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SELF-REGULATORY EFFICIENCY OF TRANSPORT ENTERPRISES

Abstract

The self-regulatory efficiency indicator is a metric which collects basic economic characteristics and allows identifying enterprises which can compensate for the changes in a stable way and those whose self-regulatory ability is variable, regardless of their size. During the research on the self-regulatory efficiency of transport enterprises with the use of the indicator in question it was proved that during the years 2013–2015 the self-regulatory abilities of different entities were variable. However, as a general tendency, smaller enterprises tend to show a better ability to compensate for the changes in their surroundings.

Keywords: transport enterprises, self-regulation, self-regulatory efficiency index

Introduction

The TSL industry is highly competitive and provides a dynamic environment for entities operating in it. Processes in this industry require enterprises not only to act appropriately, but to build and develop mechanisms for survival and development. One of such mechanisms is the self-regulatory efficiency, based on partial capacities of self-regulation, i.e. the financial (measured by profitability of revenues), operating (measured by employment-related revenues) and economic (measured by employment-related profitability) self-regulation.

Based on information from the TSL industry, it is possible to identify the characteristics of analyzed, but it is also possible to identify changes in their self-regulatory capacities. Analysis of the variability of the self-regulation efficiency of selected TSL enterprises became the objective of this study, the thesis being the statement that the traditional position of an enterprise in a given industry measured by

the level of revenue does not reflect its self-regulatory efficiency. On the basis of the self-regulatory efficiency indicator, enterprises can be summarized in terms of their potential and future ability to survive and develop. The research covered the years 2013–2015.

1. Self-regulatory efficiency of enterprises

The equilibrium and ability to maintain a stable business is a condition for the existence and development of enterprises. Active management and responsiveness to the variability of the environment is reduced to maintaining the legal entity. An enterprise, thinking about a positive future, has to constantly strive to build an equilibrium and functional stability manifested in the internal and external dimensions (Szalucki, 2017). Synthesis of fractional material, social, information and behavioral equilibrium becomes a global equilibrium of an enterprise, which can be defined as a stable and variable system of relations within the defined limits between the enterprise and its surroundings (Kozmiński, Obłoj, 1989).

An enterprise is adapted to the environment on different scales and in different scopes. It depends on the quality and amount of the resources that are at the disposal of the enterprise at a given time and to what extent it is able to meet the challenges of competition. The position of the enterprise on the market resulting from the processes of stratification is also important (Majecka, 2015). Enterprises and the environment exert mutual influence on each other by triggering the feedback needed to eliminate interference with operation. The environment in the form of state and market influence is a basic condition of a enterprise's operation (Żurek, 2016).

The regulatory role of the market causes operators to interrelate, the nature of these interactions varies – from willingness to cooperate, to fight. As part of cooperative activities, relationships between entities lead to mutually consistent goals, but in the context of competitive behavior, enterprises are pursuing goals that may be contradictory. However, sometimes the situation is not so clear, as entities behave cooperatively where competing behavior is dominant in the market, and compete where cooperative behavior is the primary behavior. This may manifest itself by the following phenomena (Letkiewicz, 2013): enterprises competing when pursuing various goals nor infrequently show willingness to self-limitation in the methods and tools of the struggle; enterprises competing in one area can cooperate in other areas; competing enterprises can take joint action to reduce costly cost-cutting competition; competing enterprises may seek to eliminate the competitive situation completely by dividing the market.

In such conditions, companies seek to adapt their goals and mechanisms of operation to the requirements of the environment. This is the reason why they set out directions and ways of doing things by identifying and forecasting changes occurring in the environment. Such actions are the reason why enterprises are able to survive even under conditions that will be less favorable than now. Potential constraints on the efficiency and effectiveness of management should be

included in the development scenarios, taking into account the distribution of forces that alter and counteract this, in order to ensure the sustainability of economic activity. Ensuring sustainability requires changes, so that the entity should be able to respond to the demands of the environment or internal needs (implied by early adaptation to the environment). These changes may have the nature of a gradual adaptation or a radical nature. They are caused by a “discontinuity” in the institutional, legal, technological processes or management conditions and consist in (Letkiewicz, 2013): repair in order to survive in a short time perspective (self-regulation); revitalization of practices carried out in the absence of time constraints although of a short-term nature (adaptation); reorientation of the operation (optimization); transformation of the way of perceiving the environment (strategy).

