ECONOMIC VALUE ADDED AS A MODERN PERFORMANCE INDICATOR

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Abstract: The qualitative information support presents a step further in the business process. Many traditional indicators of performance that have been used by the companies could not provide such support. Economic value added as an innovative approach to the measurement of business performance gives us a more realistic overview about the current state of the company. Taking into account the cost of equity and the possibility of execution of numerous accounting modifications represent significant innovations regarding to other concepts. The aim of this paper is to show practical examples of the extent to which traditional assessment of the company success may differ from the business overviewed from the perspective of economic value added.

> "Until a business returns a profit that is greater than its cost of capital, it operates at a loss."
> Peter Drucker, *Harvard Business Review*

Introduction

In contemporary economic theory and practice, business performance is reflected in the maximization of market value of own capital. The research conducted in developed market economies has shown that the correlation between the stated accounting net profit the indicators and stock market movement derived from it, is not strong enough. Having this in mind, in addition to traditional accounting measures of business performance, a new model of measuring business performance has been developed, its name being - economic value added (EVA). The EVA model, unlike the traditional model of measuring business performance, in addition to costs of borrowed capital also takes into account own capital costs, which depend on alternative investments made by investors, bearing the same risk. EVA is the difference between net profit after tax (NOPAT) and the required return on the financing of own and others' capital. This way EVA gives a central role to the drop or increase in value of own capital. EVA positive amount in a given period means that the management increased the value for owners, and EVA negative amount means that there is a decrease of the value for owners.

In the following pages, using the manufacturing enterprise Carnex LLC as a sample enterprise, a leader in the production of meat and meat products in Serbia, a study will be presented aimed at showing the results of using this concept.

Analysis of accounting data based on the concept of economic value added

Economic value added is the difference between net operating profit after taxes (NOPAT) and cost of capital. It can be calculated using the following formula (Stewart, 1991, pp. 136-137):

$$EVA = NOPAT - WACC\% * IC, \quad (1)$$

whereas: EVA - Economic value added; NOPAT - Net operating profit after tax, WACC% - weighted average cost of capital; IC - Total business capital invested.

TABLE 1. CALCULATING THE NET OPERATING PROFIT AFTER TAX (NOPAT)
in thousand of Serbian Dinars

Elements	Year				
	2004	2005	2006	2007	2008
1. NOPAT BEFORE ADJUSTMENT	382,373	290,975	296,953	606,695	519,709
2. ACCOUNTING MODIFICATIONS (a-m)	73,041	203,653	111,974	279,994	113,039
Changes in the value of stock	0	0	0	0	0
LIFO method	0	0	0	0	0
Long-term provisions	0	91,516	-65,355	38,610	-30,816
The costs of research and development	0	0	199	184	164
The costs of marketing and education	6,983	6,952	7,212	6,610	5,793
Investment costs	0	0	61,671	100,636	55,695
Restructuring costs	5,437	0	0	0	8,357
Goodwill	0	0	0	0	0
Depreciation of fixed assets	7,088	44,775	46,038	53,088	0
Current assets		7,852	5,432	8,956	8,998
Operating leases	0	0	0	0	0
Items which are not connected to the business activities of companies	0	0	0	0	0
Income tax	53,533	52,558	56,777	71,910	64,848
3. NOPAT AFTER ADJUSTMENT (1-2)	455,414	494,628	408,927	886,689	632,748

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TABLE 2. CALCULATING INVESTED CAPITAL (IC)
in thousand of Serbian Dinars

Elements	Year				
	2004	2005	2006	2007	2008
1. BUSINESS INVESTED CAPITAL BEFORE ADJUSTMENT	2,858,614	2,636,233	3,512,845	3,989,505	4,441,252
2. ACCOUNTING MODIFICATIONS (a-m)	12,420	113,303	161,656	189,626	160,204
Changes in the value of stock	0	0	0	0	0
LIFO method	0	0	0	0	0
Long-term provisions	0	91,516	65,355	38,610	30,816
The costs of research and development			199	383	548
The costs of marketing and education	6,983	13,935	21,147	27,757	33,550
Investment costs	0	0	61,671	100,636	55,695
Restructuring costs	5,437	0	0	0	8,357
Goodwill	0	0	0	0	0
Depreciation of fixed assets	0	0	0	0	0
Current assets		7,852	13,284	22,240	31,238
Operating leases	0	0	0	0	0
Items which are not connected to the business activities of companies	0	0	0	0	0
Income Tax	0	0	0	0	0
3. BUSINESS INVESTED CAPITAL AFTER ADJUSTMENT	2,871,034	2,749,536	3,674,501	4,179,131	4,601,456

