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Application of Finance Management Instruments in Business Entities for example of PGE and Tauron Companies

Abstract:

Running a business involves the risk borne by the owners. They are most often identified with failure to achieve expected rates of return by investors. The same mechanisms apply to business entities whose one of the main objectives is to maximize the profits level.

Equally important task, and according to the larger group of professional literature authors the most important is the increase of the company's market value.

Both purposes have common ground, involving the selection of indicators and instruments for the assessment of the financial condition and the value added of analyzed business entity.

The objective of this paper is to compare mechanisms used to assess the financial condition of enterprises and indicate imperfections of measures based solely on bookkeeping data derived from an annual financial report. Characteristic features and the more objective nature of economic measures, in particular such as the Economic Value Added (EVA), are presented.

Key words: annual financial report, financial ratio, finance management, stock – exchange company, economic value added.

JEL Codes: G 23, G 32.

Introduction

Making right financial decisions is crucial for the proper operation of business entities and achievement of established goals. Specialist literature indicates two basic aims of the functioning of enterprises, namely net profit maximization and an increase in a business entity's market value [Szyszko, Szczepański (Eds.) 2003, pp. 23–24].

Financial decisions are made based on financial data obtained, first and foremost, from an enterprise's annual financial report. A vital element is to select a method of assessing a business entity's financial condition. Modern concepts point to the drawbacks of the ratio-based assessment of financial condition and suggest alternative solutions in that scope.

The main purpose of this paper is to demonstrate the imperfection of ratio-based financial condition evaluation method, which is based on accounting data and an attempt to confirm the higher objectivity of economic measures, based on the mechanism of residual income and Economic Value Added.

To reach submitted purpose, the research hypothesis was formulated, according to which the results of the analysis of the financial condition of enterprises from energy sector "PGE and TAURON" by traditional methods (financial indicators) and economic value added method can supply significantly different from each other results.

Assessment of the financial situation of enterprises has been based on data from financial statements published in the years 201 –2013 and using the information outside the financial statements primarily concerning their costs of equity and liabilities.

Data sources for the evaluation of company's financial condition

The legal instrument regulating Poland's accounting and reporting system is the Accounting Act having been in force since 1 January 1995¹.

Pursuant to the provisions of the act an annual financial report consists of the following documents [Bednarski 2007, p. 33]:

- Balance sheet,
- Profit and loss account,
- Supplementary information,
- Statement of cash flows,
- Statement of changes in equity.

¹ The Accounting Act of 29 September 2004, Journal of Laws of 1994, No. 129, Item 559, as amended.

Full reporting applies to business entities which, for the present and preceding financial year, have achieved two of the following three figures [Jerzemowska 2006, p. 48]:

- Average annual employment calculated as full time jobs exceeded 50 people,
- Total balance sheet assets as of the end of the financial year exceeded the Polish currency equivalent of EUR 2,000,000,
- Net proceeds from sales of products, goods and from financial operations exceeded the Polish currency equivalent of EUR 4,000,000.

Entities that have not achieved at least two of the above figures prepare their annual financial reports in a simplified form, composed of a balance sheet, profit and loss account, and supplementary information.

Documents used to analyse an enterprise's financial position include mainly the balance sheet and profit and loss account.

The balance sheet is part of a business entity's annual financial report. That document contains a summary of an enterprise's assets and sources of their financing as of a specified day [Pomykalska, Pomykalski 2007, p. 36].

The chief principle behind the balance sheet structure is that assets should equal liabilities.

Assets are arranged according to the criterion of their increasing liquidity, while being divided according to the criterion of time (long- and short-term assets).

Liabilities are organized according to their due dates (maturities), while they are grouped together in accordance with the capital origin principle.

The classification of asset financing sources allows determining the level of financial risk associated with an enterprise's activity and its effectiveness in using equity and external capital.

Unlike the balance sheet, which shows resource figures, i.e. the material and capital position of an enterprise as of a specified balance-sheet day, the profit and loss account presents stream values, i.e. costs borne and losses incurred as well as income derived and profits made in a reporting period. Thus, the latter is a document that supplies information on the functioning of an enterprise in a given period [Wypych (Ed.) 2007, p. 129].

The profit and loss account is divided into three basic areas summed up by appropriate categories of profit or loss, being commonly used in ratio analysis [Czekaj, Dresler 2001, p. 86]:

- Core business (operating) activity area summed up by Operating Profit or Loss,
- Financial activity area summed up by Gross Profit or Loss,
- Tax area summed up by Net Profit or Loss.

