

THE SELF-REGULATORY EFFICIENCY INDICATOR AS A MEASURE OF COMPANY'S COMPARATIVE ADVANTAGE

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Purpose: The aim of the article is to indicate the possibility of using comparative advantage gauges as a measure identifying the market position of a company in relation to other entities, as well as the proposal to introduce a new measure in the form of a self-regulatory efficiency indicator.

Design/methodology/approach: The simple indicators taking into account only revenues and costs are not suitable for a useful comparison of entities from a given industry, because they involve simple measures and allow only to rank entities without fully considering the specificity of the resources' management or the size of the business. Hence, the self-regulatory efficiency indicator is proposed. It can be used to compare entities generating uniform characteristics of the net financial result.

Findings: For the Polish energy industry companies listed on the Warsaw Stock Exchange it is important not so much to achieve a satisfactory market position, as to achieve a future's competitive advantage, so the problem of the management is how to decide about the future without having a rational basis. It is solved by the proposed self-regulatory efficiency indicator (SEI).

Originality/value: The comparison of the market position according to the SEI gauge and other comparative advantage indicators (EVA, RMA, I/C) is compatible in over 50%. Thus the SEI gauge can be used to describe the enterprise's market position, because as a new measure it allows to easily assess the efficiency of the resource management inside the entities, by the use of the generally available basic quantities.

Keywords: the competitive position of a company, the indicators of the comparative advantage, a self-regulatory efficiency indicator.

Category of the paper: Research paper, viewpoint.

1. Introduction

One of the fundamental goals of enterprises' activity is their success, which from the owner's point of view takes the form of the highest possible efficiency in managing available resources. In order to achieve such a defined success, the company must take into account its market position in relation to other enterprises, mainly those operating in the same sector. Therefore, the most important factor contributing to the success of the company is its market position, which is traditionally measured by its market share, especially the relative share, which reflects the position of the entity against the background of the entire industry. However, it happens that an entity with a significant market share at the same moment is not generating adequate financial results, consistent with the strategic assumptions. It is also difficult to determine the chances to maintain or develop a market position depending on the relative market position, which in the long-term must be based on the efficiency of management with the key success factors, i.e. resources and competences. It is therefore worth undertaking an analysis of the possibilities to build a market position on the basis of the comparative advantages of an enterprise, which may be: EVA (Economic Value Added), RMA (Resource Margin Accounting), I/C (Income/Costs). The aim of the article is to indicate the possibility of using comparative advantage gauges as a measure which enables us to identify the market position of a company in relation to other entities, indicating their advantages and disadvantages, as well as the proposal to introduce a new measure in the form of the self-regulatory efficiency indicator (SEI). Polish energy industry companies listed on the Warsaw Stock Exchange were used as a basis of comparison.

2. Methods

2.1. Measures of the comparative advantage in the positioning of companies

Comparative advantage is a concept that was introduced to economic considerations by David Ricardo in 1817 (Encyclopedia of Management). Originally, it concerned only the comparison of the economies of countries due to the possibility of bearing relatively lower production costs of goods than competing countries. However, currently the comparative advantage theory is used to compare enterprises in the global market, but also individual industries within one country. It turns out that for individual companies taking part in the market game it is important not so much to achieve a satisfactory market position, but to achieve a competitive advantage, which can be derived from a comparative advantage (the attempt to link a comparative advantage and a competitive advantage, as well as the analysis of the

possibility of using a full model for both economies and enterprises was made among others by Satya Dev Gupta; Gupta, 2015).

A competitive advantage allows taking into account the results of activity in the assessment of the market position and a creative analysis of success factors – the ways of using resources and management efficiency, so it not only focuses on the results of operations, but also recognizes the importance of management competences. The results can be achieved at various levels of advancement in the development of managerial competences – and individual enterprises should plan the management of their resources in a way that enables a positive outlook for the future and not only gives results in a given moment. It is also important to relate these skills to competitors on a given market – because it is not always about maximizing results, but about getting a solid basis for generating better results than competitors.

A comparative advantage, in relation to enterprises, is defined as the difference in the efficiency of their use of resources (Wilton, 2014) – such an approach to key success factors of a company allows us to determine not only what the current market share is, but also what the potential of the entity to occupy a specific position in the future is.

