# SELECTED EFFICIENCY FACTORS OF AGRICULTURAL SME IN THE CZECH REPUBLIC

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***Abstract:*** *This paper identifies the influence of selected groups of factors on the efficiency of the agricultural sector represented by the Czech Small and Medium Entrepreneurs (SME). The database Amadeus was used as the primary data source. The group of data gained from the database Amadeus covers the period of years between 2005 and 2014. The group of analyzed subjects consists of more than 2000 SME agricultural companies located in the Czech Republic. The econometric models were used for identification of relationships between groups of potentially relevant factors and the efficiency. The analyzed efficiency level is represented in the econometric models by the variables EBIT and EBITDA.*

***Key words:*** *Efficiency, Profit, Evaluation, SME, Agriculture, Farm, Econometric Models.*

***JEL classification****: H 25, D 22, M 41*

## Introduction

The paper is focused on important participants in regional development in the Czech Republic, on the agricultural small and medium enterprises (SME). The EU regional policy aim consists of jobs creation, higher competitiveness of companies, economic growth, sustainable development and improved quality of the citizens´ life (European Commission, 2016).

As the two main groups of incentives to regional development the exogenous and endogenous concepts can be considered. Endogenous development means the utilization of the local sources and local participants from both the private and the public sector (Bernard. 2010). Small and medium agricultural enterprises can be considered as the participant in the endogenous development process of the region as they utilize the internal force of the region - its resources (land) and its capacity (local human capital).

The aim of the article is to identify the influence of the selected group of factors on the efficiency of the Czech agricultural small and medium entrepreneurs during the period of years 2005 - 2014. The analysis is based on data available in the database Amadeus using the econometric modeling approach.

## 1 Statement of a problem

The assessment of economic performance of the Czech farms can be made on the basis of various criteria. Some authors focus on technical efficiency of farms. E.g. Bojnec and Latruffe (2013) in their article assess the technical efficiency and profitability of farms in Slovenia. Technical efficiency scores, labor productivity and total factor productivity are calculated for farms of different organizational forms in Moldova (Lerman, Sutton, 2008). Vasiliev et al. (2008) evaluated the total technical, pure technical and scale efficiency of Estonian grain farms in 2000-2004. Galuzzo (2015) analyzed technical and economic efficiency on Italian smallholders' family farms. Rezitis, Tsiboukas, Tsoukalas (2002) introduce the scale of technical efficiency of Greek farms at discrete points in time.

Gorton and Davidova (2004) specified the results of a study of economic performance of farms with regard to their size in six selected countries in Central and Eastern Europe. Jodkiene et al. (2013) in his article assesses the farms' economic viability of the new EU countries (EU-10), where one specific indicator was distinguished (production subsidies and the gross profit ratio).

In assessment of economic performance of agricultural enterprises are often used indicators of financial analysis and financial health. Selected indicators of financial analysis in evaluating economic performance of agricultural enterprises in the Czech Republic applies in his articles Střeleček, Lososová, Kopta et al. (2012) or Střeleček, Lososová and Zdeněk (2011). Usability of indicators of financial health assesses Kopta (2009), who in his article presents the possibilities how financial health indicators can be used both for the prediction of future value of agricultural holdings and for the prediction of the potential risk and dangers.

Kopta (2009), inter alia, argues that the explanatory power of most indicators of financial health when compared with the recommended value is limited; there are frequent extreme values of the non-standardized indicators. One of the potential problems in the economic evaluation of the performance of agricultural enterprises and the agricultural sector as a whole may be the source and veracity of data. Veveris e.g. (2008) in his study on agricultural sector in Latvia deals with assessment and possibilities of improvement of information and data sources for analysis in the agricultural sector.