The essence of the indicator – based evaluation of business entities' financial condition

A properly performed assessment of an entity's financial condition requires sufficient information. Most of that is acquired from an enterprise's annual financial report, and in particular from its balance sheet and profit and loss account.

However, the so called non-balance-sheet information is important as well, for example:

- Number of shares issued by an enterprise,
- Market value of shares at the beginning and end of the reporting period,
- Dividend figures for all share types,
- Interest rate of liabilities.

The above information is not of the utmost importance to the ratio analysis of an enterprise's financial position but constitutes a vital component of that assessment's alternative forms. One of those will be presented further in the study.

A comprehensive financial analysis of an enterprise ought to include [Ga-brusewicz 2005, pp. 30–32]:

- Horizontal analysis allowing determining the dynamics of specific components of the profit and loss account as well as those of the balance sheet as compared with preceding periods.
- Vertical analysis making it possible to determine the structure of the profit and loss account and balance sheet, based on which the importance of their specific components may be evaluated.
- Ratio analysis that supplements the two above-mentioned analyses.

According to specialist literature a financial ratio is a coefficient created on the basis of information contained in an annual financial report of an enterprise. Its structure is most often a relationship between two phenomena, describing the financial, material or capital structure of an enterprise [Jerzewska 2006, pp. 117–120].

The ratio analysis of an enterprise's financial position most frequently employs one of the following three methods [Sierpińska, Jachna 2006, p. 24]:

- Analysis in time – consists in comparing financial ratios for a given enterprise with their historical values, which allows observing a tendency occurring for a studied phenomenon.
- Analysis in space – consists in comparing financial ratios of a studied enterprise with those of its competitors within the industry, which makes it possible to evaluate the entity's position in the market.

- Analysis using reference values – consists in verifying whether ratio values are within appropriate ranges. Limits of the ranges are most often recommended by specialist literature.

As indicated by authors of specialist literature, there are the following key groups of financial ratios [Waśniewski, Skoczylas 2004, pp. 72–74]:

- Financial liquidity ratios,
- Profitability ratios,
- Activity (efficiency) ratios,
- Debt ratios,
- Capital market position ratios.

Financial liquidity is defined as the ability of a business entity to timely pay its short-term liabilities by using its current assets. Specialist literature determines reference value ranges for the ratios. When their actual values fall outside the range, an enterprise suffers from financial under- or over-liquidity [Gabrusewicz 2005, pp. 226–227].

The most frequently applied financial liquidity ratios include:

- Current ratio,
- Quick ratio,
- Cash ratio.

Profitability is defined as the financial condition of an enterprise expressed by the profit or loss on its economic activity [Czekaj, Dresler 2001, p. 117].

The value of profit itself is not an objective piece of information, and thus that value is set against items of the annual financial report describing the volume of an enterprise's activity (income from sales, asset values and equity values).

Profitability ratios are considered the most synthetic measures to assess an entity's economic activity. Their values are affected by all economic phenomena and processes taking place in a company.

Profitability measures include:

- Return on Sales (ROS),
- Return on Equity (ROE),
- Return on Assets (ROA),
- Return on Investment (ROI).

Activity (efficiency) ratios allow evaluating an enterprise's activity in respect of managing its material resources and the time needed by it to pay its liabilities. Those ratios describe a company's financial position. Moreover, they inform about the effectiveness of its use of assets and its capability to convert stocks and receivables into cash [Wypych (Ed.) 2007, p. 178].

Basic activity (efficiency) ratios include:

- Receivables turnover ratio,
- Day's sales on hand,
- Stock turnover ratio,
- Working capital productivity.

Debt (leveraging) ratios allow assessing an enterprise's capital structure, its ability to pay liabilities, and the strategy it employs in financing its operations. Thanks to being financially supported by external capital, it is possible for an enterprise to take advantage of the financial leverage effect that enables a profitability increase [Dudycz 2002, p. 154].

The most popular debt-assessment ratios include:

- Debt to total assets ratio,
- Interest cover ratio,
- Debt structure ratio,
- Golden balance-sheet rule,
- Golden rule of banking.

Ratios concerning an enterprise's position in the capital market are used by stock market investors when making decisions on the purchase or sale of shares in a given company. They show whether shares are attractive in respect of their market prices or dividends.