Comparative advantage measures, being more complex measures of the competitive position of enterprises than an absolute or relative market share, present a more complete picture of the situation of enterprises in a given industry. They give an opportunity to establish their position in relation to each other on the basis of the results of operations, as well as to show the abilities of these entities to achieve these results. Thus, they focus more on the potential of resource use and business management processes than on their results.

However, two elements make it difficult to precisely determine the value of indicators of comparative advantage: the time required to obtain all the necessary information and the lack of accurate data.

The basic measures of enterprises' comparative advantage include EVA, RMA and I/C (Opolski, Waśniewski, Wereda, 2010). EVA – economic value added is based on the assumption that the entity's ability to generate surplus over the cost of capital (NOPAT-WACC) is important in assessing the company's operations. For this reason, it is crucial to know the current results of the company in terms of net operating profit (NOPAT – Net Operating Profit After Tax). The determination of the value of the weighted average cost of capital – WACC poses a certain difficulty in calculating the value of this indicator. In order to work it out, it is essential to know the interest rates on loans and the prices of shares issued on the capital market (for the part which constitutes a foreign capital), as well as the amount of dividend that the enterprise is willing to pay to its shareholders (for the part of capitals making its own equity capital). The fact remains that you need up-to-date data from the enterprise and from the capital market to determine WACC.

RMA (Resource Margin Accounting) is an internal rate of return for a single period, which allows us to measure the comparative advantage by estimating the cost of the alternative exploitation of resources, which are used to create a competitive advantage based on specific

competences (for the use of resources). The disadvantage of this measure is that it does not take into account the costs of materials and services purchased from other entities. In fact all resources used by the company are not taken into account. On the other hand, the meter comparing the revenues and the costs of the enterprise – I/C (Income/Costs), is very simple in its construction, still it does not take into account the conditions for the implementation of revenues or the incurred costs.

2.2. The self-regulatory efficiency indicator as a measure of companies' comparative advantage

The enterprise's subjective learning about its ability to compete leads to the desire to measure the achievements and verify the validity of the decisions which have been made. This verification, on the one hand, should determine the level of competitive advantage, which gives a specific market position, and on the other hand it should build the principles of its maintenance. The entities that want to determine properly their level of competitiveness are forced to look for benchmarks that enable them to rank themselves among all or selected market participants. This approach makes it necessary to identify selected characteristics of entities, among which revenues and profit are the most commonly used and available indicators. These measures are, however, burdened with a demanding requirement to find entities with identical or very similar characteristics, mainly in terms of the resources they have and the ways they are used in the management processes (Majecka, Letkiewicz, 2018). Although the use of comparative advantage measures is helpful, it poses some difficulty for entrepreneurs who need specific information which is difficult to define clearly/calculate from the enterprise perspective e.g. weighted average cost of the capital for the industry in the case of EVA or the costs of the alternative capital use in the case of RMA indicator.

Therefore, it may be useful to find a relativistic indicator that eliminates the mentioned negative traits or to look for an "identical entity" or to search for and count quantities relevant to the entire industry, or to focus on finding parameters that do not directly correspond to the scope of activity. For this reason, it is possible to apply the self-regulatory efficiency indicator (SEI) (Majecka, Letkiewicz 2018) to present the ability of enterprises to build a long-term market advantage (and thus a stable market position – as far as their scope of activity is concerned) and their ability to adapt to the changes of operating conditions and to compete through efficient use of resources in the current period and in the strategic perspective.

$$SEI = \frac{\frac{Pn}{Rs} * \frac{Rs}{Emp} * \frac{Pn}{Emp}}{Sop} \quad (1)$$

or

$$SEI = \frac{\frac{Ln}{Rs} * \frac{Rs}{Emp} * \frac{Ln}{Emp}}{Sop} \quad (2)$$

where:

Pn – net profit,

Ln – net loss,

Rs – sales revenues,

Emp – employment,

Sop – the scale of revenues generated by the last company from the research sample.