## 2 Methods

The data for assessment was obtained from commercial database Amadeus. For performance assessment were selected Czech farms classified in categories (according to the database Amadeus) of Small companies and Medium sized companies. Companies reported in Amadeus are considered to be small (S) when they match at least one of the following conditions: Operating Revenue < 1 million EUR (1.3 million USD), Total Assets < 2 million EUR (2.6 million USD), employees < 15. Companies reported in Amadeus are considered to be medium sized when they match at least one of the following conditions: Operating Revenue < 10 million EUR (13 million USD), Total Assets < 20 million EUR (26 million USD), employees < 150. Companies with ratios Operating Revenue per Employee or Total Assets per Employee below 100 EUR (130 USD) are excluded from this category. Companies for which Operating Revenue, Total Assets and Employees are unknown but have a level of Capital comprised between 50 thousand EUR (65 thousand USD) and 500 thousand EUR (650 thousand USD) are also included in the medium sized companies' category.

The period analyzed consists of data collected from the year 2005 to 2014 and covers approximately 2,243 agricultural subjects meeting the SME definition (both the Amadeus and generally used following the EU one), which creates file consisting of 22,366 observations for each factor (lines in the created database file analyzed).

There are specified the factors caught in the accounting of the companies which potentially influence the reported efficiency and profitability of the companies expressed as EBITDA and EBIT. Based on the available data and the expert decision process the following factors were selected as potential ones influencing the EBITDA and EBIT: Gearing, Number of Employees, Total Assets and Material Costs (which means "consumption in production plus costs of goods sold minus services).

Subsequently the parameters of the econometric models are checked to verify the validity of the models or update to be realized. For the expression of dependency multi-factorial regression analysis linear model with intercept will be used for its clear interpretation and linear relationships expectation. The parameters of the models are output at the 5% level of significance. For processing the analyses the GRETL software was used as the primary tool and in some cases the IBM SPSS software was applied for verification.

## 3 Problem solving

### 3.1 EBITDA Econometric Model Description – Model No. 1

Economic model: $y_1 = f\,(x, x_2, x_3, x_4, x_5)$ (1)

Econometric model: $y_{1t} = \gamma_1 x_{1t} + \gamma_2 x_{2t} + \gamma_3 x_{3t} + \gamma_4 x_{4t} + \gamma_5 x_{5t} + u_t$ (2)

Declaration of variables: $y_1$...EBITDA, $x_3$…number of employees, $x_1$…vector unit, $x_4$…total assets, $x_2$…gearing, $x_5$…material costs

***Tab. 1: Descriptive statistics***

| (2005-2014) | EBITDA | Gearing | Number of Employees | Total Asset | Material Costs |
|---|---|---|---|---|---|
| Standard deviation | 2596.48 | 6.3904 | 16.834 | 11236. | 3348.2 |
| Median | 5022.00 | 77.750 | 55.000 | 100540 | 37918 |
| Average | 4943.70 | 76.220 | 52.500 | 104770 | 38022 |

*Source: Authors based on Amadeus database*

The median is the middle value that divides the data set into two parts. Dispersion is defined as the mean value of the squared deviations from the mean. Deviation from the mean value, which is of the same size as a random variable, shows the standard deviation. The standard deviation is calculated as the square root of the dispersion.

### Correlation Matrix

In the correlation matrix was found multicollinearity (presence of values higher than 0.8). High values between exogenous and endogenous variables are, on the contrary, a positive aspect. To eliminate multicollinearity, we have implemented a gradual difference of variable. Total assets. Multicollinearity thus was successfully eliminated.

***Tab. 2: Multicollinearity identification***

| y1_ EBITDA | X2_ Gearing | X3_ No_of_emp | X4_ Total_assets | X5_ Material costs | |
|---|---|---|---|---|---|
| **1.0000** | -0.3174 | -0.8021 | 0.8190 | 0.7113 | y1_EBITDA |
| | 1.0000 | 0.5041 | -0.3785 | -0.0768 | X2_Gearing |
| | | 1.0000 | -0.8734 | -0.4385 | X3_No_of_emp |
| | | | 1.0000 | 0.7799 | x4_Total_ass |
| | | | | 1.0000 | X5_Material_costs |

