

The Effect of Economic Value Added (EVA) and Market Value Added (MVA) on Stock Returns

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ABSTRACT

This study analyze the factors that affect stock returns in food and beverages companies listed on the Indonesia Stock Exchange (IDX) for the 2017-2020 period. The variables in this study are Economic Value Added (EVA) and Market Value Added (MVA). This research was conducted using multiple linear regression analysis. The data collection tools used are literature study and documentation with purposive sampling method. The sample used in this study were 12 companies from a total population of 30 companies. The results of this study indicate that the higher or lower the value of Economic Value Added (EVA) does not affect the value of Stock Return, as well as the higher or lower value of the Market Value Added (MVA) also does not affect the Stock Return.

Keywords: Economic Value Added (EVA), Market Value Added (MVA), Return, Investment.

INTRODUCTION

The main reason investors invest in the capital market is of course profit. Before an investor decides to invest, of course, an investor must first know the company's financial condition. To determine the company's financial condition, an analysis of the company's financial statements is needed. In the company's financial statements, things that need to be considered and become the desire of investors are of course profits or commonly called returns. According to Ang (1997) in (Astuti, 2016) stated that the income desired by shareholders (return) is dividend income (dividend yield) and capital gains. Dividend yield is used to measure the amount of dividends per share against the stock price in percentage terms". The greater the dividend yield generated, the investor will certainly be more interested in buying the stock.

Total return is the overall return on investment in a certain period (Prasetja & Nuraini Dwiputri, 2022). Total return is also the rate of return on investment (Return) which is the sum of dividend yield and capital gains (Sanusi, 2023). Dividend yield is the rate of return that investors receive in cash at the end of each accounting period (Rahmadi, 2020). On the other hand, the higher the market price means that the stock is also in great demand by investors because the higher the stock price, it will certainly produce greater capital gains (Safitri et al., 2020). Capital gain itself is the difference between the market price of the current period and the price in the previous period. Return can certainly be a reference that must be considered in investing, because investors can use return to compare actual profits and expected profits in accordance with those provided by various stocks at various desired levels of return. Return alone is influenced by several factors, namely macro and micro factors (Amalia et al., 2021). Macro factors that affect stock returns are inflation,

foreign exchange rates, the international economy, political conditions of a country to its environmental conditions (Barakat et al., 2016). While micro factors that affect stock returns are the company's net income value, book value per share, debt to equity ratio and other financial ratios (Hidayat et al., 2022). To be able to ensure the rate of return from the investment made, potential investors should first learn information about related companies through financial statements (Lee, 2023).

Financial statements aim to provide information regarding the financial position, performance, and changes in the company's financial position (Abdulshakour, 2020). The availability of this information can certainly provide information to investors and potential investors, so they can analyze the performance of issuer companies. This information is useful for most people who need to make economic decisions, so that investors can measure company performance through analysis of the financial statements presented by the company so that the condition of the company can be known.

The analysis that is usually used by companies to analyze the performance of a company is financial ratio analysis. According to Horne (2005) "Financial ratios are a tool used to analyze the financial condition and performance of a company". Although financial ratio analysis such as ROI, ROE, and EPS is often used by many investors as a conventional measuring tool, it has the disadvantage that it tends to ignore the cost of capital so it is quite difficult to know whether a company has succeeded in creating added value or not. Therefore, in 1989, Stern Steward Management Service consultants in the United States introduced the concepts of Economic Value Added (EVA) and Market Value Added (MVA) as a measure of financial and market performance of companies to overcome the weaknesses of these financial ratios (Silvia & Wangka, 2022).

Economic Value Added (EVA) or economic value added is a financial management system to measure economic profit in a company, which states that welfare can only be created if the company is able to meet all operating costs (Operating Cost) and capital costs (Cost of Capital). Economic Value Added (EVA) indicates a good measure of the extent to which a company has provided additional value to the company's owners (Alvioni & Prabawa, 2024). In other words, if a management decides on Economic Value Added (EVA), then they will make financial decisions that will provide additional value for the owner of the company or in short try to make the owner of the company richer. The added value is created if the company generates a return on capital that exceeds the cost of capital. The higher the profit obtained by the company, the higher the dividends obtained by the company which also causes higher capital gains so that it has an impact on the company's high return (Alfian & Ghozali, 2024).