In calculating EVA the following procedure was taken:

a. Accounting data adjustments that contribute to the realistic presentation of business performance through the calculation of NOPAT and ICs. However, it should be noted that there exists no generally recognized list of necessary adjustments and the fact that there is a large number of corrections in practical operations contributes to uncertainties in regard to this way of calculating business performance when compared to the accounting standards and regulations (Yang, 2001, pp. 205). So far, about 160 types of adjustments to accounting data have been identified, from which the 13 most commonly used were taken into account for the research, these are: (Grant, 2003, pp. 170-175): Changes in the value of stock, LIFO method, long-term provisions, costs of research and development, marketing and training costs, investment costs, restructuring costs, Goodwill, depreciation of fixed assets, correction of working capital, operating lease, the items not connected with the business activities of companies, income tax.

b. Calculating the net business profit before tax (NOPAT) and the business invested capital (IC). The aforementioned modifications of accounting data were used for making the calculations.

c. Calculating WACC. During the time period observed, the company's financing mainly from its own funding sources had a tendency of growth. In the period from 2004 to 2008, in addition to own capital, the funding sources also included short-term financial liabilities. Specifically, to calculate the EVA it was important to separate the cost of capital to: the cost of own and borrowed capital costs. Own capital costs have been calculated on the basis of the weighted average interest rate, which for short-term financial liabilities in the period observed amounted to: 12.5, 9.18, 9.31, 8.65 and 8.83, while the total weighted average interest rate for long-term loans were: 0, 5.12, 0, 5.45, 5.32.

Based on internal data (the expected return rate on non-risk investments - 6.2% risk premium - 6.92%, the coefficient β - 1.15%), which the company uses for the assessment of suitability of the investment project, by using the CAPM model, the calculated of its own capital:

$$koa = krf + \beta (km - krf) = 6.2\% + $$
$$+ 1.15 \times 6.92 = 14.16\%, \qquad (2)$$

whereas: *krf* - rate of return without risk, β - beta, a measure of systematic risk of specific actions; *km* - the expected market return rate, *(km - krf)* - risk premium.

After the cost of own capital and borrowed capital costs have been calculated, the weighted average cost of capital (WACC) can be calculated. WACC is calculated using the following formula:

$$WACC = (Pd \times Kdi) + (Ps \times Ks), \qquad (3)$$

whereas: *Kdi* - the cost of certain types of borrowed capital; X - costs of share capital; Pdi and Ps - the proportion of the share (own and others') of each source in the overall fincancing sources, provided that Pdi + Ps = 1.

d. The calculation of EVA has been conducted (Table 3).

Research results

Based on official data from the balance sheet, Carnex JSC has in each year, in the period from 2004 to 2008 had positive results (2004 - 75.324 thousand, 2005 - 53.805 thousand, 2006 - 120.979 thousand, 2007 - 477.119 thousand and in 2008 - 587.423 thousand dinars). Unlike traditional financial analysis, when applying the EVA concept, the results of the research are different. The accounting modifications that were made, and having taken into account the overall cost of capital caused the appearance of a negative amount of EVA in 2006, an amount of 69.229 thousand dinars. Positive results which were recorded in 2004 and 2007 are higher than the ones gained through applying the EVA concept by 11.101 and 130.715 thousand. In 2005, the EVA concept shows a positive result which is almost three times higher than the one gained through accounting methods, whereas in 2008 EVA displays a result which is lower by 567.295 thousand dinars.

TABLE 3. CALCULATING THE COST OF CAPITAL AND ECONOMIC VALUE ADDED
in thousand of Serbian Dinars

Elements	Year				
	2004	2005	2006	2007	2008
1. BUSINESS INVESTED CAPITAL BEFORE ADJUSTMENT	2,858,614	2,636,233	3,512,845	3,989,505	4,441,252
Capital	2,287,377	2,233,877	3,115,678	3,668,449	4,191,893
Long-term loans	0	18,928	0	182,489	49,617
Short term liabilities	571,237	383,428	397,167	138,567	199,742
Capital	80.02	84.74	88.69	91.95	94.39
Long-term loans	0	0.72	0	4.57	1.12
Short term liabilities	19.98	14.54	11.31	3.47	4.50
2. BORROWED CAPITAL COSTS					
The cost of short-term financial liabilities (h. x (1 –i./100))	11.78	8.61	9.31	8.22	8.30
The total weighed interest rate for short-term financial liabilities	12.50	9.18	9.31	8.65	8.83
Effective tax rate	5.75	6.20	0	5.01	6.10
b) The cost of long-term loans (k. x (1 - l./100))	0	4.80	0	5.18	5.00
The total weighed interest rate for long-term loans	0	5.12	0	5.45	5.32
Effective tax rate	5.75	6.20	0	5.01	6.10
3. COSTS OF OWN CAPITAL	14.16	14.16	14.16	14.16	14.16
4. WACC (d. x 2.) + (e. x j.) + (f. x g.) x 100	13.68	13.29	13.61	13.54	13.79
5. NOPAT AFTER ADJUSTMENT	455,414	494,628	408,927	886,689	632,748
6. BUSINESS INVESTED CAPITAL AFTER ADJUSTMENT	2,871,034	2,749,536	3,674,501	4,179,131	4,601,456
7. CAPITAL COSTS (6. X 4.)	391,191	350,255	478,156	540,286	612,620
8. EVA (5. - 7.)	64,223	144,373	-69,229	346,403	20,128

