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2008

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MPRA Paper No. 12615, posted 09 Jan 2009 05:55 UTC

PROFITABILITY AS A BASIC CRITERION OF EFFICIENT MANAGEMENT¹

Petra Růčková

Abstract: The paper deals with the application of the basic indicator of evaluating profitability in the context with alternative costs. The aim of this paper is the evaluation of the efficiency of handling financial means of stockholders with companies traded on the stock exchange by means of the basic comparative indicator of profitability of equity in cooperation with statistical functions and its comparison with the values of costs of equity and safe interest rate.

Key words: *profitability, return on equity, cost of equity, safe interest rate, stock exchange*

INTRODUCTION

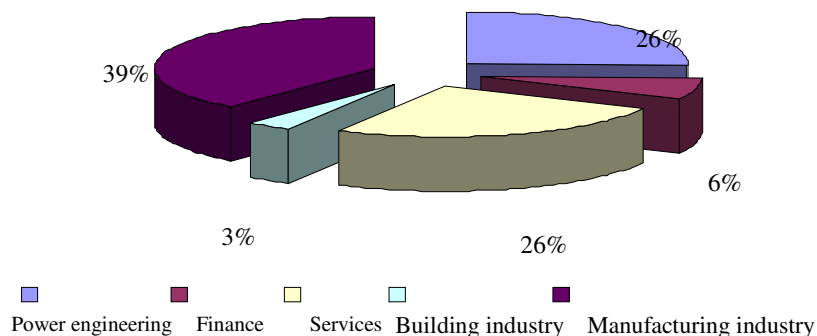
The aim of this paper is the evaluation of the efficiency of handling financial means of stockholders with companies traded on the stock exchange by means of the basic comparative indicator of profitability of equity in cooperation with the statistical functions and its comparison with the values of costs of equity and safe interest rate. From the methodological point of view, the methods of analysis and comparison were applied. For the analyses, the comparative indicators and basic statistical methods were used – quartile, median, and average. The comparison was carried out on the level of the enterprise branch and within the Stock Exchange Prague. As mentioned before, attention is chiefly paid to the companies, which are traded on the Stock Exchange Prague. At 01.02. 2007, thirty one title shares were registered on that market. It is possible to state the Stock Exchange Prague (BCPP) underwent a rather dramatic decrease from the perspective of the stock

¹ This paper is financed from the funds of GAČR – Grant no. 402/06/0204

market for over last two up to three years, as at 1.9. 2004, sixty one title share were registered on that market.

The analysis within this paper deals only with twenty nine companies, as the remaining two are financial institutions, whose evaluating parameters are different. All analyzed companies have more than one hundred employees. Information results from the annual reports of the particular companies, in which the analysis of profitability of equity, costs of equity and safe interest rate was carried out. The spreading of those companies according to the departmental classification of the economic activities is given in Graph no. 1.

Graph 1 Stakes of the companies traded on the Stock Exchange Prague in the particular branches



Source: Stock Exchange Prague and own calculations

The most of the companies on the Stock Exchange Prague (BCPP) from the point of view of OKEČ falls into the category of manufacturing industry and second, with the same number of companies, services and power engineering follow. From the viewpoint of stakes of the particular companies of the division of the market of the Stock Exchange Prague, it is possible to state that on the main market, ten title shares were traded at the mentioned date, on the minor market, eleven title shares and ten title shares on the official free market. It is a relatively even spreading, however, it is necessary to point out that on the minor market, distribution gas companies have a dominant position, which have a