Not only Economic Value Added (EVA) that can be used to measure company performance but there is also Market Value Added (MVA) (Sahara, 2018). Market Value Added MVA is the difference between the market value of shares and own capital paid up by shareholders (Johan, 2018). The greater the MVA value generated, the greater the success of management in managing the company. If a company wants to multiply shareholder wealth, then the MVA used to assess the company's performance should be directly related to the return obtained by the company's shareholders. The advantage of MVA is also a single measure that can stand alone without the need for trend analysis, so it will certainly be easier to monitor the company's performance by management and fund providers. It is explained that all variables have values that tend to increase, the highest average operating profit occurred in 2020, with a value of 2,456,563,757,367 rupiah, this was also followed by the value of taxes, long-term debt, short-term debt and existing own capital, where the highest average tax value also occurred in 2020 with a value of 631,010,285,342 rupiah. In addition, the highest average value of long-term debt was in 2020 with a value of

9,727,418,829,310 rupiah and the highest average short-term debt also occurred in 2020 with a value of 4,335,237,057,467 rupiah. Not only that, but the highest average working capital also occurred in the same year, namely 2020 with a value of 13,394,276,711,907 rupiah. Different from the previous variable whose highest value occurred in 2020, the highest average stock price actually occurred in 2019 with a value of 4310 rupiah per share and the last is the highest number of outstanding shares in food and beverage sub-sector companies listed on the IDX in the 2017-2020 period occurred in 2020 also with a value of 6,416,248,761 shares.

As a good benchmark, Economic Value Added (EVA) and Market Value Added (MVA) should have an influence on shareholder wealth, of course, described by stock returns. It's just that not a few studies suggest that EVA and MVA do not have a significant effect on company stock returns such as research conducted by Hidayat (2014) states that only EVA has an effect on stock returns, while MVA does not affect stock returns. In addition, another study by Ansori (2015) in his thesis stated that EVA and MVA have a positive and significant effect on the company's stock return and the last is research by Widiyarsi and Hanifah (2018) which states that EVA and MVA do not have a significant effect on stock returns.

Based on the background that has been described, the main problem in this study is the value of stock returns in food and beverage sub-sector manufacturing companies that fluctuate from 2017-2020, financial ratio analysis has weaknesses so that new analyses such as EVA and MVA are needed as well as the results of previous research.

Empirical Review And Hypotheses Development

Signaling Theory

This research uses signal theory as the basis of research. Signal theory was first put forward by Spence (1973) who explained that the sender (owner of information) provides a signal or signal in the form of information that reflects the condition of a company which is beneficial for the recipient. Apart from that, signal theory according to (Brigham & Joel F, 2011) is an action taken by the management of a company to provide guidance to investors regarding how management can assess the company's prospects. The information contained in the financial reports itself is able to influence and serve as a signal for shareholders in decision making. The better the company's financial reports will certainly increase investors' interest in investing their funds in the company.

Return

According to Widiati (2013) return is the level of profit enjoyed by investors on the investments they make. In this case, the aim of corporate finance is to maximize company value. The maximum value of the company will of course also be able to maximize shareholder wealth. The wealth of shareholders can of course be seen from the amount of return they will receive on the investment they have given. Return is the profit obtained by investors from investment. Return also describes the condition of a financial investment, whether it can produce profits or losses (Brigham, 1999: 192).

Returns can be realized returns or expected returns (Jogiyanto, 2003:109). Realized return is a return that has occurred which is calculated based on historical data. This realized return will also be used as a basis or reference for determining expected returns to measure future risk. Meanwhile, expected return is the return that investors hope to obtain in the future or has not yet occurred.

Return consists of two components, namely capital gain (loss) and yield. There are many factors that can influence returns both internal and external, these internal factors include the company's net profit, book value per share, liability to equity ratio, and other financial ratios. Meanwhile, external factors that can influence returns include inflation, currency exchange rates,

international economic conditions, and non-economic factors such as foreign political events, demonstrations and wars.

