The assessment of forestry companies in the Czech Republic with focus on profitability

M. Levá, H. Čermáková, M. Stárová, H. Vostrovská

Department of Trade and Accounting, Faculty of Economics and Management,
Czech University of Life Sciences Prague, Prague, Czech Republic

ABSTRACT: The paper deals with the evaluation of economy of forestry companies. The evaluation stems from the results of economic analyses of enterprises that are further monitored in the context of forestry and development of economic financial ratios of evaluated companies. Furthermore, the evaluation is based on real possibilities of companies stemming from resources which they have at their disposal and on the facts that occurred in the selected companies in the monitored period. The development of important factors influencing the whole branch of forestry and their real state are introduced in the first part of the paper. After that, methods used in financial analysis of enterprises are described. The fact that forest land in the Czech Republic covered 2.66 million hectares in 2014 and its proportion in the total area of the country is 34% adds importance to the topic (Czech Statistical Yearbook 2015).

The subject-matter of the paper is a basic analysis of the financial position of selected private forest enterprises and municipalities owning forest land in the monitored period from 2008 to 2013 with focus on profitability of their business activities. In 1992 in the forest sector there was a transformation of former state forest enterprises. This was followed by a significant decrease in the proportion of forest state ownership and an increase in the proportion of private ownership, and new private business entities were established. The economic and legislative environment in the forestry field has also changed. Considering this development, discussions and analyses of the current state of management in the forest sector, not only among operating foresters, but also at the top social and political levels, are repeated (Šmída, Dudík 2014). This view is also confirmed by the resolution which states that "economic viability is declared to be a key pillar for sustainable forest management and of conclusive significance for the preservation of forests and their multiple benefits for the society" (Kupčák,

Šmída 2015). This view was confirmed by Zobrist et al. (2006), who noted that financial analysis is an important part of forest management planning. Like cash flows, tax estimates or comparisons of rates of return, financial analysis is useful for enterprises with any type of ownership, size or goals.

In the present, highly competitive environment, companies in sound condition are only those that control not only the business side of their business activities, but also the financial side, the role of which is equally important. As Kupčák (2005) mentioned, the basic prerequisite for long-term business activities of any company in the market, including the forest ones, is a continuous assessment of their economic activity and, primarily, the achieved profit or loss.

For assessment purposes, instruments of financial analysis by which the company's financial health may be monitored and evaluated are used. Since all decision-making activities associated with business have been transferred to individual market entities, important decisions to improve the

situation of companies may be implemented based on results of financial analysis and appropriately selected financial ratios. At the same time, intercompany comparisons can be carried out, and thus it is possible to increase the knowledge of specifics of companies, inter alia, also in the context of forest management. Forestry has been chosen because of the significance of forests for the development of the Czech Republic regions and also because of its specific nature within the national economy. Kupčák (2003) noted that forests also represent a significant component of integrated policy of rural development, mainly for their contribution to income and job opportunities in regions with high rates of unemployment. In this context, Konečný (2014) further noted that agriculture (including forestry) is one of the sectors and industries in the rural areas which can ensure the sustainability of rural households and the quality of life in rural areas through combination of agriculture and other activities (tourism and other services) in the frame of multifunctionality concept. Hildebrant and Knoke (2011) also stated that financial return and other beneficial effects of today's investments will often be received by coming generations and that the sustainability paradigm plays an important role in forest financial management. The measurement of the total economic value of forests is an important issue and research has shown that an accurate measurement of the commercial value of multiple agroforestry uses must be seen as a benchmark for achieving the more ambitious objective of measuring the forest's economic value as a public environmental good (Campos et al. 2008).

The concept of financial analysis represents a systematic analysis of obtained data of economic nature, primarily, from financial statements. Financial analysis incorporates an evaluation of the company's past and present and a prediction of future financial conditions (Růčková 2010). According to Miklovičová (2010), financial analysis ratios are focused on the assessment of a current financial position. Information and results that can be obtained from financial analysis are the topic of interest not only for the company itself (the management, employees), but also for other external subjects (investors, business partners, competitors). Each of these groups requires a different scope and specification of information resulting from financial analysis, mainly because of the fact that is associated with a certain type of economic decision-making tasks (Kupčák 2005; Grünwald, Holečková 2009).