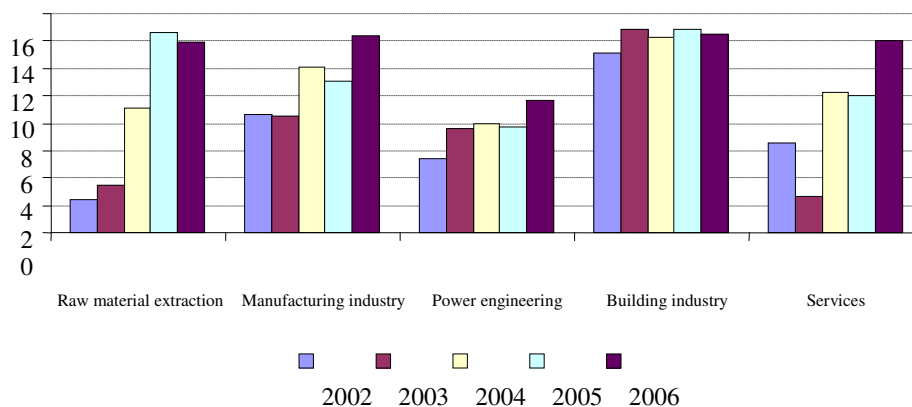
majority owner with almost a 100% stake, and their stocks have not been traded for a longer period. The most substantial part of the volume of trade is only provided by the third of title shares.

THE EVALUATION OF PROFITABILITY AS A BASIC CRITERION OF EFFICIENT MANAGEMENT

Profitability is a measure of the company's ability to create new resources, to make a profit by using the invested capital. Actually, it is a form of expressing profit rate, which is a main criterion of capital allocation. With those comparative indicators, one principally proceeds from two accounting statements, and i.e. a profit and loss statement, and a balance. The indicators of profitability are indicators, where an item in the numerator appears, which corresponds to the economic result, and a kind in the denominator. What can be generally said is the fact that indicators of profitability serve the evaluation of the total efficiency of the given activity. We are dealing here with indicators, which stockholders and potential investors will unequivocally find most interesting, however, for other groups, they have an indisputable meaning.

The most interesting, from the field of profitability, is the indicator of profitability of equity in relation to the capital market, to which mostly stockholders' attention is drawn, along with partners' and possible investors'. Attention is understandable, as it expresses how much of the net profit will fall on one crown invested by the stockholders, yet. From the construction perspective, the net profit and equity enter the comparative indicator on the level of the sum of all items of equity, i.e. not only equity capital but other items from the accounting point of view.

Graph 2 The development of profitability of equity in the particular branches according to the departmental classification of the economic activities in the years 2002-2006



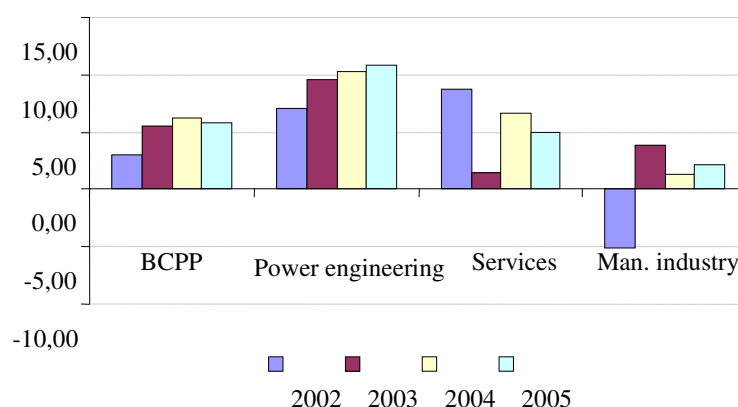
Source: Financial analysis of the Ministry of Industry and Trade of the Czech Republic

If we pay our attention to the development of profitability of equity in the Czech Republic in the particular enterprise branches regardless of the fact if the companies are or are not traded on the Stock exchange Prague (BCPP), then it is evident from the graph that almost with all observed enterprise branches, profitability of equity has an increasing tendency. It is necessary to notice that the year 2006 is elaborated only for the first three quarters, so the meaningfulness of this indicator is not yet full and can be influenced by a series of factors. The year 2006, from the position of profitability, appears as the most stable, nevertheless, it is necessary to realize that the representation of companies in the particular branches is various, and manufacturing industry is undoubtedly the most represented, in whose average value is included more than two thousand companies with a very different level of profitability. Raw material extraction encompasses thirty two companies with more than one hundred employees, Production and electric power, gas and water distribution 116 companies, Building industry 291 companies, Services almost 600 companies. One can also observe that the development of profitability of equity corresponds naturally and fully to the economic growth in the Czech Republic, as the Czech Republic showed a pace of the economic growth of 6.1 %² in the last analyzed year. The situation on the Stock

² Source: Czech Statistical Bureau

Exchange Prague is somewhat different. The above mentioned financial institutions are not included in the graph, along with one company in the branch of building industry. Raw material extraction is not represented on the Stock Exchange Prague at all.