The Effect of Economic Value Added (EVA) on Stock Returns

A company will always try to improve its image by successfully creating wealth for capital owners, which of course attracts investors to invest their funds. More investors certainly have an impact on the demand for shares, which causes share prices to rise in the capital market, which then has an impact on increasing the resulting capital gains. Return has a significant role in determining the value of an investment. Suharli (2005) states that returns can be an indicator for increasing the wealth of investors, including shareholders. EVA is one way to measure actual operating profitability which EVA itself was popularized by Stewart (1991). Positive EVA means that the company earns profits because the rate of return is greater than its capital, so companies that earn high profits will distribute dividends to their investors. The higher the profits earned by the company, of course the higher the dividends investors will receive. The higher the capital gain and dividends, the higher the stock return. This shows the positive influence of EVA on stock returns.

In signal theory, it is assumed that the company's economic added value or Economic Value Added (EVA) is able to describe the management condition of a company, which can be a positive signal so that the company is willing to invest its capital in that company. Research conducted by Hidajat (2018), Hidayat (2014), Widiati (2013) suggests that Economic Value Added (EVA) positively and significantly influences stock returns. So, the hypothesis we propose is:

H₁: Economic Value Added (EVA) has a significant positive effect on stock returns.

Influence of Market Value Added (MVA) on Stock Returns

The main goal of financial decisions is to maximize the prosperity of the company owner. For companies that are listed on the Stock Exchange, share prices can be a reference to their prosperity. Shareholders' own prosperity can be maximized by maximizing the difference between the market value of equity and the equity (own capital) submitted to the company by shareholders. This difference is what is called Market Value Added (MVA).

In signal theory, it is assumed that a positive MVA indicates that the company's shares are valued at greater than the book value per share by investors. The higher the capital gains and dividends, the share returns obtained by shareholders also increase, which shows that MVA has a positive influence on share returns.

Rachdian and Achadiyah (2019), Widasari and Hanifah (2018) and Hidajat (2017) stated that Market Value Added (MVA) positively and significantly influences stock returns. So, the hypothesis we propose is:

H₂: Market Value Added (MVA) has a significant positive effect on stock returns.

RESEARCH METHODS

Types of Research

This research method is a quantitative approach. This research is causal associative, which is research that aims to determine the relationship between two or more variables (Sugiyono, 2017: 9) we conducted this research on manufacturing companies in the consumer goods industry sector of the food and beverages sub-sector for the 2017-2020 period. We obtained our own research data from the official idx website, which is www.idx.com in the form of annual financial statements of related companies.

Object and Time of Research

This research was conducted on food and beverage sub-sector companies listed on the Indonesia Stock Exchange (IDX) for the 2017-2020 period. This research was conducted by accessing data through www.idx.co.id, Yahoo finance.

Data Collection Methods

The method of data collection in this study is by survey sample method. The survey sample method according to Kerlinger (1973) is research conducted on large and small populations, but the data studied are data from samples taken from these populations to find relative events, distribution, and relationships between variables.

Population and Sample

The population in this study is all manufacturing companies in the consumer goods industry sector of the food and beverages sub-sector listed on the Indonesia Stock Exchange (IDX) in 2017-2020. The total population in this study is as many as 30 companies.

We do this sampling itself with the purposive sampling method with the aim of obtaining a representative sample with the following criteria:

1. Food and beverages sub-sector manufacturing company listed on IDX for the 2017-2020 period.
2. The company was inconsistent in the IDX food and beverage sub-sector during the 2017-2020 period.
3. Companies that did not distribute dividends during the 2017-2020 period.

Research Model

The variables in this research include independent variables consisting of Economic Value Added (EVA) and Market Value Added (MVA). Meanwhile, the dependent variable is stock returns.

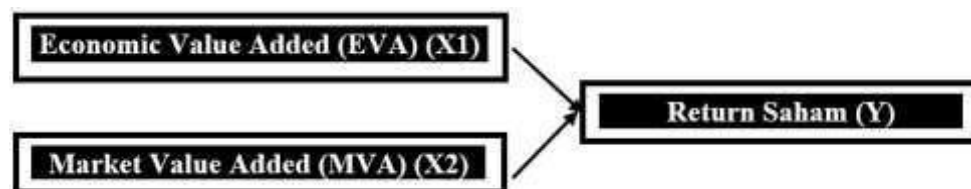


Figure 1. Research Model

RESULTS AND DISCUSSION

Description of the Object of Research

The results of this study discuss the effect of Economic Value Added (EVA) and Market Value Added (MVA) on the return of shares of food and beverages sub-sector companies listed on the Indonesian Stock Exchange (IDX) for the 2017-2020 period. Based on sampling carried out using the Purposive Sampling method produces the following samples:

Table 1. Company Sample Data

No	Company Name	Stock Code
1	Delta Djakarta Tbk	DLTA
2	Indofood CBP Sukses Makmur Tbk.	ICBP
3	Indofood Sukses Makmur Tbk.	INDF
4	Mayora Indah Tbk	MYOR
5	PT. Budi Starch & Sweetener Tbk	MIND
6	PT. Buyung Poetra Sembada Tbk.	HOCKEY
7	PT. Multi Bintang Indonesia Tbk.	MLBI
8	PT. Nippon Indosari Corpindo Tbk.	BREAD
9	PT. Wilmar Cahaya Indonesia Tbk.	CEKA
10	Sekar Laut Tbk.	SKLT
11	Tunas Baru Lampung Tbk.	TBLA
12	Ultra Jaya Milk Industry Tbk.	ULTJ

Source: Indonesia Stock Exchange

Data Analysis of Research Results

1) Stock Return

Return is the profit obtained by investors from investment. Return also describes the condition of a financial investment whether it can produce profits or losses (Brigham, 1999: 192). Stock return can be calculated by adding Capital Gain (loss) and Dividend Yield with the following formula:

Return on stock (r_i) = $(pt - pt-1 + dt) / (pt-1)$

Information:

Pt : Stock price in period t

Pt-1 : Stock price in period t-1

Dt : The average dividend of the current period.

Based on the formula above, the calculation of the average stock return is as follows:

Table 2. Results of Food and Beverages Company Return Calculation for the 2017-2020 Period

No	Company Code	<u>Stock Return (Times)</u>				Average Return
		2017	2018	2019	2020	
1	DLTA	(0,030)	0,302	0,307	(0,316)	0,066
2	ICBP	0,057	0,190	0,088	(0,122)	0,053
3	INDF	(0,008)	(0,001)	0,101	(0,101)	(0,002)
4	MYOR	0,244	0,311	(0,206)	0,347	0,174
5	MIND	0,126	0,074	0,135	0,019	0,089
6	HOCKEY	0,023	1,154	0,304	0,070	0,388
7	MLBI	0,205	0,209	0,002	(0,344)	0,018
8	BREAD	(0,199)	(0,051)	0,105	0,083	(0,016)
9	CEKA	(0,011)	0,143	0,287	0,129	0,137
10	SKLT	2,594	0,372	0,083	(0,019)	0,758
11	TBLA	0,268	(0,273)	0,179	(0,035)	0,035
12	ULTJ	(0,714)	0,052	0,253	0,003	(0,102)
Average		0,297	0,221	0,126	(0,026)	0,155
Δ		0,297	(0,076)	(0,095)	0,1	

Source: Appendix 2

Based on the data above, the Return value of Food and Beverages company shares listed on the Indonesia Stock Exchange (IDX) for the 2017-2020 period tends to decrease by an average of 0.155, which means that Food and Beverages sub-sector companies are able to generate profits from investment of 0.155 or 15.5% within 4 years. In this data, there are also 3 companies that have stock return values above average, namely MYOR, HOKI, and SKLT. However, there are 9 other companies that have below-average stock returns. The company with the highest average stock return is SKLT with a value of 0.758 or 75.8%. The difference in the value of return is certainly caused by the company's performance in the market which causes unstable stock prices and affects the dividends distributed so that of course it has an impact on the returns generated by the company. For the calculation of stock returns of Food and Beverages sub-sector companies from 2017-2020 can be seen in Appendix 2 (Stock Return Calculation).

