

Available online at www.sciencedirect.com**ScienceDirect**

Procedia Economics and Finance 26 (2015) 484 – 489

Procedia
Economics and Finance

www.elsevier.com/locate/procedia

4th World Conference on Business, Economics and Management, WCBEM

Economic Value Added as a measurement tool of financial performance

Salaga Jakub ^{a*}, Bartosova Viera ^a, Kicova Eva ^a^a University of Zilina, FPEDAS, Department of Economics, Univerzítina 1,010 26 Zilina Slovakia

Abstract

The value-based concept of measuring business performance has its theoretical basis in economic profit. The idea of economic profit is based on the existence of opportunity costs that are very well known in the economic theory. The article deals with measurement of the economic profit by the Economic Value Added indicator. It points out, that when considering the economic profit and its measurement one must first distinguish the theoretical basis of the concept, forms of application and possibilities of application in practice. The gathered data and the transformation of this data from the form provided by the accounting into the desired patterns, respectively into the structures of Economic Value Added plays a key role in these processes. The aim of this paper is to present one of the possible methods of calculating the EVA indicator in conditions of Slovak companies and accounting legislation in Slovakia. Primary data as well as secondary data were used for the purpose of this paper, along with various methods such as analysis, synthesis, deduction, etc.

© 2015 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of Academic World Research and Education Center

Keywords: Value based management, shareholder value, economic value added, capital, equity, debt, cost of capital;

1. Introduction

In recent years a significant shift of thought towards preferring the market value of the company has occurred in the area of evaluation of the effectiveness of business activities. The creation of value for its owners has become the ultimate objective of economic enterprise. After World War II, companies focused on discounted cash flows (DCF).

* Jakub Salaga. Tel.: +421/41/513 32 49
E-mail address: jakub.salaga@fpedas.uniza.sk

However, DCF proved to be the main tool of analysis particularly in the evaluation of projects, not when assessing corporate performance. This is due to lack of data needed to measure value. Step by step, new indicators as ROA (Return on Assets), ROE (Return on Equity), ROS (Return on Sales) etc. have been introduced. Under the pressure of globalization and economies relying on the Anglo-Saxon management principles many shortcomings of assessment criteria started to be criticized. Insensitivity to the risk, not respecting different time value of the money, deficiency of profit as a measure for evaluating the effects of corporate actions (failure to take account of the capital costs, the possibility of manipulation of profit within the accounting and so on.) were criticized in particular.

In response to mentioned criticism, new criteria for evaluating business performance oriented to the owner began to appear. The firm Stern Stewart & Co. came up with a solution and implemented the EVA indicator - Economic Value Added. Indicator is trying to faithfully express the true economic profit of the enterprise. Its significant advantage over conventional approaches is an understandable combination of the economic performance of the company and the degree of risk that is necessary to achieve this performance. (Kollar et al., 2014) EVA represents the most advanced instrument of business performance measurement based on the principle of value management. The reason for this is a relatively simple approach compared with other evaluation criteria, and also possibility of complex application of this indicator in the system of management. EVA acts as a measure of business performance, management system, method of motivation and way of thinking (these are the four main areas of application of EVA concept defined by Stern Stewart & Co). The concept of EVA gradually penetrates into the practice of financial managers in less developed economies than country of origin of this evaluation indicator. However, the original concept and various construction forms of EVA require relatively large adjustments to the accounting data derived from the accounts of various national economies, which are despite accounting harmonization in the world still different in some aspects. (Kiestik et al., 2014)

2. Concept of EVA in Slovak enterprises

The concept of economic profit is in Slovakia better known in the theoretical sphere, where the possibilities of its usage are constantly debated. In financial practice of Slovak enterprises the attention is paid to this indicator usually only in financial analysis and not as a managerial concept.

There are several reasons: some originate in the fate of our businesses management in traditional evaluation methods, other are caused by "incompatibility" of precise construction of EVA with form of accounting as a data base in Slovakia. Wider application of this approach is also prevented by a poorly developed capital market in Slovakia, because it lacks the necessary data. A relatively short time since the legalization of private property and lack of domestic experience in the operation of EVA leads to mistrust and fear of complications in its implementation among our enterprises. Owners and managers of Slovak companies change very slowly their value orientation, as the concept of maximum accounting profit and profitability based on it were preferred for many years.

2.1. Basic construction of EVA – application starting point

In principle, it is possible to apply various designs of EVA indicator in conditions of Slovakia. Briefly, let us remember the basic form of the indicator.

One of the fundamental application forms of EVA is considered a structure (1), which reveals the fact that the value of the economic profit depends on the value of equity (E), on Return on Equity (ROE) and its cost (r_e):

$$EVA = (ROE - r_e) * E \quad (1)$$

Where:

ROE = Return on Equity.

r_e = cost of equity.

E = equity.

Thus constructed indicator has a direct link to the capital invested by the owners. Assuming *ceteris paribus* (constant amount of equity), the requirement for the positive development of the indicator EVA is a positive difference between the return on equity and its cost.

