. Specifically, we use information from the final accounts of chosen farms in the years 2006 - 2010. This paper is part of the research grant IGA 20121069, „Identification of the major determinants of the farm profits of legal persons and a determination of their specific characteristics".

Key words

Economic value added, capital structure, weighted average cost of capital, single area payment scheme, capital, conventional farming, organic farming.

Introduction

The current economic model has its roots in theories formulated by Smith as early as the mid-18th century (Dlouhý et al., 1992). People who have power and modern technology, enabling them to process and refine raw materials from natural sources, can produce surplus value and thus achieve higher living standards. Conventional agriculture is defined by a view of nature which conforms to the prevailing European view on the relationship between man and nature, namely, that man is superior to nature, and there is a clear boundary between man and nature. By contrast, alternative agricultural practices, which include organic farming, are dominated by the belief that natural laws governing organic production take precedence over economic goals. Organic farming favours agricultural systems that preserve natural resources.

The financial viability of organic farming has been

debated since its origins. Despite this uncertainty, there has been a steady, worldwide expansion of organic industries in recent years. Annual growth in the U.S. has exceeded 20 percent since 1992, while the European Union has seen a 25 percent increase each year (Lotter, 2003).

Many studies have compared the financial performance of conventional and organic farming systems in relation to income, prices, and costs. Other influential factors include the relative performance of one production area, farm size, and the understanding and application of economic principles. A summary is given in the following Table 1.

In conclusion, many studies have shown that organic farming can be a financially viable alternative to conventional farming practices for a range of circumstances and farming sectors.

Economic Value Added, being one of the most important indicators of business performance, should be regularly monitored and evaluated. In particular, this indicator plays an important role when comparing conventional and organic farming.

Economic Value Added (EVA) is used in the practice of economics for a wide range of activities. These activities include its use in managing and evaluating effectiveness and business performance, as well as its use for business valuation. The concept of EVA is not so new as it might seem. Its origin can basically be dated, in connection with the concepts of economic profit and economic value added, to the methodology of the 1950s, and even earlier.

The official creation and comprehensive management of the EVA concept can be attributed to the EVA consulting firm Stern Stewart & Company in the U.S., where EVA was constructed in the 1990s and subsequently registered under a trademark.

EVA is currently used for various purposes, one of which allows for its use as a tool of financial analysis, replacing the previously used indicators while overcoming their shortcomings, namely their inability to take into account the time value of money and the risk of investors, or affect the amount of gain. In financial analysis, such indicators mainly include various indicators of profitability.

In the Czech Republic, EVA is also used for a comparison of local companies carried out by the Czech Capital Information Agency (ČEKIA), a member of Bisnode.

Data and Methodology

This article aims to analyze EVA and its determinants for two groups of farms - legal persons, farming in organic and conventional ways. At the same time, it seeks to verify the following hypotheses:

Organic farming enterprises achieve better EVA values, and their capital structure is more efficient.

Organic farming enterprises are unable to reach positive EVA, even without the receipt of SAPS.

To meet this goal, or verify the defined hypotheses, as the case may be, EVA was used, and constructed using EBIT (Earnings Before Interest and Taxes) and WACC (Weighted Average Cost of Capital). Because legal persons were being evaluated, EBIT was subsequently adjusted each year by the corresponding rate of income tax. To determine the impact of direct payments on the amount of EVA, it was calculated by both - including and excluding direct payments, in EBIT and WACC. A generally known method, based on a definition of WACC using cost of equity and loan capital, was used in the article to calculate WACC.