*Source: Authors based on Amadeus database*

***Tab. 3: Multicollinearity reduction***

| y1_ EBITDA | X2_ Gearing | X3_ No_of_emp | d_X4_ Total_assets | X5_ Material_c osts | |
|---|---|---|---|---|---|
| **1.0000** | -0.3174 | -0.8021 | 0.6818 | 0.7113 | y1_EBITDA |
| | 1.0000 | 0.5041 | -0.6205 | -0.0768 | X2_Gearing |
| | | 1.0000 | -0.4163 | -0.4385 | X3_No_of_emp |
| | | | 1.0000 | 0.7791 | d_x4_Total_ass |
| | | | | 1.0000 | X5_Material_costs |

*Source: Authors based on Amadeus database*

**EBITDA model estimation using the common least squares method**

$$y_{1t} = 696.303\, x_{1t} + 505.091 x_{2t} - 162.082 x_{3t} + 0.901191 x_{4t} - 0.744746\, x_{5t} + u_t \quad (4)$$

All chosen parameters are statistically important.

***Tab. 4: EBITDA model outputs and statistical parameters***

| | coefficient | std. error | t-ratio | p-value |
|---|---|---|---|---|
| const | 696.303 | 4044.09 | 0.1722 | 0.8717 |
| x2_gearing | 505.091 | 102.147 | 4.945 | 0.0078 *** |
| x3_No_of_emp | -162.082 | 20.9326 | -7.743 | 0.0015 *** |
| d_x4_Total_ass | 0.901191 | 0.172718 | 5.218 | 0.0064 *** |
| x5_Material_cos | -0.744746 | 0.220145 | -3.383 | 0.0277 ** |

| | | | |
|---|---|---|---|
| Mean dependent var | 5140.222 | S.D. dependent var | 2673.941 |
| Sum squared resid | 1520736 | S.E. of regression | 616.5907 |
| R-squared | 0.973414 | Adjusted R-squared | 0.946827 |
| F(4, 4) | 36.61314 | P-value(F) | 0.002083 |
| Log-likelihood | -66.93911 | Akaike criterion | 143.8782 |
| Schwarz criterion | 144.8643 | Hannan-Quinn | 141.7502 |
| rho | 0.028758 | Durbin-Watson | 1.669719 |

*Source: Authors, Amadeus data, GRETL software*

**Statistical verification of the model**

Coefficient of determination: $R^2 = 1 - (S2u / S2y) = 0.973414$ (5)

Changes in EBITDA are explained by changes of JV, gearing, total asset, material costs and number of employees at 97.84 %. The Adjusted R squared on the model is 94.68 %. Test for heteroskedasticity is mentioned in Tab. 5.

***Tab. 5: Heteroskedasticity of the model testing***

```
Breusch-Pagan test for heteroskedasticity
OLS, using observations 2006-2014 (T = 9)
Dependent variable: scaled uhat^2

                    coefficient    std. error    t-ratio   p-value
  -------------------------------------------------------------
  const              1.45973       9.44719        0.1545   0.8847
  x8_gearing        -0.271237      0.238619      -1.137    0.3191
  x11_No_of_emp      0.0440379     0.0488996      0.9006   0.4187
  d_x16_Total_ass   -0.000526709   0.000403477   -1.305    0.2618
  x9_Material_cos    0.000511207   0.000514268    0.9940   0.3765

  Explained sum of squares = 5.63556
```

| |
|---|
| Test statistic: LM = 2.817781, |
| with p-value = P(Chi-square(4) > 2.817781) = 0.588767 |

*Source: Authors, GRETL software*

The null hypothesis tells us that in the model is present homoscedasticity. According to Breusch Pagan-test the p-value is greater than the significance level 0.05. Thus, null hypothesis cannot be rejected. It can be said that in the model is present homoscedasticity and not heteroskedasticity.

The result of the test of autocorrelation is presented in Tab. 6 and confirms the validity of the model confirming there is not any autocorrelation of the first-grade present in the model EBITDA tested.