An alternative calculation procedure is (2):

$$EVA = NOPAT - WACC * C \quad (2)$$

Where:

NOPAT = Net Operating Profit after Taxes.

Capital = Capital.

WACC = Weighted Average Cost of Capital.

It connects increase in value for the owner with the effects produced by major operational activities of the company (NOPAT). This is reduced by average cost of capital, that was used for these activities ($WACC * C$).

2.2. Methodology for calculating EVA in Slovak conditions

Building on the above-mentioned relationships, at first glance it is clear that the calculation of EVA will not be easy, given the ambiguity of the contents of sub-indicators in our country. Just to quantify NOPAT - net operating profit after tax - the company Stern Stewart & Co. introduces about 160 possible adjustments.

The literature of Slovak origin, for example (Vlachynsky, 2002), (Zala, 2002), (Cisko et al., 2013) states that the starting point for the quantification of NOPAT is profit before tax and before interest i.e. EBIT (Earnings before Interest and Taxes). Defining EBIT is then based on line 56 of the financial statement. Then Eva can be adjusted (3):

$$EVA = EBIT * (1 - t) - WACC * C \quad (3)$$

Where:

t = income tax rate in % multiplied by 1/100.

Quite often, however, we can see even the identification of EBIT with the total profit before interest and taxes, which does not correspond to the original philosophy of NOPAT indicator. Because the NOPAT is considered to be the effect created by the major business activities, correction of all of items that are related with these activities is necessary. In practice, this process can be very difficult and debatable. One of the modified structures of EVA indicator (4) in the environment of Slovak accounting and business has the form:

$$EVA = OP * (1 - t) - WACC * C \quad (4)$$

Where:

OP = operating profit (profit or loss from operating activities).

OP is contained within line 27 of financial statement. It consists of difference between revenues (final balances of accounting groups 60 – 65) and costs (final balances of accounting groups 50 – 55). Operational profit can indeed be regarded as an indicator of economic operational performance of the company, on the other hand, the ratio defined by our accounting legislation departs from the original concept by ignoring some items of costs and revenues that are attached to the main (operational) activity of the enterprise. In the rules of accounting of Slovakia, they are included for example in the category of financial operations (lines 29 – 55 of the current financial statement, i.e. the final balances of account groups 56 and 66). (Kicova et al., 2013) Therefore, detailed analysis of the accounting items is needed when calculating EVA. In recent times, it was possible to substitute operational profit in equation (4) with profit or loss from common activities. It is no longer possible due to the different structure of the profits since year 2014 and also there was a problem with detailed analysis of included items:

$$EVA = CP * (1 - t) - WACC * C \quad (5)$$

Where:

CP = profit from common activities.

The expression of level of taxation in the construction of EVA is also a problem. Tax Rate (item t) can be expressed in different ways:

- as the nominal tax rate determined by the actual Law on Income Tax (currently 19%),
- as the effective tax rate, e.g. tax rate reflecting the actual tax burden on business - profit adjustment by the sum of items correcting the tax base (their list is highly variable due to frequent amendments to the Law on Income Tax):

$$t_{corr} = \frac{T}{PBT} * 100 \quad (6)$$

Where:

t_{corr} = corrected tax rate in %

T = sum of paid income taxes in €

PBT = Profit Before Taxes

When doing any adjustments we must keep in mind that the selected processes should fully correspond with each other.

Alternatively, also capital and its cost are implemented into the structures of EVA. Capital (C) in equation (2) to (5) represents the reward given capital used to achieve the operational performance of the company (specifying NOPAT, taxed EBIT, or Operational Profit), i.e. equity and explicitly interest-bearing foreign sources. Its cost is determined by the weighted arithmetic average as (7):

$$WACC = r_d * (1 - t) * \frac{D}{C} + r_e * \frac{E}{C} \quad (7)$$

Where:

r_d = cost of interest-bearing debt taking into account the tax shield

D = interest-bearing debt capital

In this sense, EVA is characterized by the production capacity of the enterprise deprived of the weighted average cost of committed capital – with the exception of external resources, which are not considered to be cost capital – trade credits, although they are also involved in the formation of operating profit.

In connection with the capital it is necessary to mention that the inconsistency of the calculation procedure resides in taking into account the temporal nature of capital. In some literature sources the capital (C) is defined as long-term capital of the enterprise in the other this item represents all company liabilities, which in our view is correct, because both long-term and short-term funding sources are involved in creation of operating profit.

