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ACQUISITION RECOMMENDATIONS FOR PT JAYA AGRA WATTIE TBK. AND CLUSTERING ANALYSIS OF PLANTATION INDUSTRY IN INDONESIA BASED ON FINANCIAL STATEMENT & RATIO FOR PERIOD OF JANUARY 2021-2022

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ABSTRACT

In Indonesia, plantation industry has an important role in nation's economic growth. One of them is PT Jaya Agra Wattie (JAWA) Tbk., a company established for more than 100 years indicating that there were financial problems having impact on the company's performance. Therefore, the researcher recommends that the JAWA should be acquired, so that this company could remain establishing and become a supporter of economic growth. The researcher used K-Means Clustering method with Financial Ratio, Debt Equity Ratio (DER), Price to Book Value (PBV), and Return on Equity (ROE).

Keynote:Acquisition, plantation industry, K-means Clustering, Financial Ratio

INTRODUCTION

Indonesia is famous for its agriculture, forestry and fisheries sectors. This industry is a mainstay in Indonesian economy. In this case, the researcher will focus on plantation and crop sub-industry.

According to the report of Directorate General of Plantation, Ministry of Agriculture of Republic of Indonesia, the plantation sub-industry is the strength and support of national economy. This evidence is the contribution to the increase in amount of GDP, the high value of domestic and foreign investment. It contributed to the international trade balance surplus, the source of foreign exchange for the country, contributing to increasing state revenues through tobacco excise, export taxes and export duties, export levies for palm oil products, and supply of food and industrial raw materials.

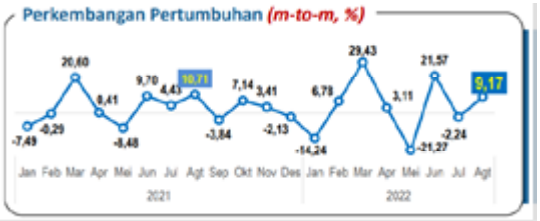

Figure 1: Official News of Statistics September 15, 2022, "*Export Growth Developments*" bps.go.id

Based on the data above, increasing of export growth reached US$ 29.43 billion in March 2022, and it experienced a significant increase from the previous year. The data of Central Statistics Agency indicated that, in the period January-August 2022, the contribution of plantation, forestry and fishery industries increased by 17.14% for Indonesia's export growth.

In this study, the researcher chose the Plantation and Crops sub-industry, consisting of 28 companies listed on the Indonesia Stock Exchange. The researcher chose 3 ratios as a tool for analysis, namely Debt Equity Ratio (DER), Return on Equity (ROE), and Price to Book Value (PBV). To provide recommendations to the best company for acquisition, the researcher used K-Means Clustering method. This method was used to determine company clusters from sub-industry based on the selected ratio. After doing the analysis, the researcher chose PT Jaya Agra Wattie Tbk. as a research subject.

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PT Jaya Agra Wattie (JAWA) Tbk. is a company established on January 20, 1921, under the name Handel Maatschappij James Alexander Wattie and Company Limited. On May 30, 2011, JAWA was officially listed on the Stock Exchange, with an offering price of Rp. 500,- /share.

Engaged in Agribusiness, JAWA conducts business activities, such as, planting, manufacturing, shipping and sales. As a company with 100 years of experience, JAWA continues to improve its business by diversifying its high-performance crops, namely rubber and oil palm.

JAWA attracted the attention of researcher, because, with a long historical record, JAWA was recorded to experience a significant decrease in clusters. The researcher divided the industry into 3 clusters based on the ratios. In 2021, JAWA would be included in Cluster 1, but, in 2022, JAWA would be reduced to Cluster 3. It raised many question marks, thus presenting an assumption that JAWA had opportunity to be acquired by other companies or investors.