2) Economic Value Added (EVA)

Economic Value Added (EVA) is the difference between adjusted NOPAT for one financial year and capital charge, which is based on the cost of capital multiplied by adjusted net operating assets. The formula of EVA is:

$$\text{EVA} = \text{NOPAT} - \text{Capital Charges}$$

Table 3. NOPAT Calculation

NOPAT (IDR)					
No	Compan y	2017	2018	2019	2020
1	DLTA	242.364.198.000	468.990.645.815	267.226.011.000	90.797.708.000
2	ICBP	3.558.358.000.00 0	4.659.917.000.00 0	5.323.174.000.00 0	6.660.939.000.00 0
3	INDF	6.186.212.000.00 0	6.657.905.000.00 0	6.984.356.000.00 0	9.214.819.000.00 0
4	MYOR	1.904.628.615.46 9	2.006.384.089.45 5	2.519.202.176.78 7	2.245.206.428.86 4
5	MIND	167.388.000.000	172.617.000.000	211.894.000.000	195.016.000.000
6	HOCKE Y	56.519.984.078	98.218.917.253	121.048.347.217	55.916.025.302
7	MLBI	1.113.156.000.00 0	1.206.137.000.00 0	1.224.041.000.00 0	321.995.000.000
8	BREAD	206.381.387.803	134.649.825.389	246.349.383.684	247.043.398.447
9	CEKA	125.204.810.926	106.094.480.178	204.967.371.546	156.490.886.007
10	SKLT	36.893.876.209	46.552.294.600	69.401.042.757	61.590.217.677
11	TBLA	1.455.731.000.00 0	1.415.521.000.00 0	1.180.672.000.00 0	1.604.418.000.00 0
12	ULTJ	651.505.000.000	645.154.000.000	924.900.000.000	1.052.410.000.00 0

Source: Appendix 3

Table 4. Capital Charges Calculation Table

Capital Charges (IDR)					
No	Compan y	2017	2018	2019	2020
1	DLTA	259.873.101.511	231.373.087.099	234.975.862.346	232.990.574.302
2	ICBP	4.145.045.958.26 7	4.189.701.057.36 1	4.400.759.240.76 9	5.157.352.409.68 0
3	INDF	5.024.760.908.46 0	4.482.937.376.68 9	4.949.915.625.80 3	5.848.987.667.23 9
4	MYOR	1.402.307.109.22 6	1.500.348.391.81 8	1.645.975.357.08 8	1.688.809.492.77 7
5	MIND	60.633.456.309	50.017.777.605	58.838.594.713	61.889.807.214
6	HOCKE Y	60.065.830.176	53.573.890.378	58.788.406.243	57.923.100.452
7	MLBI	485.958.151.370	458.881.017.817	457.333.426.333	547.124.112.155
8	BREAD	150.521.137.401	178.686.811.874	137.925.899.092	198.453.122.033
9	CEKA	102.531.087.134	130.671.673.911	125.538.891.799	123.443.829.821
10	SKLT	26.871.641.503	24.191.920.615	25.456.357.574	27.407.553.392

11	TBLA	643.672.898.717	898.057.197.775	851.081.429.735	829.539.211.141
12	ULTJ	750.199.007.225	789.737.147.815	778.711.847.183	662.385.770.298

Source: Appendix 4.

Table 5. EVA Calculation Table

<i>Economic Value Added</i> (IDR)					
No	Compan y	2017	2018	2019	2020
1	DLTA	(17.508.903.511)	237.617.558.716	32.250.148.654	(142.192.866.302)
2	ICBP	(586.687.958.267)	470.215.942.639	922.414.759.231	1.503.586.590.320
3	INDF	1.161.451.091.540	2.174.967.623.311	2.034.440.374.197	3.365.831.332.761
4	MYOR	502.321.506.243	506.035.697.637	873.226.819.699	556.396.936.087
5	MIND	106.754.543.691	122.599.222.395	153.055.405.287	133.126.192.786
6	HOCKE Y	(3.545.846.098)	44.645.026.875	62.259.940.974	(2.007.075.150)
7	MLBI	627.197.848.630	747.255.982.183	766.707.573.667	(225.129.112.155)
8	BREAD	55.860.250.402	(44.036.986.485)	108.423.484.592	48.590.276.414
9	CEKA	22.673.723.792	(24.577.193.733)	79.428.479.747	33.047.056.186
10	SKLT	10.022.234.706	22.360.373.985	43.944.685.183	34.182.664.285
11	TBLA	812.058.101.283	517.463.802.225	329.590.570.265	774.878.788.859
12	ULTJ	(98.694.007.225)	(144.583.147.815)	146.188.152.817	390.024.229.702

Source: Appendix 5.

3) Market Value Added (MVA) Calculation

According to Nainggolan (2016), "Market Value Added (MVA) is an accumulation of company performance from various investments with the right resource allocation". The formula of Market Value Added (MVA) is $MVA = (\text{Number of shares outstanding}) (\text{Share price}) - \text{Total own capital}$.