In the context of changes in the environment, self-regulation is based on understanding their dynamics. Self-regulatory changes consist in restoring the equilibrium of the enterprise. Self-regulation refers to the efficiency of achieving a target identified in the dimension of the data available as reporting data such as assets, revenues, costs and profit, sometimes employment. The important issues are not only the resources used, but also the way in which they are configured. Compensation for changes in the market self-regulation is reduced to looking for such a structure of the mechanism of the enterprise’s operation to best determine the rules of using the resources responsible for generating revenue with respect to the market opportunities. The use of resources is measured in the form of operating costs in the core business area. Taking into account the characteristics of management of transport enterprises, the methodology of measuring the self-regulatory efficiency can be based on the revenue and profits earned by the entity, nonetheless these amounts have to be relativized by the efficiency of performance expressed in terms of the level of employment, as evidenced by the nature of the transport activity identified as the provision of services. In this way it is possible to build a self-regulatory efficiency indicator to take into account the profitability of revenues (financial self-regulatory efficiency), the employment-related revenues (operating self-regulatory efficiency) and the employment-related profitability (economic self-regulatory efficiency). The individual types of partial efficiency strengthen or weaken each other, hence the relations between factors should be described as a mathematical product. In order to eliminate the management scale effect, the result of the multiplication should be divided by the revenue achieved by the last enterprise from the sample used for analysis. Thus, the formula for the self-regulatory efficiency indicator is as follows (Letkiewicz, Majecka, 2016):

$$WSS = \frac{\frac{Zn}{Ps} \times \frac{Ps}{Zatr} \times \frac{Zn}{Zatr}}{Sop}$$

where:

Zn – net profit;

Ps – revenue from sales;

$Zatr$ – employment;

Sop – the revenue earned by the last enterprise from the studied sample.

2. Situation of the TSL industry in 2014 and 2015

The economic situation in the TSL industry can be presented on the basis of the annual research carried out by Halina Brdulak (Warsaw School of Economics). And thus: "The economic situation of Poland throughout 2014 was good. The stable growth of macroeconomic indicators from 3.3% to 3.6% in particular quarters of the year and the declining unemployment rate pointed to a favorable direction of development. The 61 entities participating in the survey achieved revenues totaling PLN 16 billion, which represents an increase by 112% in the revenues of the analyzed enterprises compared to 2013. Thus, the TSL market growth in 2014, measured year on year on the basis of the analyzed companies is high. Employment growth is slightly lower than in the case of revenues – 108%. The difference between the growth of revenues and the growth of employment would indicate the possibility of optimization. However, the analysis of profits and the decline in profits confirm the tendencies related to the price pressure in this industry. [...] Analyzing the results achieved by enterprises in 2014, the past year can be assessed as positive for the entire TSL industry" (Brdulak, 2015).

The above comment, but referring to 2015, was as follows: "an analysis of the trends in the TSL industry based on the companies listed in this year's ranking shows positive changes taking place in the market. In 2015 the pace of growth of the ranked companies as measured by revenues from the TSL activity was more than twice faster than the GDP growth rate and amounted to almost 9% (8.9%) Employment was growing even faster, at a rate of 9.8%. Other indicators were also positive. The growth rate of net fixed assets was almost 16%, the expenditure for IT systems (measured as a percentage of the company's revenue) – 9.5%, and the net profit per employee (employment-related profitability) – almost 20%. The average profitability in the industry was at a level of 3.2% compared to 2.8% in 2014. 37 of the ranked companies showed the Polish origin of capital, and their share of their revenues in the total revenue was 45%. Assessment of the impact of the sustainability concept on the financial performance indicates a positive correlation between the revenue and the publication of CSR reports" (Brdulak, 2016). Certain problems affecting the transport industry were evident in the shrinking markets as well as in the weak liquidity of individual entities (Otto, 2016).

In such conditions, the TSL industry managers had to make choices and decisions about proper self-regulatory responses to the variability in the environment. The consequences of their decisions are reflected in the achieved position on the market and are reflected in the ranking of companies in the TSL industry for the years 2013–2015 which is presented in table 1.