METHODOLOGY

A. ACQUISITION

Acquisition is defined as a company taking a control of more than 50% of target company's equity.While, in a book by Donald M. Depamphilis mentions that an acquisition occurs when a company takes a control of *interest* in a company, a legitimate subsidiary of another company, or an asset selected from the company. The book by Donald M. Depamphilis (2019), explains that an Acquisition can be based on the following reasons:

1. Synergy
   Synergy is aimed at increasing cash flow by merging two businesses. There are two types of Acquisition carried out by basing on synergy, namely:
   a. Operating Synergy
      Operating Synergy occurs with several factors, namely to increase economy of scale, economic coverage, and acquisition of complementary technology assets and skills. The three factors are important determinants in creating shareholder wealth. Advantages of efficiency may come from these factors as well as from better managerial operating practices.
   b. Financial Synergy
      Financial synergy refers to reducing acquirer's cost of capital. It can occur when the acquirer and acquiree have relatively uncorrelated cash flows, realize cost savings and low transaction security, or experience increased investment opportunities that are better matched with internally generated funds. Types of financial synergies are as follows:
      b.1. Diversification
         Diversification occurs when a company buys a business outside the company's line. Diversification may create financial synergies reducing a cost of capital. Simply put, diversification allows company to move away from product lines having higher growth prospects. In particular, acquirers with limited growth opportunities often generate substantial cash flow, as they have a significantly lower level of investment than targets they are pursuing related or unrelated to current product or company.
      b.2. Strategic Realignment
         Acquisition may also be a solution for companies to adapt to changes in their external environment such as regulatory changes and technological innovation. Industries having experienced significant deregulation in recent years, financial services, healthcare, utilities, media, telecommunications, defense were making acquisitions, as deregulation broke down artificial barriers and stimulated competition.
      b.3. Hubris and the "Winner's Curse"
         CEO's with a track record of successful acquisitions may pay more than their target value for overconfidence. After overpaying, an acquirer may feel sorry for doing so, having experienced what is known as a "*Winner's Curse*". It is due to the CEO's arrogance, presence of multiple bidders may contribute to paying more as the acquirer is caught up in excitement of auction environment.

b.4. Buying Undervalued Assets: The Q-Ratio

Q- Ratio is ratio of market value of acquirer's stock to the cost of replacing its assets. Company may choose to invest in a factory with new equipment or acquire assets by buying company at a market value lower than the assets' replacement cost. It happens when stock price falls below book value.

b.5. Managerialsm (Agency Problem)

Differences from interests between shareholders and different management may be a factor in acquisitions caused by Agency Problems.Usually, managers tend to have goals to increase prestige, build their influence, increase compensation, or to defend themselves. Meanwhile, CEO has a goal to increase large and permanent compensation. Usually, agency problems arise in young CEOs having financial power to pursue acquisitions earlier in their careers.

b.5. Tax Consideration

This action may be taken if the acquiring company with accumulated losses and tax credits can use it to offset future gains.

b.6. Market Power

This theory is carried out by companies with the aim at increasing their ability to set product prices by reducing output or by colluding.

b.7. Misvaluation

Misvaluation occurs when investors make a wrong assessment before acquisition due to a lack of information about company being acquired. As a result, if the company is overvalued (undervalued), the company tends to decline.

B. FINANCIAL RATIO

Ratio is an analyst's tool to get a better view of a company's financial condition. In this study, ratio data were used to perform company clustering. In this discussion, the researcher used 3 Financial Ratios, namely:

1. Debt Equity Ratio

   Debt is a high-risk source of funding, because if creditors are not paid promptly, they can take legal action to get payment. In extreme cases, a company will be forced to go bankrupt because it cannot pay its debts. Debt to Equity Ratio shows a balance achieved by management.

   Principally, Debt Equity Ratio (DER) describes total liabilities and total shareholder equity. DER measures relationship between the amount of borrowed capital (debt) and the amount of capital contributed by shareholders (equity). If company's debt to equity ratio increases, it will increase risk of inability to meet its debts, so there is a possibility that the company will go bankrupt.

   Equation: Total Debt/Total Equity = Debt Equity Ratio

2. Return on Equity (ROE)

   Return on Equity is rated as one of the most important ratios. Because, ROE measures profitability, turnover, and leverage in one ratio. These ratios allow analysts to determine whether margin, leverage, or asset utilization drives the return of stock to shareholders. In addition, this ratio can measure management's performance, whether it is better, worse, or different. ROE can tell analysts how well a company rewards shareholders for their investment.