As a rule, the self-regulatory efficiency indicator can be used to compare entities generating uniform characteristics of the net financial result. This means that the correct interpretation is retained if all the compared entities in the group generate profit or loss. In the absence of homogeneous financial results, the ordering of the entities generating a loss together with the entities generating a profit requires adjustment in the level of the indicator by multiplying by (- 1) the indicator of the entities generating losses.

3. Results

The demonstration of the usefulness of the self-regulatory efficiency indicator in determining the market advantage of economic entities in relation to comparative measures, requires the identification of basic factors which set their level. As mentioned earlier, indicators in the form of EVA, RMA or I / C, besides the simple data available in the enterprise, require taking into account the weighted average cost of capital (WACC) and the opportunity cost of capital. The Polish energy industry companies listed on the Warsaw Stock Exchange have been adopted as the research sample. These are:

- Elektrociepłownia Będzin SA (BEDZIN),
- ENEA SA (ENEA),
- Energa SA (ENERGA),
- Zespół Elektrociepłowni Wrocławskich KOGENERACJA SA (KOGENERACJA),
- Polenergia SA (PEP),
- Polska Grupa Energetyczna SA (PGE),
- Tauron Polska Energia SA (TAURONPE),
- Zespół Elektrowni „Pątnów-Adamów-Konin” SA (ZEPAK).

The basic economic characteristics required for the calculations of comparative advantage indicators (EVA, RMA, I/C, WSS), taken from the financial statements of entities for 2017 and including: revenues, costs, operating profit, gross profit, net profit, total assets, current liabilities and employment (Table 1) show a large diversity of the entities, which is represented by the level of employment and the level of income. The magnitude of discrepancy in potential

between the smallest entity (Elektrociepłownia Będzin SA) and the largest one (Polska Grupa Energetyczna SA) is 113-fold in revenues and ca. 185-fold in employment for Polska Grupa Energetyczna SA. This state indicates the adequacy of the use of the comparative advantage tools, since the comparison of the basic economic categories describing the entity only allows to rank them by size, which is not a sufficient argument for the accurate determination of their market position. It also does not allow to draw any conclusions about the possibility of maintaining this position in the future.

Table 1.
Basic economic characteristics of entities from the research sample

Operator	Thousands of PLN							Persons
	Incomes	Costs	Operating profit	Gross profit	Net profit	Assets	Current liabilities	
BEDZIN	204,757	185,512	39,835	19,245	14,346	710,374	223,439	223
ENEA	11,547,479	10,080,912	1,487,730	1,466,567	1,164,891	28,312,994	4,250,313	15,514
ENERGA	10,534,000	9,532,000	1,210,000	1,002,000	773,000	21,056,000	2,623,000	8,820
KOGE-NERACJA	1,014,204	849,660	165,114	164,544	132,275	2,317,112	260,244	486
PEP	19,184	99,063	- 6,966	- 79,879	- 78,866	1,178,877	10,327	202
PGE	23,100,000	19,810,000	3,620,000	3,290,000	2,667,000	72,106,000	8,980,000	41,231
TAURON PE	17,416,029	15,658,377	1,806,271	1,757,652	1,382,946	35,792,021	4,986,203	25,000
ZEPAK	2,443,075	2,184,442	290,092	258,633	183,544	4,455,712	999,482	5,946

Adapted from: The financial statements of analysed entities.

In the calculations of the indicators and comparability of the results, the fact that this industry is characterized by activities which are subject to the regulation of the Energy Regulatory Office, the government department developing annually the calculation of OSD tariffs and determining the level of the weighted average cost of capital for particular years, is of considerable importance. In accordance with the OSD Tariff for 2017 published by the Energy Regulatory Office, the WACC rate amounted to 5.633%. It was based on the method presented in the document published by the President of the Energy Regulatory Office entitled "The method of determining the return rate of the cost of capital employed for power system operators for the years 2016-2020" (Energy Regulatory Office 2016). The data verified by the auditors and included in the financial reports for year 2017 provided the basis for the analysis. In 2017, the income tax rate was 19%. Moreover, one of the surveyed companies, Polenergia SA (PEP), generated a loss in the analysed period, which amounted to (-78,866) thousands PLN. Therefore, it was necessary to adjust the value of the indicator for this entity. The resulting values are given in the table below (Table 2).

Table 2.