Analyzing the data in table 1 it should be said that by presenting the industry with the described revenue volume, the market is characterized by stability. The positioning of companies is relatively stable, although there are slight differences between the positions of individual entities compared year to year, but it is to be assumed that they are rather random, due to the short-term variability of the conditions and the results of management. Therefore, this ranking allows making a conclusion on the stability of its entity structure. However, it does not give a picture

Table 1. Results of TSL industry in 2013–2015

Pos. by revenue	2014		Name	Revenues			Net profit			Employment		
	2015	2014		2013	2014	2015	2013	2014	2015	2013	2014	2015
1	1	JAS-BFG S.A.	447 214 000	445 351 000	462 822 000	6 086 000	7 808 000	7 933 000	950	1 018	1 030	
2	2	Hellmann Worldwide Logistics Polska Sp. z o.o. sp.k.	254 294 000	280 525 000	305 439 000	1 126 000	1 033 000	4 680 000	410	391	1 055	
3	4	LINK Sp. z o.o.	220 176 170	242 707 000	285 321 000	5 030 073	5 092 203	8 655 000	504	531	640	
4	5	Yusen Logistics (Polska) Sp. z o.o.	164 616 000	208 101 000	262 606 000	-275 000	1 077 000	3 394 000	178	205	211	
5	3	Grupa Delta Trans	253 107 600	252 081 000	245 106 000	9 534 700	5 309 500	2 867 000	1 148	1 036	916	
6	7	OMIDA Group	88 112 973	193 486 000	240 363 000	769 046	2 242 478	4 464 000	120	188	325	
7	8	PPT PKS Gdansk-Oliwa SA	162 868 849	180 487 000	217 801 000	2 776 186	2 372 011	4 167 000	148	164	181	
8	6	MEXEM Sp. z o.o.	182 812 000	196 081 000	192 302 000	6 037 000	8 192 000	6 934 000	253	259	272	
9	9	SM LOGISTIC Sp. z o.o.	156 739 984	170 039 000	164 647 000	1 202 778	1 896 702	1 909 000	98	101	332	
10	12	Optima Sp. z o.o.	58 709 694	99 000 000	146 386 000	6 361 412	1 898 494	9 334 332**	125	173	263	
11	10	Eurogate Logistics Sp. z o.o.	99 502 000	117 176 000	134 465 000	878 000	1 701 000	2 421 000	57	68	65	
12	11	No Limit	94 605 000	103 279 000	127 675 000	147 000	1 655 000	4 226 000	354	371	390	
13	13	JURA POLSKA Sp. z o.o.	69 969 400	77 953 000	91 727 000	45 500	-261 600	-657 000	29	33	34	
14	14	Trans Logistyka-Olga Iuchniewicz sp.k.	56 856 000	70 154 000	68 606 000	3 191 000	3 485 000	4 113 000	172	229	245	
15	15	Botrans Sp. z o.o.	68 478 659	64 306 000	65 782 000	989 149	809 719	500 000	113	94	48	
16	16	Asstra Associated Traffic AG	84 354 000	58 677 000	64 454 000	1 133 000	187 000	1 994 000	77	80	79	
17	17	SM AGROLAND Sp. z o.o.	48 281 824	48 173 000	48 264 000	842 979	622 275	559 000	33	35	35	
18	18	Intertransports Centre-Polska Sp. z o.o.	34 227 322	36 932 000	31 756 000	1 426 238	1 501 991	1 228 000	18	19	17	
19	19	Delphia Piszarska-Klinkosz, Klinkosz i Żagarów s.j.	11 529 333	12 971 000	13 939 000	117 339	844 238	1 480 000	12	13	12	
20	20	Transrem Sp z o.o.	8 320 061	8 772 000	8 822 000	803 934	1 040 611	1 040 000	84	86	93	
21	21	*Albatros Cargo Sp. z o.o./Formica 3PL Solutions Sp. z o.o.	5 400 000	5 200 000	4 600 000	312 000	862 000	327 000	6	8	9	

* entity changed name

** estimates based on average profitability of revenues in 2013 and 2014 due to an obvious error in the source specification

Source: own study based on *Dziennik Gazeta Prawna*, 24 June 2015, No. 120 (4013) and *Dziennik Gazeta Prawna*, 27 June 2016 No. 122 (4269)

of the adaptability changes of individual entities, as even the scale of profit depends on the scale of the entity's business and it is difficult to compare in this way directly entities employing more than thousand people with entities employing a dozen or so. Therefore, such a comparison can be made with the use of a relative measure, which is the self-regulatory efficiency indicator. Hence, the next tabular breakdown (tab. 2) presents the results of individual entities in terms of the self-regulatory efficiency indicator (entities are ordered in alphabetical order).