Graph 3 The development of profitability of equity in the particular branches and the entire Stock Exchange Prague in the observed period



Source: financial reports of the particular companies and one's own calculations

It is obvious from the graph that the average size of profitability of equity on all markets oscillates about 5 %. The greatest ambivalence is showed by manufacturing industry, within which the biggest changes took place from the point of view of classifying companies into public trading on the Stock Exchange Prague. On the Stock Exchange Prague, the most represented branch is manufacturing industry. In the observed period, it stood up to the greatest problems from the viewpoint of efficiency and in the year 2002, it showed even a negative value. It can be said that from that branch a great number of companies come, which are not traded on the Stock Exchange Prague anymore. On the other hand, the most stable and efficient branch appears power engineering. If we aim for a more detailed analysis, then, Table no. 1 shows the situation in manufacturing industry.

Tab. 1 The spreading of profitability of equity of the companies on the Stock Exchange Prague in manufacturing industry

	Manufacturing industry			
	2002	2003	2004	2005
Minimal value	-163,73	-29,35	-71,50	-39,03
Bottom quartile	0,07	-2,55	-0,31	-2,40
Median	1,59	1,33	1,18	1,37
Upper quartile	9,59	3,80	11,02	10,72
Maximal value	41,82	39,21	39,63	28,91
Average	-5,31	3,59	1,03	2,11

Source: financial reports of the particular companies and one's own calculations

In manufacturing industry, in the year 2002, twelve companies were traded only on the main market, whereas in the year 2005, the same number was traded on all markets. The dispersion between the highest value and lowest value is considerable, although, the difference is futurewards diminishing, what is undoubtedly a positive feature. The more disquieting fact is that 25% of companies, from the perspective of profitability, are in negative values and the half of companies show profitability lower than 1.37 %. In the year 2002, such a noticeable negative minimal value was showed that in the total evaluation, the average value of profitability amounted to a negative figure. Permanently, the highest value is showed by Company Philip Morris ČR, which belongs to the most traded companies. It can be also said that 75 % of companies show profitability on the level of less than the half of the value of the Company Philip Morris ČR.

Tab. 2 The spreading of profitability of equity of the companies on the Stock Exchange Prague in the branch of power engineering

	Power engineering			
	2002	2003	2004	2005
Minimal value	2,05	2,64	3,18	6,17
Bottom quartile	5,90	7,30	8,30	7,84
Median	7,86	9,06	10,48	12,25
Upper quartile	8,84	11,49	12,63	13,03
Maximal value	12,63	12,96	17,53	14,67
Average	7,09	9,58	10,32	10,78

Source: financial reports of the particular companies and one's own calculations

The branch of power engineering is from the perspective of profitability one of the most stable branches and the dispersion between the minimal and maximum value is considerably smaller than in manufacturing industry, too. It has been already stated as well that out of eight traded companies on the Stock Exchange Prague, the half has a majority owner with almost 100% stake and they have not been traded for a longer period, too. The maximal value was permanently showed by Jihomoravská plynárenská in the observed period, and the minimal value by the Company Energoaqua. Notwithstanding, it can be stated as well that we are dealing here with the branch, in which none of the companies showed a loss in the observed period. That cannot be observed in the last branch, yet, which will be commented on, i.e. the branch of services. From the point of view of the number of the companies traded in that branch, their number is the same as with power engineering, i.e. 8.