Based on the Market Value Added (MVA) calculation table below, the highest MVA value is ICBP companies with an MVA value of 103,359,170,200,000 rupiah. This shows that MVA has a positive value, which means that the company's management has succeeded in increasing the value of the capital invested by investors. However, the high value of MVA is also not followed by the value of the return of shares produced so that MVA can be said to have no influence on the value of the return of shares generated.

Table 6. MVA Calculation Table

No	Company	Market Value Added (IDR)			
		2017	2018	2019	2020
1	INTA	2.530.379.646.500	3.119.460.775.000	4.230.918.208.000	2.503.000.857.000
2	ICBP	83.466.651.200.000	99.159.788.600.000	103.359.170.200.000	61.344.716.100.000
3	INDF	19.847.986.062.500	15.497.377.425.000	15.382.392.012.500	(18.992.122.475.000)
4	MVOR	37.810.227.078.428	50.037.248.797.806	35.923.394.240.932	49.320.608.204.792
5	MIND	(771.794.247.972)	(794.580.253.248)	(821.921.271.714)	(876.755.261.162)
6	HOCKEY	332.419.488.241	1.170.461.694.361	1.594.133.725.181	1.768.974.444.241
7	MTRI	27.748.320.000.000	32.544.464.000.000	31.512.493.000.000	19.004.494.000.000
8	BREAN	5.067.667.616.771	4.506.885.545.489	4.949.838.175.303	5.185.953.839.949
9	CEKA	(135.494.187.067)	(158.522.575.842)	(137.644.696.834)	(198.639.994.864)
10	SKLT	452.244.775.772	696.874.743.000	731.710.257.034	674.054.311.773
11	TRI A	2.287.417.200.275	(162.700.417.765)	(47.535.555.695)	(893.793.492.035)
12	INTI	10.764.107.760.000	10.822.306.800.000	13.754.788.040.000	13.703.907.800.000

Source: Appendix 6.

Descriptive Analysis**Table 7.** Descriptive Test Results

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Sample: 2017 2020

	RETURN	EVA	MVA
Mean	0,133104166666667	400.919.414.483,854	15.600.319.420.763,5
Median	0,083	115.511.353.493,5	3.675.189.491.500
Maximum	2,594	3.365.831.332.761	103.359.170.200.000
Minimum	-0,714	-586.687.958.267	-18.992.122.475.000
Std. Dev.	0,445335170911028	695.010.942.004,171	26.255.825.047.035,4
Skewness	3,65332268714442	2,27667498656149	1,95922608559668
Kurtosis	21,2388024720802	9,13218470437678	6,38590959589632

Jarque-Bera	772,0820	116,6734	53,63730
Probability	0,000000	0,000000	0,000000
Sum	6,389000	19.244.131.895.225	748.815.332.196.650
Sum Sq. Dev.	9,321200	2.27028898467597E+25	3.2400312398325E+28
Observations	48	48	48

Source: Appendix 7.

Based on table 4.14 above, it can be seen that the number of observational data is 48 companies. The following is a description of the descriptive statistical analysis data that has been processed:

a) The variable Economic Value Added (EVA) has a standard deviation value of 695,010,942,004,171 which value is greater than the mean value of 400,919,414,483,854. This shows that the EVA variable is heterogeneous which means that all individuals in relative population members have individual traits or it can be said that the data produced is fluctuating. In addition, the maximum value in the data is 3,365,831,332,761 obtained from the Indofood Sukses Makmur Tbk. (INDF) company in 2020 and the minimum value of -586,687,958,267 obtained from the Indofood CBP Sukses Makmur Tbk. (ICBP) company in 2017.

b) The variable Market Value Added (MVA) has a standard deviation value of 26,255,825,047,035 which is greater than the mean value of 15,600,319,420,763. This shows that the MVA variable is heterogeneous which means that all individuals in the relative population members have individual traits or it can be said that the data produced is fluctuating. In addition, the maximum value in the data is 103,359,170,200,000 obtained from the Indofood CBP Sukses Makmur Tbk. (ICBP) company in 2019 and the minimum value of -18,992,122,475,000 obtained from the Indofood Sukses Makmur Tbk. (INDF) company in 2020.