Table 2. Self-regulatory efficiency indicators of the TSL industry enterprises in years 2013–2015

Name	2013	2014	2015
Albatros Cargo Sp.z o.o./Formica 3PL Solutions Sp. z o.o.	2 704.00	11 610.06	1 320.11
AsstrA Associated Traffic AG	216.51	5.46	637.08
Botrans Sp. z o.o.	76.62	74.20	108.51
Delphia Pisarska-Klinkosz, Klinkosz i Zagarów sp.j.	95.61	4 217.38	15 211.11
Eurogate Logistics Sp. z o.o.	237.27	625.74	1 387.28
Grupa Delta Trans	68.98	26.27	9.80
Hellmann Worldwide Logistics Polska Sp. z o.o. sp.k.	7.54	6.98	19.68
Intertransports Centre-Polska Sp. z o.o.	6 278.26	6 249.24	5 217.94
JAS-BFG S.A.	41.04	58.83	59.32
JURA POLSKA Sp. z o.o.	2.46	62.84	373.40
LINK Sp. z o.o.	99.61	91.96	182.88
MEXEM Sp. z o.o.	569.38	1 000.42	649.88
No Limit	0.17	19.90	117.42
OMIDA Group	41.07	142.28	188.66
Optima Sp. z o.o.	2 589.92	120.43	1 115.30
PPT PKS Gdańsk-Oliwa SA	351.86	209.19	530.02
SM AGROLAND Sp. z o.o.	652.54	316.10	255.09
SM LOGISTIC Sp. z o.o.	150.63	352.66	33.06
Trans Logistyka-Olga Juchniewicz sp.k.	344.19	231.60	281.83
Transrem Sp. z o.o.	91.60	146.41	125.05
Yusen Logistics (Polska) Sp. z o.o.	2.39	27.60	258.74

Source: (own study)

Analyzing the position of individual enterprises based on the self-regulatory efficiency indicator it can be noticed that the variance of the close surroundings, as well as the resource configuration efficiency and decisions on the characteristic configuration of resources showed some stability, while in other cases the differences between the years were fairly drastic. The enterprises the position of which changed maximum by two positions according to the self-regulatory efficiency indicator in the years 2013–2015 include the following 6 entities (tab. 3).

Table 3. List of entities with the highest position stability in the ranking by the self-regulatory efficiency indicator in 2013–2015

Name	Position according to indicator		
	2013	2014	2015
Intertransports Centre-Polska Sp. z o.o.	1	2	3
MEXEM Sp. z o.o.	5	4	6
Trans Logistyka-Olga Juchniewicz sp.k.	7	8	10
LINK Sp. z o.o.	11	13	14
JAS-BFG S.A.	17	16	18
Hellmann Worldwide Logistics Polska Sp. z o.o. sp.k.	18	20	20

Source: (own study)

The size of the enterprise is not important in this specification as it includes both very large entities such JAS-BFG SA. (employment – 1030 people in 2015), medium-sized entities like MEXEM (employment – 272 people in 2015) or Trans Logistyka-Olga Juchniewicz sp.k. (employment – 245 people in 2015) and small enterprises such as Intertransports Centre-Polska Sp. z o.o. (employment – 17 people in 2015). A group of enterprises with the highest stability of position in ranking by the self-regulatory efficiency indicator can be confronted with a group of entities with the greatest difference between the highest and the lowest position. The largest difference in the group of analyzed entities is characteristic for the entity called AsstrA Associated Traffic AG, which was ranked 9th in 2013, 21st in 2014, and 7th in 2015. The reason for that was that 2014 was a year in which the self-regulatory efficiency of this entity drastically deteriorated, however this efficiency was successfully restored in 2015. The list of entities for which the change between the highest and the lowest position in the years 2013–2015 was the greatest is presented in table 4.

Table 4. List of entities with the highest variance of position in the ranking by the self-regulatory efficiency indicator in 2013–2015

Name	Position according to indicator			Maximum position change
	2013	2014	2015	
AsstrA Associated Traffic AG	9	21	7	14
Delphia Pisarska-Klinkosz, Klinkosz i Zagarów sp.j.	12	3	2	10
JURA POLSKA Sp. z o.o.	19	15	9	10
SM LOGISTIC Sp. z o.o.	10	6	19	9
Yusen Logistics (Polska) Sp. z o.o.	20	17	11	9
Optima Sp. z o.o.	3	12	5	9

Source: (own study)

The analyzed three-year period of change of position of entities based on the self-regulatory efficiency indicator requires using a tool to illustrate the stability in respect of the position of particular enterprises in the stratification system. This may be the average position of enterprises – entities with the highest average

position with respect to the self-regulatory efficiency indicator were the best to cope with the variability of the environment. A breakdown of positions and average position of individual companies in 2013–2015 is presented in table 5.