FIGURE 1. COMPARATIVE ANALYSIS OF THE TRADITIONAL BUSINESS
RESULTS ANALYSIS AND THE EVA CONCEPT
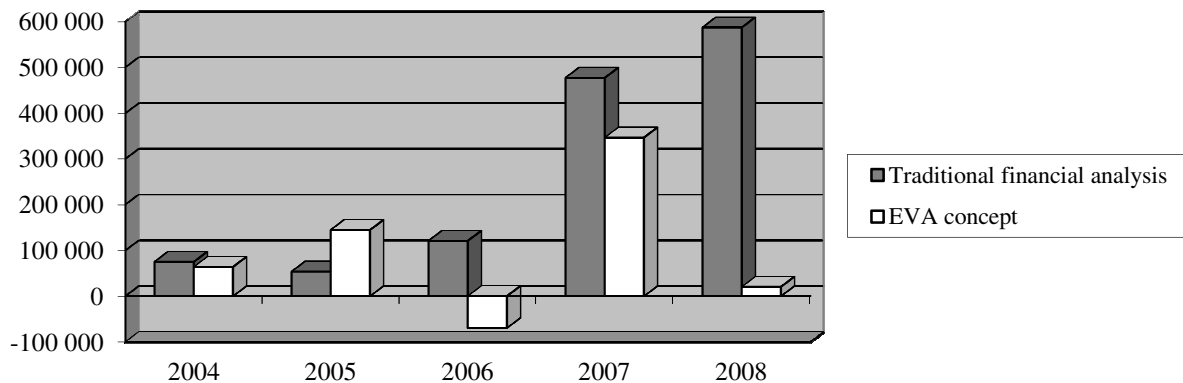
Concluding remarks

Over the last two decades we have witnessed many changes which have had great influence on the performance of companies and their activities (development of securities markets and their deregulation, the progress of information technology, etc.). The changes that occur contribute to the high degree of capital mobility in a very short period of time. It has become clear that it is insufficient to achieve a high degree of competitiveness only in the retail market, but also in the capital market. In this environment, the basic requirement imposed is meeting the expectations and requirements of owners through maximizing the market value of own capital. In this context, contemporary models for measuring business performance, such as economic value added, gain importance.

The EVA model has many potential benefits and advantages, some of the more important being (Yang, 2001, pp. 263-68): it takes into account the opportunity cost of own capital, directs managers to act like owners, EVA operates independent of the accounting standards and uses creative approaches in creating the financial reports, it gives a clear and understandable result expressed in absolute terms, it is a simple analysis which directs towards the key

factors of value; it also has the possibility of comparison with the competition, enables the selection of the best alternative to increase the value of own capital, and it is a clear and understandable basis for rewarding managers within all business units - if managers receive a bonus, the owner can always earn more than he had anticipated.

Although the calculation of economic value added appears simple at first glance, in practice there is a whole range of issues. The first issue deals with the adequacy of adaptation of the original accounting data in order to provide an analysis which is relatively independent of the accounting rules, guidelines and standards. If the accounting values were based on cash flows, economic value added would more accurately reflect the economic performances of a company. In addition, the selection of adaptation methods is largely marked by subjectivity. The next great dilemma is the one dealing with the calculation of the cost of capital. Financial theory offers a variety of methods, each of them having their advantages and disadvantages. Although, in most cases the calculation of the cost of capital is based on the use of the CAPM model, which was argued to be inadequate for the less developed capital markets. Despite this, the essential contribution of economic value added can be seen when taking into account all the costs of capital.

In Serbia, the application of the concept of economic value added could lead to significant improvements and developments in companies. Through additional reports, shareholders would be better informed, which would contribute to attracting new investors and the reduction of additional debt.

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