As Sedláček (2011) added, classic financial analysis consists of two interrelated parts – qualitative (fundamental) analysis and quantitative (technical) analysis. Fundamental analysis is based on economic and noneconomic knowledge, subjective estimates and it does not usually use any algorithmic procedures. Technical analysis uses mathematical, statistical and other algorithmic procedures that lead to the quantitative processing of economic data with a subsequent qualitative assessment of results.

The basic and most frequently used methods for analysing a company's financial position are financial ratios – particularly profitability ratios. The reasons for using financial ratios are as follows:
(*i*) they enable to analyse the time development of the company's financial position, it is the so-called trend analysis;
(*ii*) they are an appropriate instrument for spatial analysis, i.e. a comparison of mutually comparable companies is made possible;
(*iii*) they can be used as input data for mathematical models that describe dependence relations between/among effects, classify states, assess risks and predict the future development (Sedláček 2011).

Financial analysis results and its ratios must be evaluated with respect to specifics that are characteristic of the sector to which analysed companies belong. Kupčák (2004) stated that the forestry economy is a branch economy, the subject of which is the use of production factors in forestry and the basic production factor is a forest. Within the country the forest represents an object of the national economy because wood production is a part of the market environment, forest owners and farming entities have tax obligations to the state budget, receive subsidies, etc.

In general, financial analysis ratios can be divided into several basic groups, particularly a group of profitability, liquidity, activity, and debt ratios.

Profitability has historically appeared in European forest management in all economic concepts, particularly with German foresters. The reasons for this were forest owners' questions whether the management of forests yields a profit, or more precisely, whether it is profitable and who and how finances the business activities. As for forest management, at the beginning of the 20th century the opinion that from the economic aspect profit or loss should be compared to paid-in capital began to predominate. One can say that the advantage of the capital invested in the forest is that there is not such a risk of large losses as with capital invested in the industrial sector (Kupčák 2004). In the present concept, profitability is an indicator for measuring the ability to make a profit and gain new sources using the invested capital. In general, profitability

expresses the ratio between inputs and outputs. It expresses the profit rate, which serves as one of the important criteria for capital allocation; in general, it is used to assess the overall effectiveness of a given activity (Knápková et al. 2013).

At present, there are both foreign and domestic studies concerning the methods of financial analysis use – especially the use of profitability: Research of the return on equity (ROE) in Small and Medium Enterprises in China (Lu, Li 2010), Economic Results of Agricultural Enterprises in 2009 (Střeleček et al. 2011) and others.

The aim of this paper is to evaluate the financial position of business entities in the forest sector with focus on profitability and to present summary data that would contribute to the assessment of the overall forest profitability, which should be viewed as a separate category. As Lenoch (2010) stated, the strategic objective of economic functions of forests is to improve economic viability and competitiveness of forest management in the long run. Obtained results would be beneficial not only for forest owners and the corporate sector, but also, for example, for the verification of cost and revenue models used to valuate forests, for forestry legislation, government subsidy policy, etc. Last but not least, these outcomes may serve to compare forestry with other sectors of the national economy and with comparable foreign entities and for other studies. As Šmída and Dudík (2014) mentioned, both the existence and availability of such information in the forest sector is rather neglected in comparison with allied or related industries. The problem of forest economic viability is a topical question that deserves considerable attention. Hence, the examination of forest enterprises' performance is necessary, particularly for higher awareness of the professional and general public, because, basically, the only official set of information on forest management is the regularly published Report on the State of Forests and Forestry in the Czech Republic for a particular year – the so-called "Green Reports" (2013).

The stated aim of this paper is a follow-up, inter alia, to conclusions of the article written by Šmída and Dudík (2014) called "Analysis of Business Entities in the Forestry of the Czech Republic with respect to the Availability of Financial Information on Selected Entities" and this paper can also be considered to be a knowledge contribution to creating a unified economic information system which would enable to perform detailed economic analyses in forest management according to the requirements of the formulated economic pillar of the National Forest Programme of the Czech Republic.

