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Analysis of Profitability at Listed Energy Trading Companies in Vietnam

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ABSTRACT: Through the survey process on annual reports, the authors found that companies mainly make simple comparisons between this year and last year, a few companies make comparisons with the industry average, analyzed using charts, however, no company has yet conducted factor analysis to find the influencing causes and thereby have a basis to propose solutions to improve the company's profitability. In this article, the group proposes to apply the Dupont model to perform analysis applicable to listed energy trading companies.

KEYWORDS: Annual report, Dupont model, profitability, listed enertry trading company.

I. INTRODUCTION

Evaluating business performance in general and analyzing business profitability in particular is always an important issue in business management, which is not only meaningful for business administrators. which is meaningful for all stakeholders to use the information to make decisions towards different goals to achieve their interests. In 2021, Vietnam's economy will be negatively impacted by the impact of the Covid-19 epidemic. According to the report on the socio-economic situation in the fourth quarter and 2021 of the General Statistics Office (2021), the complicated developments of the Covid-19 epidemic since the end of April have seriously affected trade and epidemic activities. service. The negative growth of a number of service sectors accounting for a large proportion has reduced the overall growth of the service sector and the entire economy. Summary of business results data shows that many energy trading companies have a decrease in business results in 2021 compared to 2020 such as PetroVietnam Gas City investment and Development Joint Stock Company (PCG), PP Enterprise Investment Consultancy Joint Stock Company (PPE), Nam Mu Hydropower Joint Stock Company (HJS), Hydropower Joint Stock Company - Power No.3 (DRL), even many companies have profitable results sounds like Central Electromechanical Joint Stock Company (CJC). Besides, there are still some companies with more positive results such as Clean Natural Gas Vietnam Joint Stock Company (CNG), Pha Lai Thermal Power Joint Stock Company (PPC)... However, according to the author's statistics from Data on business results of listed energy trading companies shows that revenue, profits, and profit margins tend to decrease in the period from 2012 to 2021. The profitability of the above companies is affected. from many different factors. In which, using effective profitability analysis method is extremely necessary. Aims to help businesses better understand the causes and thereby propose appropriate solutions to increase profitability.

The Dupont model, also known as Dupont analysis, Dupont technique, Dupont method, Dupont formula... is a tool used to analyze the profitability of a business based on the interrelationship between factors. Financial indicators. This tool was first used by Frank Donaldson Brown (1885-1965) - a senior financial expert and director of Dupont and General Motors Corporation since the 1920s. Accordingly, based on the relationship Between financial indicators, the analyst will transform an original indicator into a function with many variables. From there, proceed to determine the influence of each factor (variable) on the original indicator in the period as well as the change in both the original indicator and the factors (variables) between the analysis period and the base period (Gomez, 2016).

The Dupont model is quite useful when analyzing the profitability of a business. Using the Dupont transform technique is very simple and easy to apply, the analysis results ensure reliability for decision making. Furthermore, applying Dupont also helps information users see the need to recognize and evaluate the current state of business operations, find appropriate solutions to increase profits, and offset profitability. Enterprise benefits based on taking advantage of business scale. However, because it depends entirely on assumptions and input data from accountants, the accuracy of profitability analysis using the Dupont tool is limited. On the other hand, the Dupont tool does not mention capital costs during the analysis process, nor does it determine the level of influence of factors (variables) on the fluctuation between the analysis period and the base period of the capacity. Profitable for each subject. Furthermore, the main solution to increase the profitability of each subject that the Dupont tool points out only revolves around cutting costs. This is not entirely appropriate in this day and age because cost is not necessarily the most important factor determining the increase in business profits.

II. LITERATURE REVIEW

Domestic and international research projects have studied the analysis of business performance, approaching aspects such as: concepts, analysis criteria, databases, analysis methods, typically works:

-About the concept of profitability: Works by authors: Ngo The Chi & Nguyen Trong Co (2015), Nguyen Van Cong (2022), Nguyen Trong Co & Nghiem Thi Tha (2015), Nguyen Thi Le Hang (2018), Nghiem Thi Tha, Pham Duy Khanh (2021) Edison et al. (2020), Lim and Rokhim, (2020), Cyril and Singla (2020), Menicucci (2018) express the ability Enterprise profitability in different ways, but they all agree on the basic concept that enterprise profitability is an important measure that reflects the enterprise's level of use of available resources to achieve goals. highest profit, reflecting the correlation between profits earned with the resources and results achieved by the business.