***Tab. 6: Results of the autocorrelation test***

| | coefficient | std. error | t-ratio | p-value |
|---|---|---|---|---|
| ------------------------------------------------------------- | | | | |
| const | 85.0540 | 4858.89 | 0.01750 | 0.9871 |
| x8_gearing | -2.33563 | 123.590 | -0.01890 | 0.9861 |
| x11_No_of_emp | -0.229779 | 24.4301 | -0.009406 | 0.9931 |
| d_x16_Total_ass | -0.00516027 | 0.215555 | -0.02394 | 0.9824 |
| x9_Material_cos | 0.00312149 | 0.258843 | 0.01206 | 0.9911 |
| uhat_1 | 0.0457859 | 0.728469 | 0.06285 | 0.9538 |
| | | | | |
| Unadjusted R-squared = 0.001315 | | | | |
| | | | | |
| Test statistic: LMF = 0.003950, | | | | |
| with p-value = P(F(1,3) > 0.00395041) = 0.954 | | | | |
| | | | | |
| Alternative statistic: TR^2 = 0.011836, | | | | |
| with p-value = P(Chi-square(1) > 0.0118356) = 0.913 | | | | |
| | | | | |
| Ljung-Box Q' = 0.0102089, | | | | |
| with p-value = P(Chi-square(1) > 0.0102089) = 0.92 | | | | |

*Source: Authors, GRETL software*

The normal distribution is confirmed by the normality test as showed in the Tab. 7.

***Tab. 7: Normality test***

| | | | | | |
|---|---|---|---|---|---|
| Frequency distribution for uhat23, obs 2-10 | | | | | |
| number of bins = 5, mean = 1.16213e-012, sd = 616.591 | | | | | |
| | | | | | |
| interval | midpt | frequency | rel. | cum. | |
| | | | | | |
| < -466.64 | -639.83 | 1 | 11.11% | 11.11% | *** |
| -466.64 - -120.27 | -293.45 | 4 | 44.44% | 55.56% | *************** |
| -120.27 - 226.11 | 52.923 | 2 | 22.22% | 77.78% | ******* |
| 226.11 - 572.49 | 399.30 | 0 | 0.00% | 77.78% | |
| >= 572.49 | 745.68 | 2 | 22.22% | 100.00% | ******* |
| | | | | | |
| Test for null hypothesis of normal distribution: | | | | | |
| Chi-square(2) = 1.279 with p-value 0.52747 | | | | | |

*Source: Authors, GRETL software*

The null hypothesis tells us that the model has a normal distribution. According to Jarque Bera-test p-value is higher than the significance level 0.05. The null hypothesis cannot be rejected. We can say that the model has a normal distribution.

### 3.2 EBIT Econometric Model – Model No. 2

Economic model: $y_1 = f\,(x, x_2, x_3, x_4, x_5)$ (6)

Econometric model: $y_{1t} = \gamma_1 x_{1t} + \gamma_2 x_{2t} + \gamma_3 x_{3t} + \gamma_4 x_{4t} + \gamma_5 x_{5t} + u_t$ (7)

Declaration of variables: $y_1$…EBIT, $x_3$…number of employees, $x_1$…vector unit, $x_4$…total asset, $x_2$…gearing, $x_5$…material costs

***Tab. 8: Descriptive statistics***

| (2005-2014) | EBIT | Gearing | Number of Employees | Total Asset | Material Costs |
|---|---|---|---|---|---|
| Standard deviation | 3346.3 | 6.3904 | 16.834 | 11236. | 3348.2 |
| Median | 11123. | 77.750 | 55.000 | 100540 | 37918 |
| Average | 11803. | 76.220 | 52.500 | 104770 | 38022 |

*Source: Authors based on Amadeus database*

The median is the middle value that divides the data set into two parts. Dispersion is defined as the mean value of the squared deviations from the mean. Deviation from the mean value, which is of the same size as a random variable, shows the standard deviation. The standard deviation is calculated as the square root of the dispersion.

### Correlation Matrix

In the correlation matrix was found multicollinearity (presence of values higher than 0.8) of the coefficient Total assets. High values between exogenous and endogenous variables are, on the contrary, a positive aspect. To eliminate multicollinearity, we have implemented a gradual difference of variable in Total assets. Multicollinearity thus was successfully eliminated.