Key capital market ratios include:

- Earnings per share,
- Price-earnings ratio,
- Dividend yield,
- Dividend payout rate.

Financial ratios are calculated based on data expressing the state of affairs at the beginning and end of a studied reporting period.

In addition, the ratios are computed using average values as of the beginning and end of an accounting year.

Therefore, differences between their values reflect changes in a studied phenomenon resulting from financial decisions made by an enterprise's management during that period and the overall economic situation at that time.

Economic Value Added as an alternative and modern concept of evaluating companies' financial situation

The measures presented earlier in the study are imperfect and there are a constantly growing number of those who criticise their being used as the only measures of the financial condition of enterprises.

They are described as the so called bookkeeping measures whose informative value will decrease due to the transformation of industrial enterprises into knowledge-based ones. As a result of those transformation processes, book values in annual financial reports will change, hence affecting the levels of ratios [Dudycz 2002, p. 175].

Another objection is that the analyses use the book profit, which impacts the way in which obtained results are perceived; hence, it is not an economic but only a bookkeeping point of view that is represented.

Numerous objections were raised concerning the weakness of the book profit and its application in the ratio analysis of the financial position of enterprises. The most important of those objections include [Rappaport 1999, pp. 11–15]:

- Effects on the financial result of alternative accounting methods used,
- Disregarding incurred risk,
- Disregarding changes in the value of money over time, which prevents a realistic comparison of obtained results,
- Not taking into account the dividend policy, hence the cost of equity in enterprises,
- Disregarding investment outlays made.

The table below shows the evolution of measures applied in assessing the financial position of enterprises.

Table 1. Evolution of assessment criteria for the financial condition of enterprises

Period	By 1970s	1980s	1990s	Contemporarily
Employed measures	Return on Sales (ROS)	Earnings Before Interest and Taxes (EBIT)	Return on Assets (ROA)	EVA
		Net profit dynamics	Return on Equity (ROE)	CVA
				SVA
				CFROI

Source: own work based on: Helfert E.A. 2004, pp. 495–503.

The measures used nowadays allow, in practice, to apply the VBM (Value Based Management) principle that consists in managing an enterprise with a view of increasing its market value. Those measures do not indicate how much an enterprise is worth but inform whether its value increases [Marcinkowska 2007, p. 512].

The most important of those measures include [Helfert 2004, pp. 496–502]:

- Economic Value Added (EVA) – it is the most popular measure that adjusts the operating profit by taking into account the cost of invested capital. It will be discussed further in the paper.
- Cash Value Added (CVA) – its concept is similar to EVA, however, it is based on monetary (cash) values,
- Shareholder Value Added (SVA) – its distinctive feature is that it does not take into account historical figures but is based on investors' expectations about the future cash flow generation,
- Cash Flow Return on Investment (CFROI) – it is an average IRR (Internal Rate of Return) of all investment projects carried out by an enterprise.

The EVA measure is based on the Residual Income concept by Alfred Marshall. He was the first to draw attention to the defectiveness of bookkeeping measures that, when used in determining the net profit takes only financial costs into account, while completely disregarding equity costs borne by an enterprise. The Residual Income is defined as the sum of an enterprise's net profits reduced by shareholders' remuneration costs (costs of equity) [Dudycz 2002, pp. 176–178].

The concept of the Economic Value Added was first presented by the Stern Stewart & Co. consulting company at the end of 1980 based on the earlier presented Residual Income mechanism [Helfert 2004, pp. 503–506].

The idea behind the EVA is to modify the Residual Income in order to achieve a more objective picture of a company by getting rid of "accounting anomalies". In order to eliminate the possible bookkeeping "distortions" resulting from the adoption of a specific balance-sheet policy, each element of the formula needs to be adjusted. The essence of the adjustment is to compute a surplus of the adjusted Earnings Before Interest and Taxes (EBIT) reduced by income taxes over the costs of all capitals involved to generate those earnings. Among others, the following should be determined:

- Earnings Before Interest and Taxes (EBIT) generated only from operating activity (without balance-sheet and non-balance-sheet financing elements),
- Adjusted income tax that does not take into account protection in the form of regarding costs of financing as tax deductible ones,
- Volume of all capitals financing a company's activity classified into their specific types.