-Regarding indicators for analyzing the profitability of enterprises: The authors Khalid et al (2015) used the measure ROA when analyzing the profitability of chemical companies in Pakistan in the period from 2001 to 2009. Some authors also use this measure when analyzing profitability such as: Ngo Thi Kim Hoa (2017), Ha Minh Tam et al (2021), Elisa (2018). Fareed et al (2016). Some authors use both measures ROA and ROE when analyzing profit margins such as: Ngo Thi Hang and Nguyen Thi Thuy Linh (22020), Phan Thu Hien and Nguyen Nhat Ha (2020), Alsharari and Alhmoud (2020), Aslam et al (2021). In some cases, all three measures are combined: ROE, ROA and ROS (Nguyen and Nguyen, 2020; Yoo and Kim, 2015), studies also use other financial indicators such as return on capital. investment (ROIC) with ROA (Clifford Defee and Stank, 2005), Edison et al. (2020); or combine all 3 indicators such as: ROA, ROE with EPS (Lim and Rokhim, 2020); return on invested capital (ROCE), ROIC with ROA (Cyril and Singla, 2020); gross profit ratio (GOPPAR) with ROA and ROE (Menicucci, 2018). Works by authors: Ngo The Chi & Nguyen Trong Co (2015), Nguyen Van Cong (2019), Nguyen Van Cong (2022), Nguyen Trong Co & Nghiem Thi Tha (2015), Nguyen Thi Le Hang (2018), (Nghiem Thi Tha, Pham Duy Khanh (2021) [20]...said that: KPIs for analyzing profit margins are very diverse, depending on the specific purpose, common indicators used to analyze the profitability of businesses. Business includes: BEP, ROI, ROA, ROE, ROS, EPS……The author agrees with the views of these authors.

-Database used to analyze business performance: Works by authors: Ngo The Chi & Nguyen Trong Co (2015), Nguyen Van Cong (2019), Nguyen Van Cong (2022), Nguyen Trong Co & Nghiem Thi Tha (2015), Nguyen Thi Le Hang (2018), Nghiem Thi Tha & Pham Duy Khanh (2021), Yoo and Kim, 2015), Edison et al. (2020); Lim and Rokhim, 2020; Cyril and Singla, (2020); Menicucci, (2018) all say that two types of data are used: internal data and external data of the enterprise. Internal data of the business includes: financial reports, management reports, operational data and information inside the business... Data outside the business includes: data on the economic situation, politics, society, data about customers, suppliers...

-Analysis method: Works by authors: Ngo The Chi & Nguyen Trong Co (2015)[2], Nguyen Van Cong (2022), Nguyen Trong Co & Nghiem Thi Tha (2015), Nguyen Thi Le Hang (2018) ... all believe that when analyzing the profit and loss performance of businesses, it is necessary to use assessment methods, factor analysis methods, forecasting methods, combining qualitative analysis methods with quantitative analysis methods. quality when analyzing factors affecting the enterprise's profit margin. The author agrees with the group of authors about the methods of analyzing the profit and loss efficiency of enterprises.

III. Method

The study uses typical methods, synthesis, interpretation and selection of typical issues to make assessments and serve as a basis for recommendations based on annual report data of commercial companies. Energy business listed on Ho Chi Minh City stock exchange and Hanoi stock exchange (HNX).

IV. Current status of analytical methods

Survey results show that most companies have implemented analytical methods such as: comparing this year with the previous year, a few companies have used the column chart method to help. Users quickly grasp the basic features intuitively. In addition, some companies implement the method of analyzing trends and growth rhythms in the business cycle of 3-5 years such as Clean Natural Gas Vietnam Joint Stock Company (CNG), Petrovietnam Low Pressure Gas Distribution Joint Stock Company (PGD) and Thac Ba Hydropower Joint Stock Company (TBC). In particular, only two companies, Vinh Son-Song Hinh

Hydropower Joint Stock Company (VSH) and Thac Ba Hydropower Joint Stock Company (TBC), compare with the industry average.