The first evaluated group was represented by 10 farms (legal persons, organic farming) with the largest area of land (in 2010), and for which it was possible to obtain necessary data for the period 2006 - 2010. Specifically, these were companies with a land area of between 1,000 – 2,500 ha. The average size of organic farms decreased over the last three years by almost half (from 237 ha in 2007 to 127 ha in 2010). Most organic farms are represented by categories of businesses with an area of 10-50 hectares (35.4%). The number of organic farms with an area over 1,000 ha stagnated, while in the last two years, the number of farms over 2,000 ha fell by half (from 11 farms to 5). Organic farming enterprises were selected from the database of the Ministry of Agriculture, which provides a summary of the organic farmers in the country. Given the small sample of organic farmers in the FADN database and the five-year analysis period, the data were drawn from the CreditInfo Company Monitor database, which provides more current data.

The second group is represented by 10 enterprises - legal persons, farming conventionally. These companies were chosen in a similar land area to that of organic farms, so that the results would be comparable. For these farms, it was also possible to obtain financial statements for the period 2006 - 2010.

Factor	Author	Key fidings
yield	Morris (2001)	on average, the yields of organic crops have been reported as lower than conventional yields
	Mäder (2002)	results from a 21-year study of farming sectors in Central Europe found crop yields to be 20 per cent lower in organic systems
	Offerman a Nieberg (2000)	in a review of the relative yield performance of farming systems in 18 European countries,) showed that, despite the overall lower yields of organic farms, some individual crops had yields as high as or higher than nearby conventional reference yields
		organic livestock production levels per hectare are also generally lower than those of conventional farming systems although differences in per head production are minor
price	Offerman a Nieberg (2000)	reviewing prices in 18 European countries, found substantial variation amongst countries. They concluded that it is difficult to calculate an average organic farmgate price, even within a country, because there are a large number of sales channels for organic products (amongst which prices vary considerably) to which producers have unequal access.
		In most European countries the farmgate price for organically produced wheat has typically been 50 to 200 per cent higher than for conventionally produced crops, premiums for organic milk in Europe ranged from eight to 36 per cent, and prices for organic beef were in most cases on average 20 to 30 per cent higher than the conventional prices.
	Christensen a Saunders (2003)	found that retail prices for organic milk were 51 per cent higher than conventional milk prices in Nwe Zelend
cost	Morris (2001)	total costs for operating most organic farming systems are lower than those for comparable conventional farms, and there are differences in the relative importance of individual cost elements. The restrictions on the use of fertilisers, pesticides and feed concentrates on organic farms result in reductions in these costs of production
	Mäder (2002)	inputs of fertilizer and energy were 34 to 53 per cent lower and pesticide inputs 97 per cent lower on organic than conventional farms in 21 European countries
	Offerman a Nieberg (2000)	organically produced inputs, such as feedstuffs and seeds, often incur higher prices, reducing these benefits and, as inputs such as herbicides are replaced by labour in organic systems, wages and salaries are often higher under organic systems. Registration and certification fees are an additional fixed cost in organic farming.
profitability	Offerman a Nieberg (2003)	CAP measures such as compensatory payments, which are linked to production area rather than the amount of production, effectively reduce the difference between conventional and organic farm revenues. Profitability per hectare was generally lower on organic farms, although profits per family work unit were generally equal to or higher than those of comparable conventional farms.
	Tzouvelekas (2001)	organic profitability often depends on the application of knowledge of organic farming principles and techniques that optimise input–output ratios in production
	Lansik, Pietola a Backman (2001)	believe that organic farms are on average more efficient relative to their own technology, but use less productive technology than conventional farms

Source: Our own processing

Table 1: Studies comparing conventional and organic farming from different perspectives.

The panel data set used is drawn from the database of the Creditinfo Company Monitor, collected by Creditinfo Czech Republic, s.r.o., for selected enterprises. Specifically, the data used is from financial statements for the years 2006 - 2010 from selected enterprises, well as publicly available data from a database maintained by the State Agricultural Intervention Fund (SAIF), containing information about direct payments provided.

The area of individual companies was determined using a publicly available database maintained by the SAIF, which contains information about provided single area payments in agricultural subjects. On the basis of the ratio obtained of the SAPS subsidy per unit rate in a given year, an area of individual farms was defined. Selected farms were further tested and evaluated in terms of EVA as well as aspects that affect its size.