   Equation: Net Income/Total Equity

3. Price to Book Value

   Price to book value is a ratio used by investment advisors, investment managers, and investors to compare a company's market value (market capitalization) with its book value (shareholder equity). Price is expressed as multiply, i.e. the number of times on which the company's shares are traded per share compared to the book value per share of the company.

   Equation: market price per share/book value per share

C. K-MEANS

K-Means is one of tools used to perform clustering techniques in data mining. In K-Means analysis, data processing is to make several data groups having similar or same characteristics to others, but having different characteristics. The goal is to minimize difference from each of data in one cluster and maximize difference from other clusters.

The steps in K-Means algorithm are:

1. To determine the number of Clusters
2. To determine the Centroid value, using the following formula:

$$\overline{v}_{ij} = \frac{1}{N_i} \sum_{k=0}^{N_i} x_{kj}$$

Where:

Vij = Centroid/average of the I-th cluster for the j variable

Ni = the number of data that are members of the i-th cluster

k = index of cluster

j = index of variable

xkj = value of the k-th data in the cluster for the j-th variable

3. To calculate distance between the centroid point and the point of each object. To calculate the distance, you can use Euclidean Distance, namely:

$$D_e = \sqrt{(x_i - s_i)^2 + (y_i - t_i)^2}$$

Where:

De = Euclidean Distance

i = The number of objects

(x,y) = Object coordinates

(s,t) = Coordinates of the centroid

4. To group the objects. Determination of members of the cluster is to take into account the minimum distance of objects. The value obtained in the data membership in the distance matrix is 0 or 1, where the value is 1 for data allocated to clusters and 0 for data allocated to other clusters.
5. Return to stage 2, repeat until the resulting centroid value remains and the cluster members do not move to another cluster.

DISCUSSION

A. INDUSTRIAL CLUSTERING

In this study, the researcher chose the Plantation and Crop sub-industry consisting of 28 companies as follows:

Table 1:
List Company of Sub-Industry Plantation & Crop

No	Sub Industry	Code	Stock Name
1	Plantations & Crops	AALI	Astra Agro Lestari Tbk
2	Plantations & Crops	ANDI	PT Andira Agro Tbk
3	Plantations & Crops	ANJT	PT Austindo Nusantara Jaya Tbk.
4	Plantations & Crops	BISI	BISI INTERNATIONAL Tbk
5	Plantations & Crops	BTEK	Bumi Teknokultura Unggul Tbk
6	Plantations & Crops	BWPT	Eagle High Plantations Tbk
7	Plantations & Crops	CSRA	PT Cisadane Sawit Raya Tbk.
8	Plantations & Crops	DSNG	PT Dharma Satya Nusantara Tbk.
9	Plantations & Crops	FAPA	PT FAP Agri Tbk
10	Plantations & Crops	FISH	FKS Multi Agro Tbk
11	Plantations & Crops	GOLL	PT Golden Plantation Tbk
12	Plantations & Crops	GZCO	Gozco Plantations Tbk
13	Plantations & Crops	IPPE	Indo Pureco Pratama Tbk
14	Plantations & Crops	JAWA	Jaya Agra Wattie Tbk
15	Plantations & Crops	LSIP	PP London Sumatra Indonesia Tbk
16	Plantations & Crops	MAGP	Multi Agro Gemilang Plantation Tbk
17	Plantations & Crops	MGRO	PT Mahkota Group Tbk.
18	Plantations & Crops	OILS	Indo Oil Perkasa Tbk
19	Plantations & Crops	PALM	Provident Agro Tbk
20	Plantations & Crops	PGUN	PT Pradiksi Gunatama Tbk
21	Plantations & Crops	PSGO	PT Palma Serasih Tbk.
22	Plantations & Crops	SGRO	PT Sampoerna Agro Tbk
23	Plantations & Crops	SIMP	Salim Ivomas Pratama Tbk
24	Plantations & Crops	SMAR	PT Sinas Mas Agro Resources and Technology Tbk
25	Plantations & Crops	SSMS	PT Sawit Sumbermas Sarana Tbk.
26	Plantations & Crops	TAPG	Triputra Agro Persada Tbk
27	Plantations & Crops	UNSP	Bakrie Sumatera Plantations Tbk
28	Plantations & Crops	WAPO	Wahana Pronatural Tbk

Source: from Financial and Ratio accessed via idx.co.id

Using 3 ratios, namely Debt Equity Ratio (DER), Price to Book Value (PBV), and Return on Investment (ROE), the researcher conducted clustering using the K–means method.