Table 1: Analysis methods of 10 typical companies

No.	Companies	Stock code	Methods					
			Compare relative numbers	Compare with industry average	Chart	Factor analysis	Econometric model	Analyze growth trends and rhythms
01	Clean Natural Gas Vietnam Joint Stock Company	CNG	☑	-	☑	-	-	☑
02	Khanh Hoa Power Joint Stock Company	KHP	☑	-	☑	-	-	-
03	Petrovietnam Low Pressure Gas Distribution Joint Stock Company	PGD	☑	-	☑	-	-	☑
04	Thac Ba Hydropower Joint Stock Company	TBC	☑	☑	☑	-	-	☑
05	Vinh Son-Song Hinh Hydropower Joint Stock Company	VSH	☑	☑	☑	-	-	
06	Central Area Electrical Mechanical Joint Stock Company	CJC	-	-	-	-	-	-
07	Ninh Binh Power Joint Stock Company	NBP	☑	-	-	-	-	-
08	Pha Lai Thermal Power Joint Stock Company	PPC	☑	-	-	-	-	-
09	Petrovietnam power services joint stock company	PPS	☑	-	-	-	-	-
10	Petro Vietnam lpg joint stock company	PVG	☑	-	-	-	-	-

(**Source:** author compiled from survey results)

Notes:

☑ : Implementation

\- : Unimplemented

Companies only carry out a simple comparative analysis method between this year and the previous year such as: Ninh Binh Power Joint Stock Company (NBP), Pha Lai Thermal Power Joint Stock Company (PPC). In particular, there is one company that does not conduct khả năng sinh lợi analysis, which is Central Electromechanical Joint Stock Company (CJC). No company uses factor analysis method to detect and evaluate factors affecting profit margins of listed energy trading companies in Vietnam.

Regarding the analysis and evaluation method, companies have used a simple comparison method between this period and the previous period to see the fluctuations in profitability indicators, thereby determining the areas that should be improved. and yet. Some companies have compared multiple periods (from 3 to 5 periods) to see the company's growth trend and rhythm. In addition, some companies have collected additional data from a number of competitor companies, thereby helping the company determine its competitive position in the market. If the company's profitability is lower than that of its competitors, the company needs to find out the reasons and have solutions to improve profitability, thereby improving its competitive position. However, the majority of companies are evaluated using the simple comparison method. This method has certain limitations. The comparison of most companies is only done at 2 points in time or 2 periods. consecutively or compare actual numbers with plans. This does not fully reflect the fluctuating trend as well as the growth rhythm of the indicators when analyzing. Besides, most companies carry out the comparison method within their own company without actually implementing it. currently compared with companies operating in the same energy business sector. When comparing profitability indicators, it only shows the change without specifying the cause of that change. This shows that there are still many companies that have not implemented an analysis of growth trends and rhythms to be able to consider the changes and growth trends of profitability over different business cycles. companies can identify the strengths and weaknesses of their business operations, and combine data and charts, helping to create a comprehensive, intuitive view of their profitability. company in the past, present and future.

Regarding factor analysis method: listed energy trading companies are not currently using factor analysis method to determine the influence of factors affecting profitability. This makes it difficult for companies to determine which factors have a positive impact and which factors have a negative impact on profitability, making it difficult for companies to come up with appropriate solutions for limitations as well as problems. Maintain positive factors, thereby improving profitability

V. Solution

Listed energy trading companies are not currently using factor analysis methods to determine the influence of factors affecting profitability. This makes it difficult for companies to determine which factors have a positive impact and which factors have a negative impact on profitability, making it difficult for companies to come up with appropriate solutions for limitations as well as problems. Maintain positive factors, thereby improving profitability.