c) The variable Stock Return (Y) has a standard deviation value of 0.445335170911028 which value is greater than the average value (mean) of 0.133104166666667. This shows that the variable Stock Return is heterogeneous which means that all individuals in relative population members have individual traits or it can be said that the resulting data is fluctuating. In addition, the maximum value in the data is 2.594 obtained from Sekar Laut Tbk. (SKLT) in 2017 and the minimum value is -0.714 obtained from Ultra Jaya Milk Industry Tbk. (ULTJ) in 2017. This means that the value of stock returns that can be generated by food and beverages companies that are sampled in this study ranges from -0.714 to 2.594.

Determination of Estimation Models

a) Common Effect Model

The Common Effect Model is a data panel that combines time series data with cross sections and estimates it using the Ordinary Least Square (OLS) approach.

Table 8. Common Effect Model Approach Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.171460	0.083553	2.052110	0.0460
EVA	-6.68E-14	9.53E-14	-0.701462	0.4866
MVA	-7.41E-16	2.52E-15	-0.293711	0.7703
R-squared	0.013648	Mean dependent var		0.133104
Adjusted R-squared	-0.030190	S.D. dependent var		0.445335
S.E. of regression	0.452007	Akaike info criterion		1.310225
Sum squared resid	9.193983	Schwarz criterion		1.427175
Log likelihood	-28.44541	Hannan-Quinn criter.		1.354421
F-statistic	0.311332	Durbin-Watson stat		1.394809
Prob(F-statistic)	0.734035			

Source: Appendix 8.

b) Fixed Effect Model

This Fixed Effect Model assumes that differences between individuals can be accommodated from differences in interception. This fixed effect model is a panel data estimation technique that uses dummy variables to determine intercept differences.

Table 9. Test Results of Fixed Effect Model Approach

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.102670	0.217369	-0.472331	0.6397
EVA	1.32E-13	2.02E-13	0.655555	0.5165
MVA	1.17E-14	1.02E-14	1.150299	0.2580
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.280749	Mean dependent var		0.133104
Adjusted R-squared	0.005741	S.D. dependent var		0.445335
S.E. of regression	0.444055	Akaike info criterion		1.452756
Sum squared resid	6.704284	Schwarz criterion		1.998523
Log likelihood	-20.86615	Hannan-Quinn criter.		1.659002
F-statistic	1.020876	Durbin-Watson stat		1.817778
Prob(F-statistic)	0.454817			

Source: Appendix 9.

c) Random Effect Model

The Random Effect Model estimates that in panel data, interference variables may be interrelated over time with individuals. In this model, the difference in interception is accommodated by each company's error terms. The advantage of this model is that it can eliminate heteroscedasticity. This random effect model is also familiarly called the Generalized Least Square (GLS) technique.

Table 10. Test Results of the Random Effect Model Approach**Model Testing**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.168191	0.089421	1.880883	0.0665
EVA	-6.27E-14	9.97E-14	-0.629306	0.5323
MVA	-6.37E-16	2.69E-15	-0.237187	0.8136
Effects Specification				
			S.D.	Rho
Cross-section random			0.098083	0.0465
Idiosyncratic random			0.444055	0.9535
Weighted Statistics				
R-squared	0.010570	Mean dependent var		0.121753
Adjusted R-squared	-0.033404	S.D. dependent var		0.436070
S.E. of regression	0.443293	Sum squared resid		8.842897
F-statistic	0.240370	Durbin-Watson stat		1.448677
Prob(F-statistic)	0.787340			
Unweighted Statistics				
R-squared	0.013562	Mean dependent var		0.133104
Sum squared resid	9.194786	Durbin-Watson stat		1.393235

Source: Appendix 10.

According to (Widarjono, 2007) there are three specification tests in determining the right model to be used to describe the data. The three tests are:

a) Chow Test

This Chow test is a test to determine whether the fixed effect or common effect model is most appropriate to use to estimate panel data.