Quantification of the individual costs of capital forming a part of the calculation of WACC is a particular problem not only for the calculation of EVA, but in the wider context of corporate financial management. Financial economics provides several ways to quantify these costs. Unfortunately, in our conditions usage of the known methods and valuation models is a limiting factor. Especially limiting is the absence of essential data resulting from under-developed capital/stock market in Slovakia (Capital Asset Pricing Model), the fact that the Slovak Joint Stock Companies mostly do not have publicly traded shares, do not pay dividends (dividend model) etc. (Buc et al., 2013)

In terms of financing foreign sources, bank loans dominate in Slovak enterprises. Therefore, calculating the cost of capital acquired this way is usually not problematic. Interest rate, which takes the impact of inflation and other macroeconomic conditions into account, is determined by the market. It is adjusted by the effect of the tax shield for the purpose of calculations. Primary data on the interest rate “applied” by the enterprise can be obtained from the accounts as debit interest rate and explicit interest-bearing debt capital ratio. While the amount of debit interest rate is known from the account 562 – Interests, it is necessary to do the analysis of foreign liabilities of the company to determine the amount of the interest-bearing debt capital (information about interest-bearing foreign capital is not an obligatory part of the balance sheet). (Lehutova et al., 2013)

In addition to internal data taken from accounts, external data is used to calculate r_d . These external data can be for example, data on interest rates of commercial bank when lending in business sphere obtained from the Nation Bank of Slovakia.

Estimating the cost of equity – item r_e is an extremely complex process in our conditions. For the reasons stated above, the most viable solution to use is the stacking method of estimating these costs, in which is the risk-free rate of return increased by the risk premium component bound to the decomposed risk of the enterprise. (Bartosova, 2005)

3. Conclusion

Constant branching of possible procedures of partial indicators that form various EVA designs increases the difficulty of its quantification and changes the calculated value into more or less accurate estimates. In theoretical discussions, there are new arguments in favor or against the application of the concept of EVA and other criteria based on the value of the company in the context of ongoing changes in accounting and tax legislation, financial market conditions and the like in Slovakia.

In relation to the need for an integrated approach to the assessment of corporate activity the importance of indicator EVA also increases in our country. EVA determines the criteria of business performance, the effectiveness of its financial structure, as well as a single reference rate for the various activities of the company - financial activities, investment activities etc. The progressing globalization and the development of international economic relations are gradually enforcing not only harmonized accounting but also unified theoretical and methodological basis for the assessment of individual aspects of the company and its operations.

Acknowledgements

This paper is prepared with the support of the project financed from the EU with title "**Education quality and human resources development as the pillars of a knowledge society at the Faculty PEDAS, University of Zilina in Zilina.**", ITMS project code 26110230083, solved by the University of Zilina.

Modern knowledge society education /Project is co-financed by the EU funds.

Prispevok vznikol v nadvaznosti na rieseny projekt spolufinancovany zo zdrojov EU s nazvom „**Kalita vzdelavania a rozvoj ludskych zdrojov ako piliere vedomostnej spolocnosti na Fakulte PEDAS Zilinskej univerzity v Ziline**“, ITMS kód projektu 26110230083“, rieseného na Zilinskej univerzite v Ziline.

Moderné vzdelavanie pre vedomostnu spolocnosť/Projekt je spolufinancovany zo zdrojov EU

References

- Bartosova Viera (2005). *Optimalizacia financnej struktury podniku*. Zilina: Zilinska univerzita v Ziline/EDIS-vydavateľstvo ZU, 2005, ISBN: 80-8070-404-X.
- Buc Daniel, Kliestik Tomas (2013). Aspects of statistics in terms of financial modelling and risk, *Proceeding of the 7th International Days of Statistics and Economics*, Prague, pp. 215-224, 2013, ISBN:978-80-86175-87-4.
- Cisko Stefan, Kliestik Tomas (2013). *Financny manazment podniku II*, EDIS Publishers, University of Zilina, Zilina 2013, 775 p., ISBN: 978-80-554-0684-8.
- Kicova Eva, Kramarova Katarina (2013). Possibilities of using financial analysis in the bus transport companies. In: *Financial management of firms and financial institutions: 9th international scientific conference : 9th-10th September 2013 Ostrava, Czech Republic : proceedings.* - ISSN 2336-162X. Ostrava, VSB - Technicka univerzita 2013, ISBN: 978-80-248-3172-5. pp. 332-341.
- Kollar Boris, Kliestik Tomas (2014). Simulation approach in credit risk models, In: *4th International Conference on Applied Social Science (ICASS 2014)*, *Information Engineering Research Institute, Advances in Education Research*, Vol. 51, pp. 150-155, 2014, ISSN: 2160-1070.
- Lehutova Katarina, Krizanova Anna, Kliestik Tomas (2013). Quantification of Equity and Debt Capital Costs in the Specific Conditions of Transport Enterprises, In: *17th International Conference on Transport Means, Kaunas Lithuania 2013, TRANSPORT MEANS 2013*, pp. 258-261, ISSN: 1822-296X.
- Tomas Kliestik, Alexander N. Lyakin, Katarina Valaskova (2014). Stochastic calculus and modelling in economics and finance, In: *2nd international conference on economics and social science (ICESS 2014)*, *Information Engineering Research Institute, Advances in Education Research*, Vol.61, pp. 161-167, 2014, ISSN: 2160-1070.
- Vlachynsky Karol et al (2002). *Podnikové financie*. Bratislava: Suvaha, 2002. ISBN: 80-88727-48-0.
- Zalai Karol et al (2002). *Financno-ekonomicka analyza podniku*. 4. vyd. Bratislava: Sprint, 2002. ISBN: 8088848-94-6.