MATERIAL AND METHODS

Concrete data on the management of selected forest enterprises were obtained from the Amadeus database (2015), which is a database of economic and financial information of all companies that are obliged, according to the Czech legal regulations, to disclose their financial statements. Other sources include publicly accessible data for financial analysis, namely financial statements (balance sheets, income statements), annual reports etc.; the data are available in the Commercial Register and the Commercial Bulletin. The main sample, i.e. the examined business entities (n_a = 55), have been selected on the basis of classification of economic activities (CZ-NACE) 02: the deciding factor for inclusion in the sample was that the companies are active in the field of Forestry and Logging, and unequivocally report this activity as the predominant business activity. Based on the specialization of the selected forest entities, they represent a relevant sample of entities that are involved in co-creating the forestry service market. Thus, they are companies representing a part of the business sector which has a significant influence on creating the business environment in the forestry of the Czech Republic. The reason for choosing these forest companies is to primarily assess the forest production function, which is logging and other silvicultural activities. In terms of the forest owner category, these are private forests (owned by limited liability companies and joint-stock companies) and forests owned by cities and municipalities. Furthermore, a sub-sample (Table 1) of forest enterprises farming in the Czech Republic (n_b = 10) has been made by the random selection method from the main sample of n_a = 55 entities selected above. The reason for creating a sub-sample is to introduce concrete ratio values of particular forest entities. These sub-values of sample n_b = 10 are compared with the identified total average values of the main sample n_a = 55, which is the subject of this analysis, and the selected financial ratio results are the subject of discussion.

Financial ratios, which are usually used in financial analysis methods, are applied in assessing the financial position of the selected forest enterprises working in the Czech Republic. The focus of assessing the financial position of companies is a group of profitability ratios and their respective indicators. Profitability ratios are selected because of a possibility of obtaining, for example, a wide range of useful information.

Another observed indicator is profit before tax. This type of profit or loss makes an international

Table 1. Representation of the selected forest entities by regions of the Czech Republic (Amadeus database 2015)

| Name of the region | Frequency of representation of forest entities in the region | | | |
| | relative (%) | | absolute | |
	$n_a = 55$	$n_b = 10$	$n_a = 55$	$n_b = 10$
Central Bohemian Region	5.45	–	3	–
Highlands Region	10.91	–	6	–
Hradec Kralove Region	9.10	10.00	5	1
Karlovy Vary Region	5.45	20.00	3	2
Liberec Region	1.83	–	1	–
Moravian Silesian Region	9.10	10.00	5	1
Olomouc Region	5.45	10.00	3	1
Pardubice Region	5.45	–	3	–
Plzen Region	12.73	–	7	–
Prague – the Capital of CR	7.23	10.00	4	1
South Bohemian Region	9.10	10.00	5	1
South Moravian Region	9.10	20.00	5	2
Usti nad Labem Region	5.45	10.00	3	1
Zlin Region	3.65	–	2	–
Total	100.00	100.00	55	10

CR – Czech Republic

comparison possible, since it is not affected by different tax burden in individual countries. Profit before tax is compared to profits or losses stated in the Report on the State of Forests and Forestry in the Czech Republic 2013 – the so-called "Green Report 2013" (hereinafter referred to as RF 2013).

The following financial ratios used in processing the results have been selected for comparison.

The return on equity 1 (ROE1) expresses the total return on own sources, and thus their appreciation rate in profit, it determines whether the invested capital provides revenues, as Eq. (1):

$$ROE1 = \frac{\text{operating P or L + financial result}}{\text{shareholders' equity}} \times 100 \qquad (1)$$

where:
ROE1 – return on equity,
P – operating profit,
L – operating loss.

The return on capital employed 1 (ROCE1) evaluates the significance of long-term investment, it is based on the determination of return on equity related to long-term resources, i.e. increasing the potential when using long-term borrowed capital, as Eq. (2):

$$ROCE1 = \frac{\text{operating P or L + financial result + interest expenses}}{\text{equity + long-term liabilities + long-term bank loans}} \times 100$$
$$(2)$$

where:
ROCE1 – return on capital employed,
P – operating profit,
L – operating loss.

The return on assets 1 (ROA1) expresses performance or production efficiency and earning capacity of a company irrespective of the fact from which sources total assets are financed, as Eq. (3):

$$ROA1 = \frac{\text{operating P or L + financial result}}{\text{total assets}} \times 100 \qquad (3)$$

where:
ROA1 – return on assets,
P – operating profit,
L – operating loss.

Equation (4):

$$ROE2 = \frac{\text{P or L for the reporting period}}{\text{shareholders' equity}} \times 100 \qquad (4)$$

where:
ROE2 – return on equity,
P – profit for the reporting period,
L – loss for the reporting period.