1. Economic Value Added

The economic value added (EVA) indicator and the basic idea that goes with it is not new. Alfred Marshall, the well-known Cambridge economist, talked about the idea of economic profit as early as the 1890s. This concept assumes that a firm is able to make a profit only if its income is large enough to cover its operating costs and capital costs (Young, 1997). In the twentieth century, this idea was then implemented under many names, including residual income[1] (Biddle, Bowen & Wallace, 1997). The concept of residual income is also based on economic value added.

Economic value added, as we now know it, originated in the USA, where it was developed in the 1990s by Stern Stewart & Company as a technique for measuring the value of a company and as a management tool (Deyá & Brusco, 2003). Basically, it is a very specific formulation of residual income, which has been used in the past (Lovato & Costigan, 2003). The basic concept of this indicator is based on the principle of economic income[2], which is achieved only if companies recover not only current costs but also capital costs. The EVA indicator is currently being examined by authors, among whom there are both supporters and opponents.

It is therefore evident that the cost of capital is one of the main determinants of this indicator (Sharma & Kumar, 2010), and that it greatly affects not only its value, but also the effectiveness of

financial resources in the enterprise. A prerequisite for achieving positive EVA is **effective capital spending**, i.e., with minimal cost. The agricultural sector, however, has a specific cost of capital which has not yet been resolved (particularly in terms of defining the cost of capital which was obtained in the form of non-investment grants). In the literature there are many approaches for the expression of EVA, and most of them have assumed a conversion in the view of the undertaking from the accounting approach to the economic reality approach (Pavelkova & Knapkova, 2005). EVA is then typically expressed using the following method of calculation (Kumar & Sharma, 2010):

$$EVA = NOPAT - (TCE \times WACC) \tag{1}$$

Where:

NOPAT = Net Operating Profit After Tax,

TCE = Total Capital Employed,

WACC = Weighted Average Cost of Capital.

This calculation method is based on net operating profit, known as NOPAT, which is reduced by the cost of the total invested capital. From the above it is clear that increasing the cost of capital results in a reduction of EVA, with the value of NOPAT unchanged.

For the purposes of this paper, and due to data availability, a different approach to calculating EVA was used. It is an approach that respects the "international" use of this indicator, based on EBIT (Earnings Before Interest and Tax). According to this principle, EVA is defined as follows (Petrik, 2009):

$$EVA = EBIT * (1 - SdpPO) - TCE * WACC \tag{2}$$

Where:

WACC = Weighted Average Cost of Capital,

EBIT = Earnings Before Interest and Tax,

SdpPO = Tax rate on a legal person's income,

TCE = Total Capital Employed.

1.1 Cost of Capital

In general, the cost of capital represents a very important indicator for the assessment of capital structure, or of effectiveness in the use of various sources of funding. It combines different sources of

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[1] Residual income is generally defined as after-tax operating profits less a charge for invested capital.

[2] Economic profit is seen by many authors in different ways. For the purposes of this paper and for further calculation of EVA, economic profit is expressed as the value EBIT * (1-t).

financing used in the enterprise. Proper adjustment of the capital structure is thus not a simple matter for the company, and in relation to the cost of capital, it is clear that decisions concerning the various sources of corporate finance, in particular, must be the deliberate, strategic decisions of management. The estimated cost of capital has been explored by a number of scientists (Pederson, 1993; Miller, 2009; Aleknevičiené & Jaktūnaité, 2007; Babusiaux & Pierre, 2009; Da, Guo & Jagannathan, 2011), who dealt with their definition as well as different approaches and methods for their calculation. The weighted average cost of capital is one way of calculating the cost of capital, and for the EVA calculation it represents a key determinant in the outcome of EVA. The most common method used in practice to calculate the cost of capital is the WACC method. The basic idea of this indicator is based on the weighted average of the already-taxed cost components of equity and debt, where the weights are represented by the ratio of equity and debt to the total capital structure of the enterprise (Pederson, 1998). The formula used for the calculation of WACC is then defined as follows (Miller, 2009):

$$WACC = w_d r_d (1 - t) + w_e r_e \qquad (3)$$

Where:

WACC = Weighted Average Cost of Capital

wd = weight of debt = (value of debt/value of debt + value of equity)

we = weight of equity = (value of equity/value of debt + value of equity)[3]

t   = tax rate on corporate income

re = weights, based on market values, frequently calculated as the risk-free rate plus a risk premium, based on the capital asset pricing model

rd = weights, based on the market, reflects the market rates on a firm's outstanding debt and on the rd of similar firms.

(1−t) = the standard treatment included in the WACC calculation to reflect the deductibility of interest payments. It is necessary to avoid double counting the tax "advantage" of debt.

2. Cost of Equity

Determining the cost of equity, when costs are largely determined by business risk, is one of the

most problematic parts of the WACC indicator. For the purposes of this paper, we have used a sophisticated method of determining the average cost, the so-called CAPM. According to the CAPM, the cost of equity is defined as follows:

$$r_e = r_f + \beta \cdot \left(r_m - r_f \right) \qquad (4)$$

Where:

r_f = risk-free rate – respectively, the appropriate rate of return on government bonds, treasury bills. The value of the risk-free rate of return was derived based on the value of the ten-year government bond yield in the years 2006 - 2010, using a database of the Czech National Bank - an ARAD time series database **(http://www.cnb.cz/docs/ARADY/HTML/index.htm).**

β = coefficient representing the degree of market risk through the balance and sensitivity to changes in a stock market portfolio. For the agricultural sector, this factor has been based on data available on the website Aswath Damoradan (**www.damoradan.com**), section „Updated data", Farms/Agriculture in Europe

$r_m - r_f$ = risk market premium – this value was also estimated on the basis of the above procedure for beta

3. Cost of Debt

The cost of debt (rd) is another important component of the WACC. Quantifying it is not as difficult as for the cost of equity, and it is possible to proceed in two ways. The first method is based on defining the cost of debt as the cost of the corresponding average interest rate (without a distinction between long-term and short-term loans) of non-financial enterprises, with the use of information from the Czech National Bank - time series database ARAD (http://www.cnb.cz/docs/ARADY/HTML/index.htm).

Both methods of calculating the cost of debt are considered to be costs that the company is obliged to pay to creditors, thereby reducing the business tax base. Therefore, the cost is adjusted in the calculation of WACC as follows:

The second method, used for the purposes of this paper, defines the cost of debt as a cost corresponding to the average interest rate, determined on the basis of the size and price of loans up to the present (Kislingerová, 2007). On

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[3] The sum of the ratio of debt to the total and the ratio of equity to the total is equal to 1 (wd + we = 1)

the basis of the data obtained, it was not possible to determine the volume of short- and long-term loans, and therefore these are calculated together as one item, bank loans:

$$i(r_d) = \frac{Interest\ Expense}{Bank\ Loans} \qquad (5)$$

According to this method, cost of debt is considered to be a cost that the company is obliged to pay to creditors, thereby reducing the business tax base. Therefore, the cost is adjusted in the calculation of WACC as follows:

$$N_{CK} = i(r_d) * (1 - d) \qquad (6)$$

Where:

NCK = Cost of Debt %

i (rd) = Loans Interest %

d = Tax rate on corporate income

4. Direct payments

The capital structure of individual companies, across sectors of the economy, has its own specifics with regard to the proportion of equity and debt. Subsidies, as an external source of financing, may be present in all sectors. Agriculture is unique in

this respect, and subsidies are a very important source of its corporate financing, whether by SAPS (Single Area Payment Scheme), the national additional payments TOP – UP, or grants related to capital business activity. SAPS can be considered an entirely specific source of funding; when this type of subsidy is provided, it is tied to the land area in hectares and to the farm used for farming, and is registered in the database of LPIS (Land Parcel Information System). No consideration in the form of interest is required for this source of funding. In terms of business economics, SAPS is reflected in operating income and affects the company's operating profit, and consequently its equity. Thanks to subsidies, there is some distortion of business profit from this point of view. Based on the reason given above, all calculations for the purposes of this article have been made in two versions, namely with and without SAPS, which represents the largest share of the grants obtained. Related items from the financial statements (operating income, operating profit, and equity), which enter the values of EVA and WACC, were reduced by SAPS.

Results and Discussion

Both groups of farms / legal persons were monitored for the years 2006 - 2010. Based on the financial statements, individual components of economic value added were evaluated according to the formula (2), both including and excluding direct payments
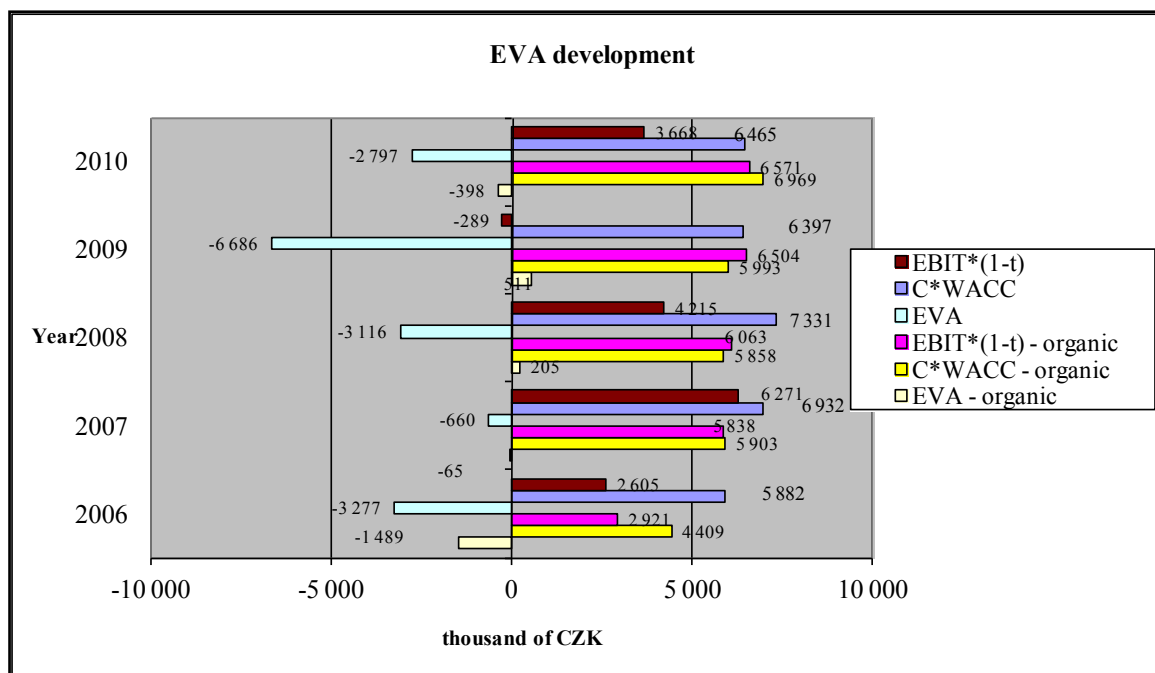
Source: Financial statements from the selected enterprises, and our own calculations

Graph 1: Development of EVA and its components (in thousands of CZK, 2006 - 2010) for the selected groups of enterprises.

WACC (in %)	Year				
	2006	2007	2008	2009	2010
Conventional farming	6.06	6.96	7.28	6.54	6.70
Organic farming	5.42	6.38	6.41	7.09	8.47

Source: Our own calculations

Table 2: Development indicators of WACC (in %, 2006 - 2010) for the selected groups of enterprises.