Tab. 3 The spreading of profitability of equity of the companies on the Stock Exchange Prague in the branch of services

	Services			
	2002	2003	2004	2005
Minimal value	0,34	-12,36	-2,51	-0,80
Bottom quartile	1,23	0,22	2,77	2,68
Median	2,98	1,62	4,89	3,45
Upper quartile	4,30	3,50	9,54	6,06
Maximal value	50,08	9,17	21,14	16,74
Average	8,74	1,39	6,49	4,99

Source: financial reports of the particular companies and one's own calculations

In time, this branch on the Stock Exchange Prague has a tendency to the decreasing of the dispersion between the minimal and maximal value and in an increasing percentage number; there is a tendency to the growth of the appreciation of stockholders' means. This does not hold true as to the last observed year, where the dispersion between the minimal and maximal value lowered, yet, at the same time, the total level of profitability went down. If in the year 2004, the average value of profitability reached a level of 6.49 %, so in the year 2005, this value was by 1.5 % lower. Paradoxically, the RM-System demonstrated the maximal value in this branch on the Stock Exchange Prague for the last observed period, in the previous years; it was the Company Kotva, which

does not belong to the companies traded on the Stock Exchange Prague in the last year.

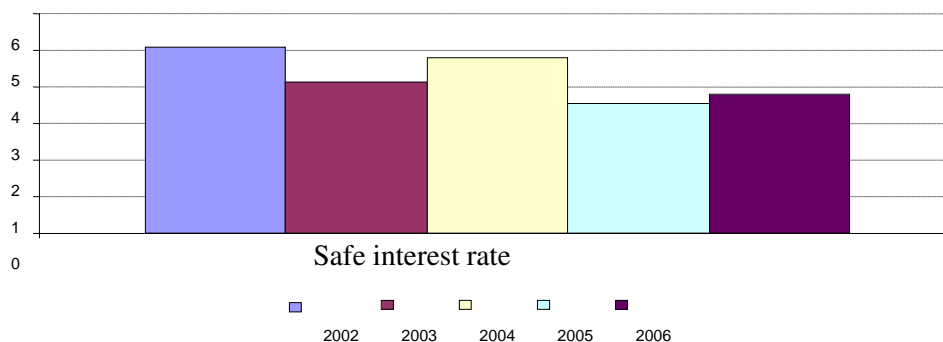
COSTS OF EQUITY AND SAFE INTEREST RATE IN THE CONTEXT WITH ROE

At present, there is a clear tendency to replace the evaluation of profitability by means of comparative indicators by economic added value. The **Economic Added Value Theory** proceeds from the fact that a company has one of the main objectives and that is the **maximization of the economic profit**. The company is not then concerned about the maximization of the book profit, which is commonly showed in the balance sheet by the difference between incomes and costs. The difference between these two concepts lies mainly in the cost items, which with economic profit incorporate also alternative costs (lost opportunity costs), and it follows that the classic expression of profit ignores in the first place the costs of equity, as foreign funds (interest paid) are not included in the profit and loss statement.

Anyway, economic profit arises only at the moment, when book profit exceeds the classic costs, as well as lost opportunity costs. At the first glance, it could seem that the reaching of the higher economic added value could be done by applying debt financing, which is cheaper. However, the bigger use of debt increases the riskiness of the investment for stockholders who usually dislike risk, and they would ask for the increase in returns of investment. It basically comes down to the fact that debt financing increases costs of equity at the same time.

The problematic category, from the point of view of quantification, present costs of equity. Their estimate is not simple. Companies do not promise common stockholders the rate of appreciation of the means invested in advance. In expressing costs of equity in the most common manner, one proceeds from safe interest rate (r_f - rate of return risk-free security), which we will increase by risk charge, which follows from the investment into the share. The classic expression of economic added value is moreover a parameter, which cannot be compared in any other way as in time series, as the expression in monetary units puts each company into a specific and unrepeatable position.