Equation (5):

$$ROCE2 = \frac{\text{P or L for the reporting period + interest expenses}}{\text{equity + long-term liabilities + long-term bank loans}} \times 100$$
$$(5)$$

where:
ROCE2 – return on employed capital,
P – profit for the reporting period,
L – loss for the reporting period.

Equation (6):

$$ROA2 = \frac{\text{P or L for the reporting period}}{\text{total assets}} \times 100 \qquad (6)$$

where:

ROA2 – return on assets,

P   – profit for the reporting period,

L   – loss for the reporting period.

The second group indicators, i.e. ROE2, ROCE2, and ROA2, are interpreted in the same manner as the indicators of the first group, i.e. ROE1, ROCE1, and ROA1. The only difference is in a different form of the numerator, which represents only a different form of profit or loss. In the calculations of selected economic indicators, the numerator contains operating profit or loss (hereinafter P/L) plus financial P/L (ROE1; ROA1); the numerator in ROE2; ROA2 contains P/L for the accounting period. In the first case, this is the profit or loss before tax and in the second case, the calculation uses profit or loss after tax, i.e. after including the income tax and its impact on profit or loss among expenses. In ROCE1, the numerator contains a sum of operating profit or loss, financial profit or loss and interest expenses. In the case of ROCE2, the numerator includes P/L for the accounting period plus interest expenses. This is again profit or loss before tax and after tax combined with interest expenses.

The determined values of selected economic indicators at $n_a = 55$ are given in the Results chapter as mean and median values (Tables 2, 4, 6). The arithmetic mean is undoubtedly one of the most common data processing operations. As an estimate of the data set location parameter, it represents the entire data set. The median is another important method for estimating the location parameter as one of the selection quantiles (KOVANICOVÁ, KOVANIC 1995).

The listed economic indicators were selected because they can provide quick information about basic financial characteristics.

RESULTS

Within the application of the financial ratios mentioned above on the selected sample of forest business entities, the following results, which are presented in the individual tables below and further commented on, were obtained.

Table 2 shows the average values of ROE1 and ROE2 of the main sample ($n_a = 55$) of forest enterprises acting in the Czech Republic in the respective years.

The development of return on equity ratios (ROE 1 – without the effect of income tax, ROE2 – with the effect of income tax) shows, on the whole, a balanced trend in the main sample for the reference period. An exception is 2008, when there was a marked drop in profits for forest owners in consequence of the global economic crisis, which was reflected in the profitability ratios. However, from 2009 to 2013, profits were increasing, which is reflected in the ROE1 and ROE2 values. Another reason for the growth in ROE1 and ROE2 values from 2009 to 2013 was the fact that some companies had reduced the share of their equity in the company's total capital, which can be verified in the respective financial statements and in the Annex to the Financial Statements. The particular values given in Table 2 show that the total return on own sources reaches values from 10.38% to 13.86% for the reference period and it proves the ability of forest entities to achieve return on invested capital. The value of return on equity is affected by profits or losses and the development of equity amount, which undergoes considerable year-on-year changes in the monitored forest enterprises. To complete and improve the informative value of Table 2, median values of the main sample ($n_a = 55$) should be used to evaluate return on equity of forest companies. Median value is not affected by extreme values or absolute values of input quantities. In order to make the comparison with the average values of indicators possible, median values that were reached in the entire reference period are given in Table 2. The results clearly show that the average of ROE values is truly affected by extreme values, because in some years the mean and median values of the main sample ($n_a = 55$) of forest enterprises vary even by several percentage points. This fact is caused mostly by a marked loss rate, or, conversely, high profitability of individual forest companies acting in the Czech Republic. The reasons leading to this fact are low flexibility of forestry as a separate sector and its specific nature, which involves a long production

Table 2. Values of return on equity ratios (in %) in 2008–2013 ($n_a = 55$) (Amadeus database 2015)

Ratio		2008	2009	2010	2011	2012	2013
ROE1	average	10.38	11.17	13.86	11.35	13.26	11.93
	median	3.08	6.48	7.09	2.73	4.20	7.44
ROE2	average	8.01	9.74	11.04	7.34	10.15	9.89
	median	2.06	4.39	5.88	2.66	3.56	7.25

ROE1 – return on equity for operating profit or loss, ROE2 – return on equity for profit or loss for the reporting period