***Tab. 9: Multicollinearity identification and elimination***

| Y1_EBIT | X2_gearing | X3_No_of_emp | X4_Total_asset | X5_Material_cos | | Y1_EBIT | X2_gearing | X3_No_of_emp | d_X4_Total_asset | X5_Material_cos | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.0000** | -0.3255 | -0.8751 | 0.8916 | 0.7153 | Y1_EBIT | 1.0000 | -0.3255 | -0.8751 | 0.6399 | 0.7153 | Y1_EBIT |
| | 1.0000 | 0.5041 | -0.3785 | -0.0768 | X2_gearing | | 1.0000 | 0.5041 | -0.6205 | -0.0768 | X2_gearing |
| | | 1.0000 | -0.8734 | -0.4385 | X3_No_of_emp | | | 1.0000 | -0.4163 | -0.4385 | X3_No_of_emp |
| | | | 1.0000 | 0.7699 | X4_Total_asset | | | | 1.0000 | 0.7791 | d_X4_Total_asset |
| | | | | 1.0000 | X5_Material_cos | | | | | 1.0000 | X5_Material_cos |

*Source: Authors, GRETL software*

### EBIT model estimation using the common least squares method

Final scheme of the model:

$$y_{1t} = 5995.91 x_{1t} + 478.999\, x_{2t} - 207.591\, x_{3t} + 0.808768\, x_{4t} - 0.582248\, x_{5t} + u_t \quad (8)$$

All chosen parameters are statistically important.

***Tab. 10: EBIT model outputs and statistical parameters***

| | coefficient | std. error | t-ratio | p-value | |
|---|---|---|---|---|---|
| const | 5995.91 | 3421.47 | 1.752 | 0.1546 | |
| x8_gearing | 478.999 | 86.4202 | 5.543 | 0.0052 | *** |
| x11_No_of_emp | -207.591 | 17.7098 | -11.72 | 0.0003 | *** |
| d_x16_Total_ass | 0.808768 | 0.146127 | 5.535 | 0.0052 | *** |
| x9_Material_cos | -0.582248 | 0.186251 | -3.126 | 0.0353 | ** |

| | | | |
|---|---|---|---|
| Mean dependent var | 12063.89 | S.D. dependent var | 3439.891 |
| Sum squared resid | 3747978 | S.E. of regression | 865.7919 |
| R-squared | 0.960407 | Adjusted R-squared | 0.936651 |
| F(3, 5) | 40.42838 | P-value(F) | 0.000626 |
| Log-likelihood | -70.99821 | Akaike criterion | 149.9964 |
| Schwarz criterion | 150.7853 | Hannan-Quinn | 148.2940 |
| **rho** | **-0.029302** | **Durbin-Watson** | **2.028817** |

*Source: Authors, GRETL software*

### Statistical verification of the model EBIT

Coefficient of determination: $R^2 = 1 - (S2u / S2y) = 0.960407$ (9)

Changes in EBITDA are explained by changes of JV, gearing, number of employees a total asset z 96.04 % (Adjusted R squared 93.66 %). Test for heteroskedasticity is mentioned in Tab. 11.

***Tab. 11: Heteroskedasticity***

```
Breusch-Pagan test for heteroskedasticity
OLS, using observations 2006-2014 (T = 9)
Dependent variable: scaled uhat^2

                    coefficient    std. error    t-ratio   p-value
  ---------------------------------------------------------------
  const             -3.50450       7.38049       -0.4748   0.6597
  x8_gearing        -0.240227      0.186418      -1.289    0.2670
  x11_No_of_emp      0.0551264     0.0382021      1.443    0.2225
  d_x16_Total_ass   -0.000555307   0.000315211   -1.762    0.1529
  x9_Material_cos    0.000568163   0.000401765    1.414    0.2302

  Explained sum of squares = 7.90398

Test statistic: LM = 3.951989,
with p-value = P(Chi-square(4) > 3.951989) = 0.412542
```

*Source: Authors, GRETL software*

The null hypothesis tells us that in the model is present homoscedasticity. According to Breusch Pagan-test the p-value is greater than the significance level 0.05. Thus, null hypothesis cannot be rejected. It can be said that in the model is present homoscedasticity and not heteroskedasticity.