Listed energy trading companies can apply this method in determining trends and the level of influence of each factor on analytical criteria. To analyze the impact of each factor on profitability, analysts can use the elimination method to consider whether there are any factors that affect the company's profitability between two periods. This tool requires that when determining the influence of a certain factor on an analytical criterion, the influence of the remaining factors must be excluded. To implement this method, analysts need to determine criteria as well as formulas for analytical indicators. Based on analyzing the profitability of companies, they can combine Dupont analysis to consider. relationship of influencing factors. In which, the order of arrangement of factors must comply with the regulations: from quantity factors change first, quality factors change later, depending on the relationship of factors with each other to use the difference method. Continuous substitution method or balanced number method as appropriate. On that basis, collect data cal,culate values, and finally provide comments and solutions.

For example, to consider the influence of factors on asset profitability (ROE) at PetroVietnam Low Pressure Gas Distribution Joint Stock Company (PGD) in the period 2020-2021)

From the original formula of ROE:

$$ROE = \frac{\text{Profit after tax}}{\text{Average equity}} \quad [1]$$

Using the Dupont tool to analyze, the ROE indicator can consider the influence of the factor "Net revenue profitability coefficient - ROA" (reflects the profitability of net revenue), the factor "Asset turnover -TAT" (reflects asset utilization efficiency), and "Average financial leverage -AFL" factor (reflects liability use policy) to ROE, when used Dupont tool, the ROE indicator is transformed in relation to average total assets into the form:

$$ROE = \frac{\text{Profit after tax}}{\text{Revenue}} \times \frac{\text{Revenue}}{\text{Total assets Average}} \times \frac{\text{Total assets Average}}{\text{Average equity}} \quad [2]$$

$$ROS = \frac{\text{Profit after tax}}{\text{Revenue}} \quad [3]$$

$$TAT = \frac{\text{Revenue}}{\text{Total assets Average}} \quad [4]$$

$$AFL = \frac{\text{Total assets Average}}{\text{Average equity}} \quad [5]$$

From formulas [2], [3], [4], [5], we determine the formula for factor analysis as follows:

$$ROE = ROS \times TAT \times AFL \quad [6]$$

Based on the transformation results [6], analysts determine the value of ROE in the analysis period and the base period::

Analysis period: $ROE_1 = ROS_1 \times TAT_1 \times AFL_1$ [7]

Original period: $ROE_0 = ROS_0 \times TAT_0 \times AFL_0$ [8]

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Based on the calculation results, the analyst compares the analysis period with the base period (ROE1 with ROE0) and then compares each ROE component (ROS, TAT, AFL). From there, we can draw out the causes affecting the profitability of VCSH.

Table 2: Results of analysis of factors affecting the profitability of equity (ROE) at PetroVietnam Low Pressure Gas Distribution Joint Stock Company

Items	Year 2021	Year 2021	Difference	
			amount	(%)
Profit after tax	254.019.784	202.913.778	51.106.006	25,2 %
Revenue	8.996.079.897	7.526.763.927	1.469.315.970	19,5 %
Total assets Average	3.307.220.383	3.116.233.544	190.986.839	6,1%
Average equity	1.356.007.366	1.346.701.806	9.305.560	0,7%
ROE	0,187	0,151	0,036655	24,3 %
ROS	0,028	0,027	0,001278	4,7%
TAT	2,720	2,415	0,304793	12,6 %
AFL	2,439	2,314	0,124965	5,4%
The degree of influence of factors on ROE				
ROS	$(ROS_1- ROS_0)$ x TAT x AFL		0,007141	19,5 %
TAT	ROS x $(TAT_1 -TAT_0)$ x AFL		0,019915	54,3 %
AFL	ROS_1 x TAT_1 x (AFL_1-AFL_0)		0,009598	26,2 %
Total influence of factors			0,036655	100 %
Based on the level of influence of the factors, comments and recommendations				

(**Source:** suggested by the authors)

Based on the above results, the factor with the most decisive influence on ROE is TAT accounting for 54.3%, followed by the AFL factor accounting for 26.2% and finally the ROS factor accounting for 19.5%. To boost the growth of return on equity (ROE), the company needs to find ways to improve TAT first, by promoting sales policies to increase revenue, or strengthening the management of the company's total assets.

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