Table 3. Example of concrete values of return on equity for operating profit or loss (ROE1) (in %) in 2008–2013 (n_b = 10) (Amadeus database 2015)

Company name	2008	2009	2010	2011	2012	2013
1.Písecká lesní a dřevařská, a.s.	37.34	28.70	25.03	29.25	68.88	27.46
Lesní společnost Broumov Holding, a.s.	−3.20	23.77	12.13	−7.23	1.10	0.47
Lesní společnost Přimda, a.s.	6.87	1.99	−0.29	−8.29	−3.19	5.65
Hedera Zima, s.r.o.	−0.07	14.98	7.39	1.96	−3.38	0.03
Zábřežská lesní, s.r.o.	−11.24	−22.26	−38.00	−14.35	−24.84	−36.60
Katr, a.s.	−13.29	2.42	2.05	−2.80	−16.08	7.44
LESCUS Cetkovice, s.r.o.	−1.03	7.21	25.85	17.05	16.68	15.36
Lesy Žlutice, s.r.o.	19.40	−7.11	−3.93	−0.89	83.00	20.78
Petra, s.r.o.	14.96	25.32	28.27	17.53	10.60	24.61
Lesní společnost Teplá, a.s.	−4.80	4.40	11.90	−1.20	−63.93	−8.96

time, seasonality and the impossibility to respond quickly to the demand of allied industries. By way of illustration, concrete values of ROE1 in the sub-sample of n_b = 10 entities are given in Table 3.

Table 3 lists respective values of ROE1 in the sub-sample of n_b = 10 forest entities for the entire reference period. Comparing the sub-sample (n_b = 10) values (Table 3) with the main sample (n_a = 55) values shows that the indicator average values in Table 2 are affected by the extreme values of indicators, which are reached by the respective forest business entities. For example, the company called 1. Písecká lesní a dřevařská, a.s. (Table 3) achieved markedly above-average results because of the transfer of retained earnings from the previous years to subsequent reporting periods, which results from the analysis of financial statements, namely from the company's profit and loss statement.

The average values of the main sample (n_a = 55) for ROCE1 and ROCE2 are given in Table 4.

In the case of return on capital employed (ROCE1 – before income tax, ROCE2 – with the effect of income tax), the dual construction of the indicator has its use. According to Grünwald and Holečková (2009), the construction of ROCE1 may be considered useful because it expresses the fact that assets generate income, which is then divided into net profit (for companies), income tax (for the state budget) and interest (for creditors). The second form of the indicator, i.e. ROCE2 takes into consideration taxa-

tion and includes all interest, including the short-term one, because the numerator expresses profit from total assets. It results from the values documented in Table 4 that the development of return on capital employed indicators (ROCE1 – without the effect of income tax, ROCE2 – with the effect of income tax) showed a rather changeable trend in the main sample for the reference period. As for the economic situation of forest owners, in 2008 there was a slump in profits in forestry due to the global economic crisis, which was reflected in the presented profitability ratios. However, from 2009 to 2013, profits were increasing, which is reflected in the values of ROCE1 and ROCE2. An exception in the reference period is the year 2011, when the ROCE1 value was 7.05% and the ROCE2 value was 4.80%. The reason for the decrease in these values was a decline in the profits of some companies, or decrease of the long-term bank loans of some companies, which is reflected in the construction of the formula for calculating ROCE1 and ROCE2. The best value of ROCE1 was reached in 2010, when the value can be interpreted in a way that forest enterprises achieved a profit of CZK 0.1418 from each CZK 1 of capital employed on average. To complete and improve the informative value of Table 4 for the evaluation of return on capital employed of forest companies, the median values of the main sample were used (n_a = 55). In order to make a comparison with the average values of indicators pos-

Table 4. Values of return on capital employed (in %) in 2008–2013 (n_a = 55) (Amadeus database 2015)

Ratio		2008	2009	2010	2011	2012	2013
ROCE1	average	5.25	13.26	14.18	7.05	9.38	12.50
	median	3.57	8.08	9.96	3.95	4.75	8.13
ROCE2	average	4.19	11.43	11.06	4.80	7.31	10.67
	median	4.43	7.11	7.84	3.12	4.75	7.42

ROCE1 – return on capital employed for operating profit or loss, ROCE2 – return on capital employed for profit or loss for the reporting period