Indicator in thousand of CZK	Year				
	2006	2007	2008	2009	2010
Equity	45 500	53 561	58 914	60 512	63 250
Debt	44 012	44 322	41 098	33 648	37 317
Total Capital	89 512	97 883	100 011	94 160	100 567
Bank loans	10 023	10 707	10 675	7 618	12 923
Interests	227	388	355	362	364
Equity/Total Capital	0.39	0.46	0.53	0.59	0.64
Debt/Total Capital	0.61	0.54	0.47	0.41	0.36
EBIT	3 843	7 682	7 675	8 131	8 112

Source: : Financial statements from the selected enterprises, and our own calculations

Table 3: Development of selected indicators (in thousands of CZK, 2006 - 2010) for organic farming.

which companies have pursued. The first group consisted of conventional farming enterprises, and the second was a group of organic farmers. For a better interpretation of the subsequent results, the data from both sets of holdings were averaged.

Based on Graph 1 above, it is clear that the average EVA, calculated by formula (2) and using formulas (3, 4, 5, 6), for the reference period ranging from -1,489,000 to 511,000 CZK, is **demonstrably better** for the group of organic farmers. In this group, the group of organic farmers, the indicators show a growing trend by 2009, then a decrease in 2010, and even a regression to negative values that were seen in 2006. In terms of development over time, it can be stated that the lowest value of EVA was achieved in 2006 and the highest in 2009. The gradual improvement in the value of EVA over time was mainly due to improved business performance, which was reflected in EBIT * (1-t)[4], the overall development of invested capital, and of course the development of the individual determinants of WACC.

Regarding the development of **WACC for organic farmers**, it can be stated that in the first three years reviewed, that group treated capital more efficiently and **achieved better capital costs** than the group of conventional farmers (see Table 1). We can then

see the reverse development in 2009 and 2010, when financial resources were spent effectively by the group of conventional farmers. In terms of development over time, the lowest WACC was achieved in 2006 and the highest in 2010. The overall trend of the WACC indicator was **clearly increasing**, i.e., the efficiency with which various funding sources were spent declined. WACC growth was affected mainly by the cost of debt development and related developments in corporate tax, and also by the relative proportion of equity and debt - over time the proportion of equity to total capital increased, i.e., a decrease in „cheaper" debt capital and growth in „more expensive" equity.

The group of conventional farmers doesn't achieve positive EVA values (see Graph 1) for even one evaluated year, and it is thus possible to conclude that the performance of this group of companies **does not limit opportunity costs**, represented by WACC. This also reflects the inefficient use of financial resources or invested capital within firms. This is clearly evident from Graph 1, where EBIT and C * WACC are growing apart from each other; in 2009, EBIT *(1-t) is even negative. During the evaluated period, EVA for the group of conventional farmers is very unstable. The lowest value of EVA was achieved in 2009 and the highest in 2007. The development of these values was especially influenced by the high annual increase in capital invested in the evaluated enterprises (especially

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[4] The value of EBIT * (1-t) was affected by a change in corporate income tax. In the evaluated years 2006 - 2010, corporate income tax decreased from an original 24% to 19%.

Indicator in thousand of CZK	Year				
	2006	2007	2008	2009	2010
Equity	51 213	57 536	60 398	58 212	59 716
Debt	34 244	32 025	39 197	37 238	33 807
Total Capital	85 457	89 561	99 596	95 450	93 524
Bank loans	7 939	8 301	12 764	12 206	10 495
Interests	549	734	963	820	707
Equity/Total Capital	0.52	0.56	0.54	0.56	0.55
Debt/Total Capital	0.48	0.43	0.45	0.44	0.45
EBIT	3 428	8 252	5 335	-362	4 528

Source: Financial statements from the selected enterprises, and our own calculations

Table 4: Development of selected indicators (in thousands of CZK, 2006 - 2010), conventional farming.

between the years 2006 to 2008, see Table 3) and by the development of WACC, or the capital structure of the enterprises..