The levels of analysed indicators (EVA, RMA, I/C, SEI) for the research sample

Operator	EVA	RMA	I/C	SEI
BEDZIN	4,837.30	0.027	1.10	4.14
ENEA	- 150,389.52	0.052	1.15	5.64
ENERGA	- 58,230.89	0.048	1.11	7.68
KOGENERACJA	17,878.97	0.071	1.19	74.08
PEP	- 71,466.88	- 0.068	0.19	(-) 152.43
PGE	- 623,687.58	0.046	1.17	4.18
TAURONPE	- 272,212.22	0.049	1.11	3.06
ZEPAK	40,285.08	0.058	1.12	0.95

Own research.

Although all the presented comparative advantage indicators are characterized by different levels, they are linked by the possibility of positioning enterprises from the highest to the lowest level of individual indicators. The classification of the entities in the sample according to various indicators of comparative advantage resulted in the following juxtaposition (Table 3).

Table 3.

The list of positions of the analysed entities according to different indicators of comparative advantage

Position	EVA	RMA	I/C	SEI
1	ZEPAK	KOGENERACJA	KOGENERACJA	KOGENERACJA
2	KOGENERACJA	ZEPAK	PGE	ENERGA
3	BEDZIN	ENEA	ENEA	ENEA
4	ENERGA	TAURONPE	ZEPAK	PGE
5	PEP	ENERGA	TAURONPE	BEDZIN
6	ENEA	PGE	ENERGA	TAURONPE
7	TAURONPE	BEDZIN	BEDZIN	ZEPAK
8	PGE	PEP	PEP	PEP

Own research.

The lists presenting the market positions of the surveyed enterprises with their average position based on the EVA, RMA and I / C indices together with the lists showing their positions determined by the SEI index allow for interesting comparison. The average position was calculated and compared with the use of the following method: the highest rank was assigned 8 points, the lowest 1 point. The next table (Table 4) contains the average positions of the surveyed entities according to the individual indicators of comparative advantage, as well as the average value.

Table 4.

The average position of the analysed entities according to different indicators of comparative advantage

Operator	EVA	RMA	I/C	Average
KOGENERACJA	7	8	8	8
ZEPAK	8	7	5	7
ENEA	3	6	6	6
ENERGA	5	4	3	5
PGE	1	3	7	4

Cont. table 4.

TAURONPE	2	5	4	3
BEDZIN	6	2	2	2
PEP	4	1	1	1

Own study.

The comparison of the average position determined on the basis of EVA, RMA and I/C with the position of Polish energy companies determined on the basis of the SEI index value is presented in Figure 1.