Table 5. Example of individual values of return on capital employed for operating profit or loss (ROCE1) (in %) in 2008–2013 (n_b = 10) (Amadeus database 2015)

Company name	2008	2009	2010	2011	2012	2013
1. Písecká lesní a dřevařská, a.s.	38.44	29.49	21.33	25.40	50.74	26.55
Lesní společnost Broumov Holding, a.s.	−3.13	23.95	12.14	−7.14	1.13	0.49
Lesní společnost Přimda, a.s.	6.57	2.78	−0.52	−6.82	−2.39	5.51
Hedera Zima, s.r.o.	3.57	16.74	9.96	5.95	2.86	3.383
Zábřežská lesní, s.r.o.	−10.40	−21.78	−37.66	−12.59	−20.31	−27.43
Katr, a.s.	−10.79	2.84	2.19	−2.42	−15.18	7.71
LESCUS Cetkovice, s.r.o.	6.66	7.77	13.78	11.08	11.96	9.37
Lesy Žlutice, s.r.o.	12.52	−3.15	−3.12	1.66	78.50	9.32
Petra, s.r.o.	13.34	18.55	25.92	15.12	10.81	23.65
Lesní společnost Teplá, a.s.	−4.35	4.42	11.84	−1.20	−63.53	−8.89

sible, Table 4 shows the median values that were recorded in the entire reference period. The same fact results from these values as from the values of ROE1, i.e. that average values of this indicator are affected by extreme values. A marked difference can be noticed, for example, in 2010, when the average value of the main sample was 14.18%, while the median value of the main sample for the same year was only 9.96%.

Table 5 below shows individual values of ROCE1 in the sub-sample of 10 subjects.

Table 5 presents concrete values of ROCE1 in the sub-sample (n_b = 10) of forest companies for the entire reference period. The average values in Table 4 are therefore affected by the extreme values of indicators, which were achieved by the individual forest companies.

The average values of the main sample (n_a = 55) for ROA1 and ROA2 are documented in Table 6.

In the reference period, ROA1 and ROA2 of both observed companies recorded variable values, therefore the development trend is changeable. In all years the indicators copy the development of the profit or loss, which is reflected in ROA1 and ROA2; however, in 2011 there was a sharp decline in values due to the impairment of assets of some analysed companies. The cause of growth in profits in the selected years is primarily a growing demand for raw timber not only in the domestic market, but also abroad. ROA1 and ROA2 are very often compared with ROE1 and ROE2. In accordance with the established approaches, the ROE1 and ROE2 indicators should always reach higher values than ROA1 and ROA2, which is confirmed by the results mentioned above. The results presented

Table 6. Values of return on total assets (ROA1, 2) (in %) in 2008–2013 (n_a = 55) (Amadeus database 2015)

Ratio		2008	2009	2010	2011	2012	2013
ROA1	average	3.34	4.92	7.67	1.11	4.94	4.40
	median	1.44	3.34	3.84	1.25	1.88	4.05
ROA2	average	2.50	4.40	6.02	0.19	3.88	3.56
	median	1.01	2.76	3.22	0.89	1.56	3.32

ROA1 – return on assets for operating profit or loss, ROA2 – return on assets for profit or loss for the reporting period

Table 7. Example of concrete values of return on assets for operating profit or loss (ROA1) (in %) in 2008–2013 (n_b = 10) (Amadeus database 2015)

Company name	2008	2009	2010	2011	2012	2013
1. Písecká lesní a dřevařská, a.s.	15.82	15.23	12.44	4.98	17.20	12.69
Lesní společnost Broumov Holding, a.s.	−2.98	20.58	10.69	−6.65	1.01	0.44
Lesní společnost Přimda, a.s.	4.69	1.36	−0.22	−5.87	−2.64	4.16
Hedera Zima, s.r.o.	−0.37	5.58	2.66	0.31	−0.34	0.00
Zábřežská lesní, s.r.o.	−7.78	−13.38	−21.47	−7.98	−11.58	−14.90
Katr, a.s.	−8.45	1.75	1.65	−1.9	−11.60	4.65
LESCUS Cetkovice, s.r.o.	−0.29	2.45	7.31	5.39	5.32	4.26
Lesy Žlutice, s.r.o.	10.03	−1.76	−2.80	−0.21	26.66	2.03
Petra, s.r.o.	6.11	13.72	15.75	9.23	2.77	7.96
Lesní společnost Teplá, a.s.	−4.30	3.85	10.59	−1.16	−61.39	7.73