To put it very simply, it can be said that the EVA is a difference between the operating profit reduced by taxes (the so called Net Operating Profit After Tax – NOPAT) and the amount of cost of all capitals used by an enterprise.

The mathematical formula of the EVA is as follows [Wypych 2010, p. 43]:

$$\text{EVA} = \text{EBIT} \times [1 - d] - [\text{WACC} \times (A - \text{CL})]$$

where:

EBIT – Earnings Before Interest and Taxes,

d – income tax rate,

WACC – weighted average cost of total capital in an enterprise,

A – value of assets

CL – value of current liabilities.

The basic feature that makes the EVA stand out against other methods of assessing the position of an enterprise is that it uses the average weighted cost of capital mechanism, i.e. takes the cost of equity into account as well.

That is undoubtedly a great merit of that measure as it reduces the book profit value disclosed in an annual financial report by subtracting dividends paid to shareholders as a result of net profit distribution at the General Meeting of Shareholders.

Empirical analysis of variances between Book Profit and Economic Value Added of Energy sector companies

The last part of the study presents practical differences between the book profit and EVA measure.

A PGE and TAURON companies will be analysed. In its annual financial report the following financial figures were disclosed as of the end of the 31 December 2012 – 31 December 2013 financial year:

Table 2. Data obtained from the PGE and TAURON annual financial reports (in thousands PLN)

Component	PGE		TAURON	
	31 Dec 2012	31 Dec 2013	31 Dec 2012	31 Dec 2013
Sales Revenues	30 481 076	30 144 855	24 752 985	19 131 122
EBIT	4 377 759	5 060 441	2 165 129	1 934 066
Net Profit	3 644 185	4 143 163	1 476 392	1 308 318
Assets	56 703 604	60 751 308	31 273 677	32 355 570
Equity	40 716 929	43 381 917	16 306 681	17 327 165
Long-term liabilities	8 474 881	9 312 536	9 081 234	9 304 341
Current liabilities	7 217 437	7 790 509	5 392 423	5 257 730

Source: own work based on www.gkpge.pl and www.tauron-pe.pl – access date: 05.12.2014.

The table below presents supplementary information necessary to determine the economic value added figure.

Table 3. Supplementary information concerning the PGE and TAURON

Component	PGE		TAURON	
	31 Dec 2012	31 Dec 2013	31 Dec 2012	31 Dec 2013
Corporate income tax rate	19 %	19 %	19 %	19 %
WACC	6,6 %	6,2 %	6,3 %	5,6 %
Number of shares	1 869 760 829	1 869 760 829	1 752 549 394	1 752 549 394
Dividend per share	0,86	1,10	0,20	0,15

Source: own work based on www.gkpge.pl and www.tauron-pe.pl – access date: 06.12.2014.

The above data allowed arriving at the following values of financial measures:

Table 4. Financial measures for the PGE Company

Component	31 Dec 2012	31 Dec 2013	Dynamics/ change
Net profit	3 644 185	4 143 163	+ 13,7 %
ROS	12,0 %	13,7 %	+ 1,7 p.p.
ROE	9,0 %	9,6 %	+ 0,6 p.p.
ROA	6,4 %	6,8 %	+ 0,4 p.p.
EVA	279 897 768	815 387 672	+ 291,3 %
Relationship between EVA and net profit	7,7 %	19,7 %	+ 12,0 p.p.

Source: own calculations based on data in Tables 2 and 3.

Table 5. Financial measures for the TAURON Company

Component	31 Dec 2012	31 Dec 2013	Dynamics/ change
Net profit	1 476 392	1 308 318	(11,4 %)
ROS	6,0 %	6,8 %	+ 0,8 p.p.
ROE	9,1 %	7,6 %	(1,5 p.p.)
ROA	4,7 %	4,0 %	(0,7 p.p.)
EVA	123 235 488	49 144 420	(60,1 %)
Relationship between EVA and net profit	8,3 %	3,8 %	(4,5 p.p.)

Source: own calculations based on data in Tables 2 and 3.

Figure 1. Profitability ratios for PGE and TAURON companies in 2012 year

Source: own work based on data in Table 5.

Figure 2. Profitability ratios for PGE and TAURON companies in 2013 year

Source: own work based on data in Table 5.

Figure 3. Relationship between EVA and net profit for PGE and TAURON in 2012 – 2013 periods

Source: own work based on data in Table 5.

Analysis results presented in the above tables and figures clearly show differentiation of the results obtained by traditional methods, and EVA.