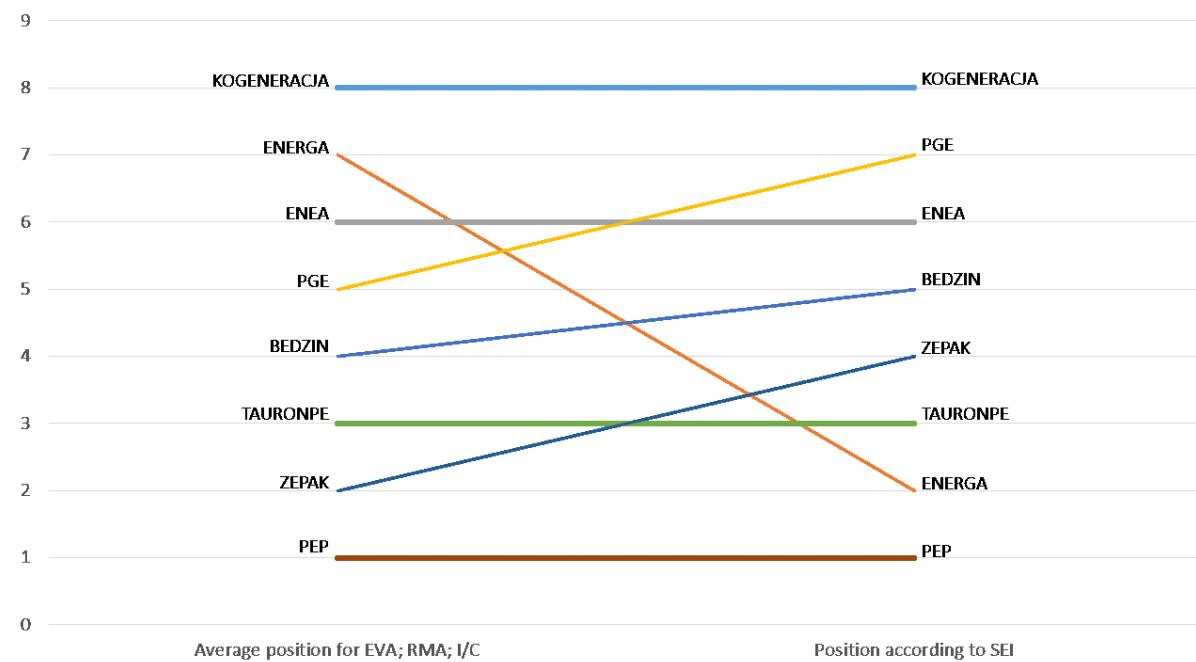


Figure 1. Juxtaposition of market positions of the analysed entities. Own study.

4. Discussion

When undertaking market position studies of enterprises, which provide important information in decision-making management processes related to achieving goals of economic entities, various indicators can be used. However, the indicators of comparative advantage are definitely better for determining the competitive position of enterprises than the traditional marketing indicators based on the share of the enterprise in the market (absolute or relative). The measurements of the participation in the market do not give grounds for determining the prospects for the development of the market position and do not directly inform about the potential of the company and the possibilities for efficient management of resources. None of the indicators gives conclusive results, yet the traditional ones, as well as those related to determining the comparative advantage of the companies, allow to rank them differently according to their market position, taking into account different grounds (based on different data). All methods have distinct disadvantages – comparative advantage indicators such as EVA

and RMA have them in the form of the necessity to calculate the WACC and the opportunity cost. This requires the managers to acquire specialized knowledge and quite hard-to-reach data describing the industry or the sector. Of course, this process generates costs. In turn, the I/C ratio, being a simple indicator taking into account only revenues and costs (an advantage in the form of data availability) is not suitable for a useful comparison of entities from a given industry, because it takes into account simple measures and allows only to rank entities without taking full account of the specificity of the resources' management or the size of the business.

Taking into account on the one hand the necessity of using readily available data, and on the other hand the utility of the measure, which not only allows to rank the entities in a given industry according to their market position, but also provides the basis for ranking entities according to their capability for managing resources, it is worth applying the self-regulatory efficiency indicator. It can be noted that the SEI index reflects the market position of the entity well (it is comparable to the one defined on the basis of EVA, RMA and I/C ratios) and by considering effective resource management it gives the basis for making rational decisions about the future. In addition, it has a definite advantage in the form of easily available data describing the basic characteristics of the business management process.

5. Summary

From the point of view of managers, the issue of positioning enterprises is one of the most important areas connecting two levels – the past and the future. The level of the past – referring to the performed actions, may be the basis for comparisons with the activities carried out by other entities, allowing to compare the management efficiency of the used resources. Therefore, it is necessary for the managers to select the measures which give possibility of comparison. Making the choice of measures is at the same time simple and difficult. The simplicity lies in the fact that the comparison may be based on basic features describing the management process such as revenue, profit or costs used directly or in the form of indicators e.g. in this case the indicator I/C (Income/Costs). On the other hand, it is difficult because more complicated measures, such as comparative advantage indicators (e.g. EVA or RMA) take into account relative parameters in their construction, such as the weighted average cost of capital (WACC) or the opportunity cost of used resources. This requires knowledge and intensive labour in their calculation. Thus, the basic problem of the management, which refers to the level of the future, is how to decide about the future without having a rational basis. This problem is solved by the proposed self-regulatory efficiency indicator, which by the use of the generally available (included in the financial statements) basic quantities (income, net profit, staff), allows us to easily assess the efficiency of the resource management in the industry or the entities competing on a given market. The comparison of the degree in which the self-regulatory efficiency

indicator and other indicators of comparative advantage reflect the market position leads to conclusion that there is 50% correspondence between the position according to SEI index and the average position resulting from the use of the mentioned comparative advantage indicators (EVA, RMA, I/C).

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