Table 8. Average values of financial characteristics in 2008–2013 (n_a = 55, in thousand CZK) (Amadeus database 2015)

Characteristics	2008	2009	2010	2011	2012	2013
Profit before tax	645	1.559	2.049	5.478	7.468	8.246
Total costs	170.733	165.252	198.349	290.522	329.026	386.737
Total liabilities	51.113	51.730	53.618	80.184	95.321	104.117
Shareholders' equity	95.433	93.968	96.252	97.544	96.678	100.168
Total revenues	232.639	240.157	282.124	378.889	389.837	433.965

in Table 6 show that the forest companies acting in the Czech Republic have sufficient production power, and thus they prove their efficiency in using their corporate assets. In order to make a comparison with the average values of indicators possible, Table 6 lists the median values that were recorded in the entire reference period. The same fact results from the given values as from the values of indicators mentioned above, i.e. that average values of this indicator are affected by extreme values, although not to such an extent as it is in the case of ROE1 and ROCE1.

Concrete values of ROA1 for the sub-sample (n_b = 10) are shown in Table 7.

Table 7 includes ROA1 concrete values in the sub-sample of n_b = 10 forest companies for the entire reference period. As with the previous indicators, these values show that the average values in Table 6 are affected by the indicator extreme values, which are reached by the individual forest companies. However, in this case differences in the values are not so marked as in the case of the indicators mentioned above.

The average values of financial characteristics of the main sample (n_a = 55) from 2008 to 2013 are shown in Table 8.

The average value of profit of the selected forest companies follows the economic position of forest owners as it was recorded in the Report on the State of Forests and Forestry in the Czech Republic in 2013, where it is stated that after a slump in profits from 2006 to 2009 and their improvement from 2010 to 2012, the situation got better in 2013 again. In 2008 the economic position of all forest owners considerably deteriorated. The main cause of deterioration was a marked decline in prices of raw timber due to its sales crisis. Of the sample of 55 companies, 21 companies made a loss in 2008, which was caused, according to RF 2008, by the fact that business entities did not achieve sufficient revenues for work performed and prices for purchased wood in public tenders and contracts. According to RF 2008, the recorded loss rate in the forest sector was substantially influenced by a slump in prices of raw timber for customers, stagnation of prices for work performed for customers, and by an increase in costs of individual outputs on forestry activities.

The development in 2009 copied the development in 2008; however, there was a very moderate improvement in the economic situation. Since 2010, the economic situation of forest owners within the forest sector has improved. This was due to the recovery in demand for raw timber with a considerable increase in average prices of the key range of raw timber. Implemented measures to reduce costs in forestry activities have also had a favourable impact. From 2011 to 2013, the economic situation of forest owners was constantly improving. A favourable increase in prices for the sale of virtually whole range of raw timber, an increase in prices of services for customers for performed forestry work, primarily in logging and silvicultural activities, an improved efficiency of expenses on providing individual outputs in forestry activities and a higher productivity of security work were considered to be the key influences in 2013 leading to business profitability. The favourable situation described in the RF 2013 is also substantiated by the fact that of the selected sample (n_a = 55 companies), only 7 companies showed a loss in 2013. For improved explanatory abilities there are average values of financial indicators – total costs, total revenues, total liabilities, shareholders equity from 2008 to 2013 in thousand CZK.

DISCUSSION

A purely economic view on the profitability of forest companies acting in the Czech Republic is used in the presented paper. As Lenoch (2010) confirmed, an effort to deal with a purely economic aspect and economic interests of forest enterprises opens up a very sensitive topic of forestry and the use of renewable natural resources. However, it is important to point out that, to ensure the sustainable development of economic viability and competitiveness of forest property and individual business entities within forest management, this is a crucial and essential issue. A similar opinion was presented by Šmída and Dudík (2014), who were advocates of the fact that examining the performance of business entities in the forest sector was necessary and needed in order to inform