The result of the test of autocorrelation is presented in Tab. 12 and confirms the validity of the model confirming there is not any autocorrelation of the first-grade present in the model tested.

***Tab. 12: Test of autocorrelation***

```
Breusch-Godfrey test for first-order autocorrelation
OLS, using observations 2006-2014 (T = 9)
Dependent variable: uhat

                    coefficient   std. error    t-ratio    p-value
  -------------------------------------------------------------
  const             171.267       4186.96        0.04090   0.9699
  x8_gearing         -8.03244      119.601      -0.06716   0.9507
  x11_No_of_emp       0.473911      20.7713      0.02282   0.9832
  d_x16_Total_ass    -0.0143641      0.205880   -0.06977   0.9488
  x9_Material_cos     0.0119620      0.236166    0.05065   0.9628
  uhat_1              0.0971084      0.801467    0.1212    0.9112

  Unadjusted R-squared = 0.004870

Test statistic: LMF = 0.014681,
with p-value = P(F(1,3) > 0.0146805) = 0.911

Alternative statistic: TR^2 = 0.043827,
with p-value = P(Chi-square(1) > 0.0438271) = 0.834

Ljung-Box Q' = 0.0311195,
with p-value = P(Chi-square(1) > 0.0311195) = 0.86
```

*Source: Authors, GRETL software*

The null hypothesis tells us that in the model is not present first-order autocorrelation. According to Breusch Godfrey-test p-value is greater than the significance level 0.05. Thus null hypothesis cannot be rejected. We can say that in the model is not present first-grade autocorrelation. Normality tests of residuals confirms the normal distribution of the model as showed in the Tab. 13.

***Tab. 13: Normality tests***

```
Frequency distribution for uhat24, obs 2-10
number of bins = 5, mean = 2.72848e-012, sd = 521.661

       interval          midpt   frequency    rel.     cum.

           < -390.00   -533.52        1     11.11%   11.11% ***
   -390.00 - -102.95   -246.47        2     22.22%   33.33% *******
   -102.95 -  184.10    40.575        4     44.44%   77.78% ***************
    184.10 -  471.15    327.62        0      0.00%   77.78%
          >=  471.15    614.67        2     22.22%  100.00% *******

Test for null hypothesis of normal distribution:
Chi-square(2) = 1.030 with p-value 0.59744
```

*Source: Authors, GRETL software*

The null hypothesis tells us that the model has a normal distribution of residuals. According to Jarque Bera-test the p-value is greater than the significance level 0.05. The null hypothesis cannot be rejected. We can say that the model has a normal distribution of residuals.

## 4 Discussion

In economic verification, we examine the direction and intensity of the effects of explanatory variables on the explained variable in the context of the logical interaction of these outcomes with the general economic laws.

***Tab.14: Results logical and economical verification of the EBITDA model***

| | | |
|---|---|---|
| 696.303 | $\gamma_1$ | It represents the values of the explained variable (EBITDA), when other explanatory variables are zero. |
| 505.091 | $\gamma_2$ | By 505.10 CZK increases EBITDA if Gearing increases by a unit (%). The intensity appears high. Direction: During growth Gearing increases EBITDA was assumed. |
| -162.082 | $\gamma_3$ | By 162.10 CZK EBITDA decreases if the number of employees increases by a unit. The intensity is relatively high. Direction: During the increase of number of employees EBITDA decreases. This was expected according to the original assumptions. |
| 0.901191 | $\gamma_4$ | By 90.11 CZK EBITDA will increase if the Total asset increases by 100 CZK. The direction was anticipated due to the basic assumptions, intensity is adequate. |
| - 0.744746 | $\gamma_5$ | By 74.50 CZK EBITDA decreases when the Material Costs increase by 100 CZK. The direction and intensity were expected due to basic assumptions. The intensity is adequate. |

*Source: Authors*

In economic verification, we examine the direction and intensity of the effects of explanatory variables on the explained variable.