Table 5. A breakdown of positions and average position of studied companies in 2013–2015

Name	Position according to indicator			Average position in 2013–2015	Position acc. to average position in 2013–2015
	2013	2014	2015		
Intertransports Centre-Polska Sp. z o.o.	1	2	2	1.7	1
Albatros Cargo Sp. z o.o./Formica 3PL Solutions Sp. z o.o.	2	1	4	2.3	2
MEXEM Sp. z o.o.	5	4	6	5.0	3
Delphia Pisarska-Klinkosz, Klinkosz i Zagarów s.j.	12	3	1	5.3	4
Eurogate Logistics Sp. z o.o.	8	5	3	5.3	5
Optima Sp. z o.o.	3	12	5	6.7	6
PPT PKS Gdansk-Oliwa SA	6	9	8	7.7	7
SM AGROLAND Sp. z o.o.	4	7	12	7.7	8
Trans Logistyka-Olga Juchniewicz sp.k.	7	8	10	8.3	9
SM LOGISTIC Sp. z o.o.	10	6	19	11.7	10
AsstrA Associated Traffic AG	9	21	7	12.3	11
LINK Sp. z o.o.	11	13	14	12.7	12
Transrem Sp. z o.o.	13	10	15	12.7	13
OMIDA Group	16	11	13	13.3	14
JURA POLSKA Sp. z o.o.	19	15	9	14.3	15
Botrans Sp. z o.o.	14	14	17	15.0	16
Yusen Logistics (Polska) Sp. z o.o.	20	17	11	16.0	17
JAS-BFG S.A.	17	16	18	17.0	18
Grupa Delta Trans	15	18	21	18.0	19
No Limit	21	19	16	18.7	20
Hellmann Worldwide Logistics Polska Sp. z o.o. sp.k.	18	20	20	19.3	21

Source: (own study)

The results of analysis of the stability of the self-regulatory efficiency of enterprises operating in the TSL industry clearly show that the best entity, Intertransports Centre-Polska Sp. z o.o., (employment – 17 people) as well as the second best company in the ranking Albatros Cargo Sp. z o.o./Formica 3PL Solutions Sp. z o.o. (employment – 9 people) are small enterprises. The first entity is characterized by high stability of the position with a downward trend – positions from 1 in 2013 to 3 in 2015, while the second enterprise was 2nd in 2013, and 1st in 2014 and finally it took the 5th place in 2015, which could be due to the change of the name and formula of operation. Then (positions from 3 to 17) were taken most of all by medium-sized enterprises. The ascending group includes Delphia Pisarska-Klinkosz, Klinkosz i Zagarów sp.j., which moved forward from the 12th place in 2013 up to the 2nd place

in 2015 and JURA POLSKA Sp. z o.o., which moved from the 19th place in 2013 up to the 9th position in 2015. Both these entities have good prospects for the future in respect of self-regulatory capacities. The reverse trend of self-regulation efficiency was characteristic for SM AGROLAND Sp. z o.o., whose position according to the self-regulatory efficiency indicator was gradually deteriorating (from the 4th place in 2013, 7th in 2014, down to the 19th place in 2015). The entity called Botrans Sp. z o.o. was characterized by a stability of the positions taken. The final part of the table is taken by large entities characterized by functional inertia resulting from the scale of business.

Conclusions

The basic conclusion from the presented studies can be contained in the statement that traditional rankings do not reflect the capacity of enterprises to compensate for the rapid changes in the environment, but merely indicate their place in the market in the context of the performance of these entities. Moreover, they refer to the global characteristics of entities. When attempting to visualize the situation on the TSL market by identifying the level of self-regulatory efficiency of individual entities, an entirely different ranking of companies is obtained – they are ranked according to the potential for long-term survival and development. As it turns out, it is not the largest enterprises with the highest levels of operating income, that have the highest self-regulatory capacity – it is rather small enterprises that are leaders in this respect. The conclusion that follows from this is that the potential of an enterprise basing on the size of its assets, the ability to generate high revenues and a high level of employment does not necessarily allow it to develop self-regulatory capacities. It is small entities that do not have huge assets to support them, when they want to survive in the dynamic environment of the TSL industry, they have to be characterized by the highest self-regulatory efficiency.

Based on the research conducted in the years 2013–2014, a number of changes occurred in the TSL market, perceived both in the context of the performance of individual enterprises and their self-regulatory efficiency. The researched market is a area of dynamic changes, which should all the more encourage enterprises to develop their self-regulatory, both fractions and global, abilities.

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