In terms of development over time, it can be stated that the lowest WACC value was achieved in 2010 and the highest in 2008. The development of these values was affected mainly by the development of the **costs of debt, which were more than twice as high in comparison with the group of organic farmers**, and also the relative proportion of equity and debt, where over time there was a decline in the share of equity to total capital, i.e., an increase in debt.

The development of economic value added is also connected with the development of the macro-environment. One should remember that when evaluating this indicator, the tendency of the rate of development, rather than absolute levels, is needed (Kislingerová, 2007). Apart from the last evaluated year, the developmental tendency of EVA for the group of organic farms can be characterized as improving. An opposite trend was observed for the group of conventional farmers; the EVA trends for this group were considerably more unstable and deteriorating, mainly due to the conflicting development of EBIT and total invested capital, and the inefficiency of capital utilization is obvious.

The above discussion should confirm the hypothesis that organic farming enterprises achieved better values of EVA in all the evaluated years. But the hypothesis that organic farmers use capital resources more efficiently, and thus with a lower cost, was not fully confirmed. This fact was only confirmed for the years 2006 - 2008, but over the next two years a more efficient equity portfolio was observed for the enterprises farming conventionally.

With regard to the calculation of economic value added without subsidies - which represent in the agricultural sector a very significant source of funding, affecting operating income and thus the company's own capital - it was clearly demonstrated that for both groups of evaluated companies there was a clear deterioration in EVA (see Graph 2). After the reduction of subsidies, positive results were seen in less than one year. This fact is the result of negative EBIT, which is insufficient to cover the cost of capital.

The results of the WACC indicators, excluding SAPS, caused a change in capital structure, namely a decrease in equity. This change resulted in reduced WACC values for both evaluated groups (except in 2010 for the group of organic farmers - see Table 5). This „increase" in efficiency in the use of capital resources was not enough to cover the loss in operating profit, which occurred just after the reduction in SAPS.

Regarding the impact of direct payments on individual types of capital, it can be stated that direct payments only affect the amount of equity because they enter into the enterprise as another source of their own financing (equity). They have a irreplaceable role in the farm economy, and without their help none of the evaluated groups of enterprises would have a positive EVA value. In addition, their impact on the company's capital structure affects the use of their own as well as external funds - for most of the evaluated enterprises it was shown that the values of WACC improved after excluding SAPS, demonstrating a more efficient use of capital.
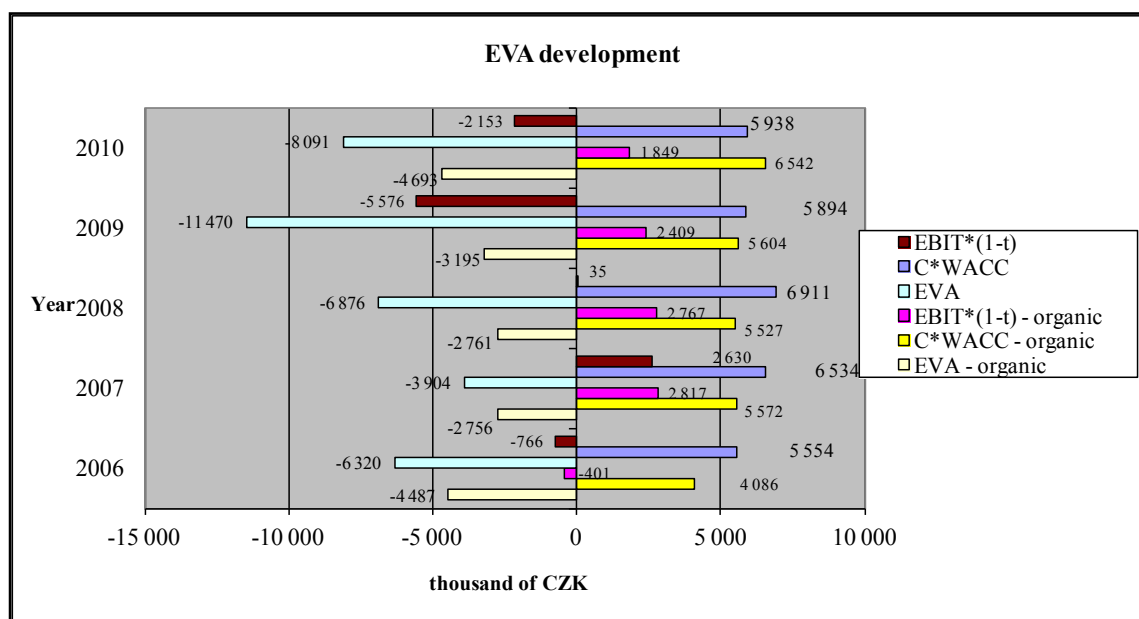
EVA development