Table II:
Results of 2021 Data Clustering

Company	PBV	DER	ROA	ZPBV	ZDER	ZROA	QCL_1
AALI	1,11	,45	,03	-,16643	-,38326	,64841	2
ANDI	1,71	,84	,06	,51197	-,28579	1,11868	2
ANJT	,38	,60		-,99182	-,34577		
BISI	1,44	,19	,07	,20669	-,44823	1,27544	2
BTEK	1,26	1,73	-,10	,00317	-,06338	-1,38945	2
BWPT	,93	3,03	-,06	-,36995	,26150	-,76242	2
CSRA	,99	1,42	,06	-,30211	-,14085	1,11868	2
DSNG	1,53	2,04	,02	,30845	,01409	,49165	2
FAPA	2,54	1,22	-,05	1,45042	-,19083	-,60566	3
FISH	,96	2,20	,04	-,33603	,05408	,80517	2
GOLL	,24	2,35	-,02	-1,15012	,09157	-,13538	2
GZCO	,48	1,58	-,13	-,87876	-,10086	-1,85972	2
JAWA	2,05	20,45	-,09	,89639	4,61490	-1,23269	1
LSIP	1,05	,22	,04	-,23427	-,44074	,80517	2
MAGP	1,37	2,90	-,05	,12754	,22902	-,60566	2
MGRO	4,29	1,33	-,03	3,42909	-,16334	-,29214	3
PALM	,74	,07	,10	-,58478	-,47822	1,74572	2
PGUN	1,46	1,37	-,03	,22930	-,15334	-,29214	2
PSGO	1,60	1,72		,38759	-,06588		
SGRO	,79	1,29		-,52825	-,17334		
SIMP	,35	1,03	-,01	-1,02574	-,23831	,02138	2
SMAR	,90	1,85	,01	-,40387	-,03339	,33489	2
SSMS	2,22	1,96	,03	1,08861	-,00590	,64841	3
UNSP	-,04	-2,32	-,12	-1,46670	-1,07550	-1,70297	2
WAPO	1,08	,07	-,02	-,20035	-,47822	-,13538	2

Table III:
Results of 2022 DATA Clustering

Company	PBV	DER	ROA	ZDER	ZPBV	ZROA	QCL_1
AALI	,93	,44	,06	-,47072	-,63567	,35801	1
ANDI	1,84	,86	-,07	-,32592	,04544	-,99320	2
ANJT	,58	,54	,04	-,43624	-,89763	,15013	1
BISI	1,14	,21	,11	-,55001	-,47849	,87771	1
BTEK	1,49	1,70	-,06	-,03632	-,21652	-,88926	2
BWPT	1,33	6,11	-,17	1,48405	-,33628	-2,03259	2
CSRA	1,62	1,17	,11	-,21904	-,11922	,87771	1
DSNG	,97	1,14	,05	-,22939	-,60573	,25407	1
FAPA	4,03	1,72	,03	-,02943	1,68460	,04620	2
FISH	1,51	1,90	,07	,03263	-,20155	,46195	1
GOLL	,24	2,47	-,03	,22914	-1,15211	-,57744	1
GZCO	,43	,95	-,03	-,29489	-1,00990	-,57744	1
IPPE	5,03	,02	,01	-,61551	2,43307	-,16168	2
JAWA	3,69	13,17	-,05	3,91804	1,43012	-,78532	3
LSIP	,87	,19	,10	-,55691	-,68057	,77377	1
MAGP	3,65	8,09	-,18	2,16667	1,40018	-2,13652	3
MGRO	4,56	1,94	,02	,04642	2,08129	-,05774	2
OILS	1,49	,78	,04	-,35350	-,21652	,15013	1
PALM	1,18	,04	,32	-,60862	-,44855	3,06043	1
PGUN	2,52	1,33	-,03	-,16388	,55440	-,57744	2
PSGO	2,85	1,78	,02	-,00874	,80140	-,05774	2
SGRO	,88	1,28	,03	-,18112	-,67309	,04620	1
SIMP	,38	,91	,03	-,30868	-1,04733	,04620	1
SMAR	,94	1,77	,08	-,01219	-,62818	,56589	1
SSMS	1,70	1,37	,10	-,15009	-,05934	,77377	1
TAPG	1,89	,64	,11	-,40176	,08287	,87771	1
UNSP	-,04	-2,13		-1,35674	-1,36168		
WAPO	2,12	,16	-,02	-,56725	,25502	-,47350	2