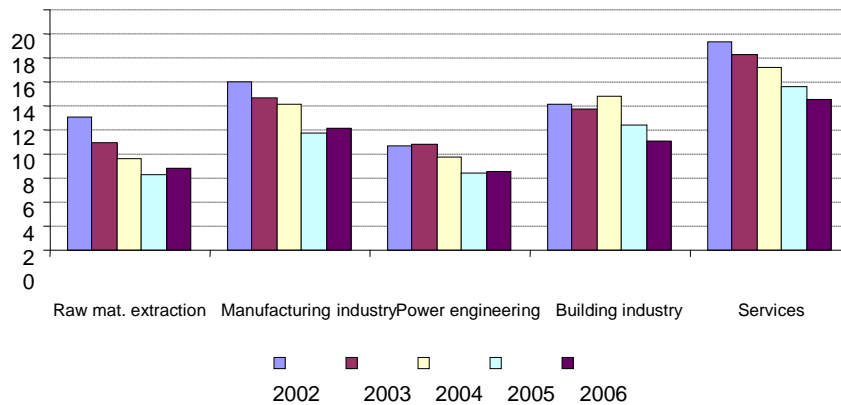
Graph 4 The development of the safe interest rate in the Czech Republic in the years 2002-2006



Source: ČNB and financial analysis of industry and trade of the Ministry of Industry and Trade of the Czech Republic

In the case of the estimate of risk, one commonly proceeds from the development of dividend yields in the previous years and this is compared with the return of safe government bonds. The sum of the interest rate of government bonds and the difference of returns from the past years is the resulting amount of the above costs of equity. This manner of determining costs of equity is a simplification. In reality, opinions on determining costs of equity differ greatly, and are a subject of economists' disputes when it comes to determining economic added value.

Graph 5 The development of costs of equity in the particular branches of industry and building industry



Source: ČNB and financial analysis of industry and trade of the Ministry of Industry and Trade of the Czech Republic in the particular years

It is apparent from the graph that the riskiest sector is the sector of services, as in assessing risk above the safe interest rate, it shows the highest values. On average, risk is calculated at the level of 10.77 % in the branch of services, manufacturing industry and building industry quantify risk at the level of 7 % and the least risky branch of investments from the point of view of costs, are raw material extraction and power engineering branches, where risk is calculated at the level of 3.5 up to 4 % above the level of the safe interest rate.

According to different theories, the attractiveness of the indicator of economic added value lies in the fact that it includes of its own the main functions of management: equity budgeting, evaluating the corporate performance, and stimulative remuneration. Economic added value could replace a series of commonly calculated comparative indicators, such ROA, EPS, net current value, internal rate of return and the like. The above economic added values and their changes enable to measure the company's performance, however, the fact of the complex detection of costs of equity leads to the fact that the EVA indicator has not rather settled in in our economic practice. Another problem is also the fact that economic added value is expressed absolutely and therefore it is not possible to provide for the comparison of this indicator by any other form

or by the branch average and the non-existence of the sufficient long time series does not enable the monitoring either in time.

From the stockholders' point of view, probably the most interesting item is profitability of equity. If the value of profitability of equity is constantly lower than returns of securities granted by the government, then the company is actually condemned to doom, as investors will not invest into such an investment. A rule generally applies that this indicator should be higher than the interest rate of safe securities. What is connected with profitability of equity is also the comparison with costs of equity (r_e)³, which we detect for particular companies; however, it is possible to carry out the comparison also with costs of equity for the given branch according to OKEČ. On the basis of the ROE comparison with those two quantities, we can divide companies into four basic categories⁴:

- The 1st category represents companies, which create economic added value and values of their profitability of equity are higher than values of costs of equity;
- The 2nd category represents companies, whose ROE is not higher than costs of equity, though, however, it is higher than returns of safe assets;
- The 3rd category are companies, which have their ROE lower than returns of safe assets, yet, they still show a positive ROE;
- The 4th category represents companies, whose profitability is negative, or they have a negative value of their equity.