Source: Financial statements from the selected enterprises, and our own calculations

Graph 2: Development of EVA and its components, without SAPS (in thousands of CZK, 2006 - 2010), for the selected groups of enterprises.

WACC without SAPS (in %)	Year				
	2006	2007	2008	2009	2010
Conventional farming	5.22	5.86	6.46	5.75	5.95
Organic farming	5.20	6.24	6.40	7.04	8.61

Source: Our own calculations

Table 5: Developmental indicators of WACC, without SAPS (in %, 2006 - 2010), for the selected groups of enterprises.

Conclusions

In terms of calculations and comparisons, the following conclusions can be made:

Based on the results, it can be stated that organic farmers achieved much better values of EVA. This is due mainly to improved business performance, characterized by a steady annual increase in EBIT in the evaluated years, 2006 - 2010. It is also attributable to the development of the individual determinants of WACC, namely the development of the costs of debt, which were significantly lower for the group of organic farmers than the group of conventional farmers. In terms of economic value added, there should be a greater possibility of achieving a better EVA value for organic farms. Organic farms generally have a higher ratio of subsidies to sales than conventional businesses.

With regard to capital structure - during the evaluated period the group of organic farmers saw an increase in their proportion of equity to total capital, i.e., a decrease in „cheaper" debt capital and a growth in „more expensive" equity.

The hypothesis that legal persons in organic farming have a more efficient capital structure was not confirmed. This group had a more efficient capital structure during the evaluated period of 2006 - 2010 and a lower value of WACC, recognized only in the years 2006 - 2008. In the subsequent evaluated years, WACC values for the group of organic farmers were higher than for the group of conventional farmers. The cost of debt, as one of the components of WACC, was calculated in this case as the average interest rate achieved by the company. The WACC result was largely influenced by making no distinction between the cost of interest on long- and short-term bank loans.

On the contrary, there was a clear confirmation of the hypothesis that direct payments, as an option for farm subsidies, affect the economy and business through their records as operating revenues reflected in equity, operating profit, and consequently EVA. Without direct payments, it is not possible for either group of evaluated companies to achieve a positive EBIT, and thus a positive EVA . Subsidies for farms are an important source of income.

The use of direct payments to finance the operation of farms, being a component of operating income, is reflected in the value of operating profit and „distorts" the actual business performance achieved. It then becomes a part of the company's capital, which affects the structure of financing and of course the cost of capital. This is a specific characteristic of the agricultural sector, the only one which has SAPS, since „without consideration" sources of funding are not taken into account in calculating WACC. To complete the WACC calculation, SAPS items should therefore be either completely removed from the sources of funding, or incorporated into a cost of equity folder with a separately assigned weight.

EVA and WACC are very valuable indicators of business economics and should be regularly used and evaluated in current economic practice, not only for managers but also for business comparisons.

Acknowledgement

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