the general and professional public, and they also believed that it was necessary to bring back the idea of introducing a forestry economic information system with relevant information on the state of the forest sector in the Czech Republic. The presented analysis demonstrates the results of the key indicators that are able to characterize the examined area of profitability of the selected forest enterprises acting in the Czech Republic. The financial ratios mentioned above have been selected to be the key indicators. The results are always the average of values of the main sample (n_a = 55), then concrete results of the sub-sample (n_b = 10) are given. Unfortunately, there are no "recommended values" or branch average values for the forest sector available, with which the results of the examined sample could be compared. From the previous works and experience of the authors and according to GURČÍK (2002), it is possible to classify the examined sample of forest enterprises as successful companies in forestry (agriculture), as the values of ROE1 and ROE2 were higher than 8% in three consecutive years. Compared to the analysis of state forest enterprises, which was performed by KUPČÁK (2004), the results of return on shareholders' equity unequivocally indicate higher values in the examined sample of 55 entities in all respects.

It is noticeable from the tables included in the text that there is a range of values for a single indicator within one industry comprising a range of entities. A similar conclusion was drawn by ŠMÍDA (2004), who presented comparable results in his work. For this reason, the work results include the median values for the examined sample of 55 forest enterprises, since the median values are not affected by extreme values of indicators for individual examined companies. Based on the facts mentioned above, not only average values of key indicators, but also median values, which are of a significant informative value for the forest sector, should be taken into consideration for future works focused on the performance of forest enterprises and its comparison. To evaluate the current state of forestry economy is very difficult, as there are no current indicators valid for the entire sector. Given this circumstance, the current state cannot be evaluated objectively and the future development cannot be predicted.

CONCLUSIONS

To predict future development trends of business entities in the forest sector in the Czech Republic is currently a difficult task. It is necessary to study and analyse economic activities of business entities

in the forest sector, in particular, to raise awareness of the general and professional public and also to answer questions relating to future political, legislative and economic trends in forestry.

The paper has primarily aimed to evaluate the financial situation of businesses classified in CZ-NACE as falling under 02 Forestry and Logging by means of financial analysis. The use of basic methods of financial analysis, particularly profitability ratios, has enabled to obtain the results that provide a more detailed view on the specific issues in the forest sector, which is increasingly coming to the attention of the professional public. The sample of 55 forest enterprises operating throughout the Czech Republic has been analysed in the paper. This sample has provided necessary data (statements) for performing the analysis. The analysis results clearly show that forestry can be considered profitable in terms of average results. Having performed a detailed analysis of the financial situation of individual business entities, a great variability of values has been discovered. This fact is evidenced by the tables of the sub-sample (n_b = 10), from which it is evident that each independent business entity is managed differently and achieves different levels of profitability. It therefore follows that to evaluate the situation in the forest sector, it is advisable to use not only average values, but also median values, which describe the actual situation considerably better than average values. From the perspective of profit or loss, its development corresponds with the available information that is disclosed every year in the Report on the State of Forests and Forestry in the Czech Republic and the elaborated departmental statistical statement called Forest (Ministry of Agriculture) 2-01 "Annual Statement of Costs and Revenues in Forest Management" for the respective year. Since 2008 profits of forest enterprises have been improving in all ownership categories every year.

The above-mentioned values of indicators characterize 55 companies operating in the forest sector. Their summary into an average can be considered preliminary, as further data collection and their analysis in order to create a branch database of companies and branch averages of business entities in forestry would be necessary, as also ŠMÍDA (2004) noted. In addition to the average values of indicators, also their median values should be processed. As the analysis has shown, each business entity operating in forestry is specific and individual entities may differ significantly with respect to analysed indicators. Forestry is characterized by many specifics comprising a long production time, seasonality, etc., and it would therefore be appropriate to

create the aforementioned branch database, which would be a suitable data basis for further research concerning the performance of forest enterprises. The database of economic data on forestry should contain in particular information about the forest land bank, number of employees, annual production volume, data from financial statements, value of fixed assets and current assets, value of annual investments and amount of received grants from public budgets.

The real benefit of the paper is the presentation of key indicators of the main sample (n_a = 55) as well as of the sub-sample (n_b = 10), the comparison of their results and recommendation to use median values when creating the future branch database. Regarding the theoretical field, the paper is a contribution to the debate on the need to create the forestry database of economic data.

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Corresponding author:

Ing. Markéta Levá, Czech University of Life Sciences Prague, Faculty of Economics and Management, Department of Trade and Accounting, Kamýcká 129, 165 21 Praha 6-Suchdol, Czech Republic; e-mail: leva@pef.czu.cz