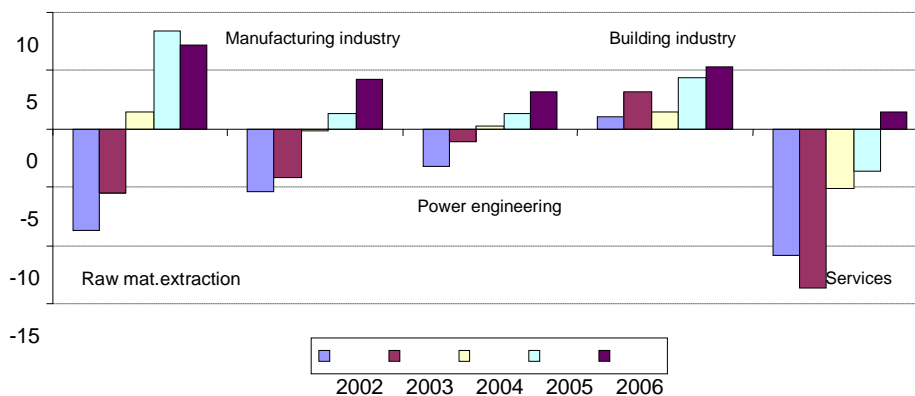
The placement of the company into one of the above stated category signals on its own the level of the economic activity of the company. Within the external analyses it can help us decide about the quality of the company. The problem consists in the fact, though, that the cost item of equity is very debatable, and at the same time, relatively, it is a hard

³ The amount of risk represents an alternative cost of equity (r_e). It is profitability (appreciation) of equity, which could be achieved in the case of an investment into an alternative (understood as evenly risky) investment opportunity.

⁴ The Methodology of the Ministry of Industry and Trade of the Czech Republic in Financial analyses of industry and building industry.

detectable item. For this analysis, which moves on the level of the comparison or evaluation of enterprise branches, the values are used, which are represented by the Ministry of Industry and Trade of the Czech Republic, which are components of Graph no. 5.

Graph 6 The difference of the ROE and costs of equity within the particular branches



Source: annual reports of the particular companies, Financial analyses of industry and building industry in the particular years of the Ministry of Industry and Trade of the Czech Republic

In evaluating efficiency by means of commensurateness of the classic comparative indicator of profitability of equity and costs of equity as lost opportunity costs, one can state that in the years from 2002 up to 2003, the analyzed enterprise branches did not create economic added value. However, one can observe that exactly in those years, risk assessment showed the highest rates. A certain turn started to take place from the year 2004, when building industry (in accordance with the economic cycle) and raw material extraction created economic added value on the level of more than one percentage above the costs of equity. The tendency to the creation of economic added value in that year was followed by power engineering, too. In the year 2005, EVA is already created in all enterprise branches, except for services, which exactly from the perspective of the rate of riskiness had their costs of equity set so high that even relatively high values of profitability of equity provided

for the creation of economic added value. In assessing the year 2006, ECA is created in all branches. A different situation is on the Stock Exchange Prague. If we assess the branch as a whole, so the only branch, which from the year 2003 up to 2005 created economic added value is power engineering. If we pay attention to the last observed period, along with the particular companies, so there are three companies in manufacturing industry, which create economic added value in the context with the set costs of equity (Philip Morris ČR, Zentiva, Spolana), in services, there is only one (RM-System) and in power engineering, there are all eight companies.

CONCLUSION

The aim of this paper was the evaluation of the efficiency of handling financial means of stockholders with companies traded on the Stock Exchange by means of the basic comparative indicator of profitability of equity in cooperation with statistical functions and its comparison with values of costs of equity and safe interest rate. What follows from the above stated text is that the development of profitability of equity both in industry as a whole, as well as on the Stock Exchange Prague shows, with some exceptions, the increasing tendency. From the year 2005, the slowdown of the pace of the growth of profitability can be already noticed.

At present, there is a distinct tendency to replace the evaluation of profitability by means of the comparative indicators by economic added value. It is possible to observe that even though profitability had a tendency to decrease in the last year, so economic added value had only a tendency to increase in the year 2005 and in the incomplete year 2006. This fact can be assessed unequivocally as positive, as economic profit arises at the moment, when book profit exceeds both classic costs and also lost opportunity costs, what finally, in its consequence, means a greater attractiveness of the stock market from the investor' point of view. However, this fact does not hold true generally. In this respect, the most problematic branch is naturally manufacturing industry, which is represented by the largest number of companies, which do not show economic added value. This is documented by the fact that costs of equity have the highest charge for the risk run in the context with the safe interest rate.

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