In the case of PGE Company its level of profitability has recorded a slight increased in analyzed period (from 0,4 to 1,7 percentage points). However, in the same period the EVA's level has increased by nearly 300% and the ratio of EVA to net profit by 12 percentage points.

The situation in terms of profitability in TAURON Company has slightly deteriorated in the analyzed period (ROE's level has decreased by 1,5 percentage points). Analyzing the same company using the Economic Value Added, it turned out that the indicator's value has decreased in the same period by more than 60 %, and EVA's to net profit ratio has decreased by 55%.

In 2013, ROE's level for PGE was higher by 2 percentage points than in TAURON Company, while in the same year, EVA's to net profit ratio was higher in the case of PGE by almost 16 percentage points, which means a much greater difference between these two enterprises in area of their financial condition.

Conclusions

The purpose, formulated in the introduction has been reached. Research hypothesis can be positively confirmed.

Results of the analysis make possible to confirm the possibility of obtaining different results in the assessment of the financial situation of the company in the case of application financial ratios, based on a different approach to the financial information provided by the business entities.

PGE and TAURON case confirms higher objectivity of financial indicators based on residual income like EVA than traditional measures like profitability ratios.

The increasing popularity, both in literature and in everyday practice, of economic measures that take into account the total cost of capital incurred by business entities should also be emphasised.

Those measures are more and more commonly used, in particular when faced with the fact that modern concepts of finance management and enterprise value appraisal set an increase in market value, rather than the earlier maximization of book profit are the most important purpose of the company.

References

Literature:

- Bednarski L. (2007), *Analiza finansowa w przedsiębiorstwie [Financial analysis in the enterprise]*, PWE, Warszawa.
- Czekaj J., Dresler Z. (2001), *Zarządzanie finansami przedsiębiorstwa. Podstawy teorii [Finance management in the enterprise. The rudiments of theory]*, PWN, Warszawa.
- Dudycz T. (2002), *Finansowe narzędzia zarządzania wartością przedsiębiorstwa [Financial instruments of enterprise value management]*, Wydawnictwo AE we Wrocławiu [Wrocław University of Economics Publishing House], Wrocław.
- Gabrusewicz W. (2005), *Podstawy analizy finansowej [The rudiments of financial analysis]*, PWE, Warszawa.
- Helfert E.A. (2004), *Techniki analizy finansowej [The Financial analysis techniques]*, PWE Warszawa.
- Jerzemowska M. (2006), *Analiza ekonomiczna w przedsiębiorstwie [Economic analysis in the enterprise]*, PWE, Warszawa.
- Marcinkowska M. (2007), *Ocena działalności instytucji finansowych [Appraisal of operations of financial institutions]*, Difin, Warszawa.
- Pomykańska B., Pomykański P. (2007), *Analiza finansowa przedsiębiorstwa [Financial analysis of the enterprise]*, PWN Warszawa.
- Rappaport A. (1999), *Wartość dla akcjonariuszy. Poradnik menedżera i inwestora [Creating shareholder value: a guide for managers and investors]*, WIG-Press, Warszawa.
- Sierpińska M., Jachna T. (2006), *Ocena przedsiębiorstwa według standardów światowych [Enterprise assessment according to international standards]*, Wydawnictwo Naukowe PWN, Warszawa.
- Szysko L., Szczepański L. (Eds.) (2003), *Finanse przedsiębiorstwa [The finance of enterprise]*, PWE, Warszawa.
- Waśniewski T., Skoczylas W. (2004), *Teoria i praktyka analizy finansowej w przedsiębiorstwie [The theory and practice of financial analysis in the enterprise]*, Fundacja Rozwoju Rachunkowości w Polsce [Foundation of Accounting Development in Poland], Warszawa.
- Wypych M. (Eds.) (2007), *Finanse przedsiębiorstwa z elementami zarządzania i analizy [The finance of enterprise with elements of management and analysis]*, Absolwent, Łódź.

Wypych M. (Eds.) (2010), *Instrumenty zarządzania finansami w przedsiębiorstwie* [*Elements of finance management in the enterprise*], SWSPiZ, Łódź.

Legal Acts:

The Accounting Act of 29 September 2004, Journal of Laws of 1994, No. 129, Item 559, as amended.

Electronic bibliography (access date 5-6.12.2014):

www.gkpge.pl.

www.tauron-pe.pl.