***Tab. 15: Results logical and economical verification of the EBIT model***

| | | |
|---|---|---|
| 5995.91 | $\gamma_1$ | It represents the values of the explained variable (EBIT) if other explanatory variables are zero. |
| 478.999 | $\gamma_2$ | By 479 CZK EBIT will increase if Gearing increases by a unit (%). Direction: During growth of Gearing, EBIT increases, it was supposed. The intensity is relatively high. |
| -207.591 | $\gamma_3$ | By 207.60 CZK EBIT is reduced, if the number of employees increases by a unit. The intensity is relatively high. Direction: During increase of number of employees. EBIT decreases as it was expected. |
| 0.808768 | $\gamma_4$ | By 80.90 CZK EBIT will increase if the Total asset increases by 100 CZK. The direction was expected due to basic assumptions. Adequate intensity. |
| -0.582248 | $\gamma_5$ | By 58.20 CZK EBIT will decrease if Material Costs increase by 100 CZK. The direction was expected due to basic assumptions. Adequate intensity. |

*Source: Authors*

As the models are based on data of the Czech Republic we must remind the high labor costs (consisting of relatively high employee taxes and social security contributions) on one hand and the relatively low level of work productivity on other hand. It probably leads to the results expressed by both models relating the number of employees and the SME efficiency relationship. Moreover, the non-flexibility of the labor market can push the companies to keep the employees even during time when the capacity of employees cannot be fully used which might be stressed by the seasonal character of the agricultural industry. Capkovicova and Hlavsa (2015) studies showed the Czech agricultural companies cannot effectively attract the employees which can multiply the above identified effects.

The relatively low quantitative influence of material costs on the EBIT/EBITDA results comparing to the can be understood both ways the companies act effectively relating the price of inputs and/or the prices of services not included in the factor can be an important and expensive part of the agricultural companies' inputs.

The findings represented by the principle “the higher number of total assets the higher profitability of the company” could confirm the fact that the companies are able to use the assets effectively and increase the profit by the adequate frequency of total assets turnover. Comparing to the other countries the Czech Republic has number of companies farming on leasehold estates which should be kept in mind comparing to the other states results. Moreover the study realized by DeWulf, van Langenhove and van de Velde (2005) stated also the negative aspects of so called renewable sources devastating the agricultural land and influenced the efficiency of the sector. In fact the changes in land efficiency can be expected sooner or later as the so called renewable sources have changed the standards of the agricultural land usage and its quality with the long term influence. It is early to evaluate this impact of renewable sources in the Czech Republic; nevertheless the future research should be focused on this issue and the long term efficiency of agribusiness.

## Conclusion

The article is targeted to evaluation of efficiency of agricultural companies using the EBIT and the EBITDA parameters as these profitability evaluators show the condition of the company without respect to the chosen form of financing and in case of EBITDA without respect to amount of depreciations and amortization charges of assets too.

The aspect of high labor costs discouraging effects have more negative impacts cycling the problem of whole economy, not only the agricultural industry or SME.

It can be concluded the gearing is a motivating factor for farms to put stress of efficiency.

The company must carefully decide about the employee policy due to the strong influence of labor costs on the profitability of the company, in the agricultural industry particularly. In case the company can use the benefits of higher total assets it can lead to higher efficiency. Nevertheless the system of the land ownership non-balanced structure cannot be changed easily and must be accepted as the given competiveness burden of the Czech agricultural SME, in the short run at least.

The findings of the paper complement the approach of published studies focused particularly on importance of specific profit and sector factors available about the agricultural companies. The outputs of the paper are in line with the generally declared the press of gearing towards the efficiency. Both models results expressed the relationship between the number of employees and profitability. These conclusions are in line with existing study results (Anand, 2015) stating as major problems limiting the efficiency of SME in agricultural sector the absence of adequate and timely banking finance, limited capital, access to international market and knowledge management. It could have been expected, the net profit will be lowered by the interest paid but the efficiency of the company showed to grow up with increase of the gearing. It might be concluded that the approach to the finance sources and loans helps to the agricultural SME generally, without respect to the costs consisting of interests, in the analyzed period of time.

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