In the table of data above, JAWA is the only company occupying cluster 1, but in 2022 JAWA experienced a drastic decline by falling into cluster 3. In fact, in 2022, there was a significant change in cluster, from 1 company occupying cluster 1 to 16 companies.

B. JAWA ACQUISITION BASED ON RATIO ANALYSIS AND FINANCIAL STATEMENT

In this study, the selection of JAWA as a company recommended for acquisition by researcher is due to:

1. Clustering analysis, where JAWA drastically fell into cluster 3 in 2022 after occupying cluster 1 in 2021;
2. JAWA's Debt Equity Ratio (DER) has the highest value in the period of 2021 and 2022.

A high DER value indicates that the value of debt is higher than the value of Equity. In 2021, the value of JAWA had a DER value of 20.45 times and in 2022 it was 13.17 times. This condition shows that JAWA had a bad financial condition. Usually, investors tend to choose companies with low DER condition. Because, a low DER can indicate that companies' asset and cash values are in good condition, so that, if there is a problem, at least their assets are safe because proportion of debt obligations is low. Meanwhile, if the DER value is high, investors tend to feel worried because debt is a mandatory component, where the value of companies' assets and cash cannot be used as guarantees for future profits.

Graph I:
Total Debt, Revenue, Market Capital

Source: Finbox chart

The graph above shows that the debt graph has a constant increasing. While the revenue graph that looks sloping shows that there would be an increase in July 2021-May 2022. However, even though the revenue value would increase, the market capital would experience a decline in interest in 2022. It means that there was a possibility that the value of debt could be a "surprising factor" for potential acquirers. Why it was so, because there were indications that debt did not have been utilized optimally. In a sense, debt can be a factor in the luck of acquirers if it is true that the debt can be used to support business growth when the acquisition is officially made.

GRAPH II:
Valuation: 1 Year Price Total Return and Book Value/Market Cap

Source: Finbox chart

The graph above shows the valuation value of 1 Year Price Total Return and Book Value/Market Capital. The 1-Year Price Total Return chart showed a drastic decline in June 2022.

While on the Book Value/Market Capital chart, there had been a drastic decline since October 2020. This indicates that the value of JAWA was at a low level, it is a strong bargaining power that is sufficiently interesting of the acquirer side.

The above analysis could not be used as a definite guide in the success of a company after the acquisition. However, it could be used as an initial parameter that could increase the interest of investors or companies to start assuming JAWA as an opportunity.

There were several advantages that investors or companies would get if they acquired JAWA, for example:

1. JAWA brand with 100 years of experience in the plantation industry. This history also indicated JAWA's large market share so that it can survive until now
2. Total Assets built over a hundred years
3. Operational Management with experiences

The things that needed to be noted before acquiring JAWA are as follows:

1. A more in-depth checking process is necessary. Usually, large companies that suddenly experience financial problems tend to be caused by internal management problems.
2. Investors or companies that want to make acquisitions need to calculate market opportunities in the midst of the world economic recession in 2023.

CONCLUSION

1. Based on the results of industry clustering, PT Jaya Agra Wattie Tbk became the company selected to serve as a recommendation for the company to be acquired
2. The researcher used ratios of Debt Equity Ratio (DER), Price To Book Value (PBV) and Return on Equity (RoE).
3. PT Jaya Agra Wattie Tbk is recommended for acquisition because of:

a. Low valuation value
b. There were indications of financial problems indicated by the high value of the Debt Equity Ratio
c. JAVA is recommended based on its financial condition, Investors can make acquisitions at low prices

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