Table 11. Chow Test Results

Effects Test	Statistics	d.f.	Prob.
Cross-section F	1.147838	(11,34)	0.3576
Cross-section Chi-square	15.158520	11	0.1754
Cross-section fixed effects test equation:			
Dependent Variable: RETURN			
Method: Panel Least Squares			
Date: 12/09/21 Time: 21:58			
Sample: 2017 2020			
Periods included: 4			

Cross-sections included: 12

Total panel (balanced) observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.171460	0.083553	2.052110	0.0460
EVA	-6.68E-14	9.53E-14	-0.701462	0.4866
MVA	-7.41E-16	2.52E-15	-0.293711	0.7703
R-squared	0.013648	Mean dependent var		0.133104
Adjusted R-squared	-0.030190	S.D. dependent var		0.445335
S.E. of regression	0.452007	Akaike info criterion		1.310225
Sum squared resid	9.193983	Schwarz criterion		1.427175
Log likelihood	-28.44541	Hannan-Quinn criter.		1.354421
F-statistic	0.311332	Durbin-Watson stat		1.394809
Prob(F-statistic)	0.734035			

Source: Appendix 11.

Based on the test results in the table above, the probability value of cross-section chi square is 0.1754 which is greater than the critical limit of 5% or 0.05 ($0.1754 \geq 0.05$) so that H_0 is accepted. Thus the right model is used, namely the Common Effect Model (CEM).

b) Langrange Multiplier (LM) Test

This Lagrange Multiplier (LM) test is a test to determine whether the random effect or common effect model is most appropriate to use to estimate panel data.

Table 12. Langrange Multiplier (LM) Test Results

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.035244 (0.8511)	0.508487 (0.4758)	0.543732 (0.4609)
Honda	-0.187735 --	-0.713083 --	-0.636975 --
King-Wu	-0.187735 --	-0.713083 --	-0.718985 --
Standardized Honda	0.311054 (0.3779)	-0.445540 --	-3.664441 --
Standardized King-Wu	0.311054 (0.3779)	-0.445540 --	-3.324051 --
Gourierioux, et al.*	--	--	0.000000 (≥ 0.10)
*Mixed chi-square asymptotic critical values:			
	1%	7.289	
	5%	4.321	

10%	2.952
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Source: Appendix 12.

Based on the results of testing between the common effect model and the random effect model produces a Breusch-Pagan value of 0.4609. Both values are greater than the critical cut-off values of 5% or 0.05 ($0.4609 > 0.05$) so the appropriate model to use is the Common Effect Model (CEM).

Normality Test

The normality test aims to test whether in a linear regression model the dependent variable and the independent variable both have a normal distribution or not. A good regression model is to have a normal or near-normal data distribution. The way to see normality is to look at a histogram that compares observational data with distributions close to normal distributions.

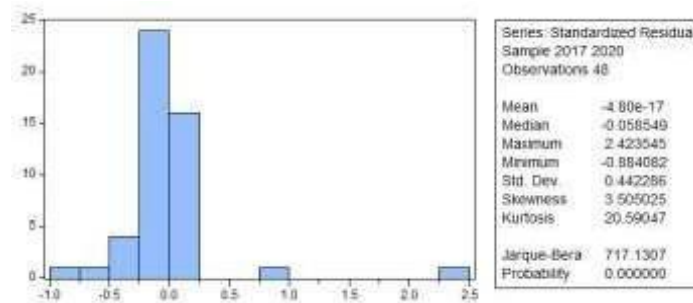


Figure 2. Normality Test Results.

Based on the figure above, the magnitude of the jarque-fallow probability value in the normality test results is smaller than the significance level, which is 0.00000 which is smaller than 0.05 or 5% ($0.00000 < 0.05$). So it can be concluded that the research data reject H_0 or the residuals are not normally distributed.

However, in this study we refer to the central limit theory which states that the sampling distribution curve (for sample sizes of 30 or more) will be centered on the value of the population parameter and will have all the properties of a normal distribution. Therefore, based on this theory, because the number of research units is 48 ($48 > 30$), the data is assumed to be normally distributed.

CONCLUSION

Based on the research conducted, several things can be concluded as follows: Economic Value Added (EVA) does not have a significant positive effect on stock returns in food and beverage subsector companies listed on the Indonesia Stock Exchange (BEI) for the 2017-2020 period and Market Value Added (MVA) also does not have a significant positive effect on stock returns in companies. food and beverage subsector listed on the Indonesia Stock Exchange (BEI) for the 2017-2020 period. Therefore, both proposed hypotheses were rejected.

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