International Journal of Research and Review
Vol.9; Issue: 7; July 2022
Website: www.ijrrjournal.com
Research Paper *E-ISSN: 2349-9788; P-ISSN: 2454-2237*

The Effect of Operating Leverage, Financial Leverage, Profitability, Company Size, and Asset Growth on Systematic Risk in Manufacturing Companies Listed on The Indonesia Stock Exchange

Pebrina Sabatini Turnip[1], Iskandar Muda[1], Rujiman[1]

[1]Department of Accounting, Faculty of Economics and Business at Universitas Sumatera Utara, Indonesia

Corresponding Author: Pebrina Sabatini Turnip

DOI: https://doi.org/10.52403/ijrr.20220707

ABSTRACT

This study examines and analyzes the effect of Operating Leverage, Financial Leverage, Profitability, Company Size, and Asset Growth on Systematic Risk in Manufacturing Companies Listed on the Indonesia Stock Exchange. The population in this study was 169 manufacturing companies listed on the Indonesia Stock Exchange for the 2016-2020 period, with a saturated sampling technique, namely a census sampling technique where the entire population was sampled, but only 132 samples. The data analysis method used descriptive statistical tests, classical assumption tests, and panel data regression analysis with statistical data processing software tools, namely Eviews.

The study results of financial leverage and asset growth positively and significantly affect systematic stock risk. In contrast, company size negatively and significantly affects systematic stock risk. Operating leverage, profitability, and accounting beta variables do not significantly affect the systematic risk of stocks in Manufacturing companies listed on the IDX for the 2016-2020 period.

Keywords: operating leverage, financial leverage, beta accounting, systematic risk.

INTRODUCTION

Stock investment is an investment activity by investors which is carried out through buying and selling shares in the capital market. The level of development of the capital market becomes one of the indicators that investors continuously monitor to see the development of stock prices in the capital market as a material consideration in investing. It is because stock prices reflect the company's performance. The stock price is the price that occurs in the stock market, which is determined by the supply and demand for shares. Stock is an investment commodity that is very sensitive to any changes, be it changes in the country, abroad, politics, economy, or monetary.

Stocks themselves have a high level of risk. Hence, investors need up-to-date information about stock movements that help investors in the investment decision-making process in companies listed on the Indonesia Stock Exchange (IDX). Stock risk is the risk associated with stock changes occurring in the market where there is a difference between the actual and expected returns. Big differences will create significant risks too. Risk arises from uncertainty about something that is expected to happen in the future.

It is essential to know the level of stock risk, in which case the risk in stock investment can be classified into 2, namely unsystematic risk and systematic risk. Systematic risk is often referred to as market risk because it influences current economic conditions. This risk is a risk that

must exist in every company in the capital market. Meanwhile, unsystematic risk is more likely related to the state and performance of the company or other companies in similar sectors (Jogiyanto, 2015). In addition, business managers cannot control systematic risk and cannot be eliminated by portfolio diversification (Tekin, 2021).

Based on the nature of the two risks, unsystematic risk is a risk that investors easily avoid by doing good diversification in investing. However, systematic risk is not easily avoided because it relates to market risk, affecting many companies. So, in this case, this systematic risk will be more relevant for management and investors in assessing the level of securities based on expectations of investment risk (Sartono, 2015). Systematic risk is measured using the beta (β) of shares.

Beta is a measure of the coefficient number that describes the sensitivity or tendency of a stock to respond to the market. Stocks with a beta of one are stocks that move in the direction of market movements. In contrast, stocks with a beta of less than one move slower than market movements, while stocks with a beta of more than one describes the company's stock price, which fluctuates compared to the market (Darmadji & Fakhruddin, 2012). Beta also shows the type of stock of the company, where when the shareholder's expectation of the stock is higher than the return given by the company, this occurs in aggressive stocks. Meanwhile, when the stock returns are higher than shareholders' expectations, it often happens in detention stocks (Bhuva et al., 2021).

This study takes data from Manufacturing companies as a sample because the Manufacturing Sector is the most dominant and is ogled by investors from all sectors on the IDX. Generally, Manufacturing companies listed on the IDX are large companies that promise higher profits and higher stock returns and share prices that are considered to continue to rise even in a country experiencing turmoil due to the COVID-19 pandemic. The following is the average systematic risk rating for all Manufacturing companies sampled during the 2016-2020 period based on the assessment of Husnan (1998).

Table 1. The Average Level of Systematic Risk of Manufacturing Companies on the IDX for the 2016-2020 period

Risk Category Based on Beta Value (β)	Number of Companies	Percentage
β > 1 = The rate of return on stock i is greater than the rate of return on the overall stock in the market.	**80 Companies**	**60,60**
β < 1 = The rate of return of stock i increased less than the rate of return of the overall stock on the market.	**52 Companies**	**39,40**

Table 1 shows the risk categories based on the beta value of the stock, where for the value of > 1, there are 80 companies from 132 manufacturing companies sampled during the 2016-2020 period. This value indicates that 60.61% of manufacturing companies have a higher level of systematic risk than systematic market risk, this type of stock is often also referred to as aggressive stock. At the same time, 50 companies from the entire sample during the period have a value of < 1, which indicates that 39.4% of companies have a level of systematic risk of stock i, which is smaller than the market's systematic risk, this type of stock is often also referred to as defensive stock. In addition, the average percentage of categories from each sub-sector also shows different values, as shown in the following table.

Table 2. The Average Level of Systematic Risk of Sub-Sector of Manufacturing Companies on the IDX for the 2016-2020 period.

Sub Sector	Category	Number of Companies	Percentage
Basic and Chemical Industry	β > 1	**38**	**64,40**
	β < 1	**21**	**35,60**
Consumer Goods Industry	β > 1	**20**	**51,28**
	β < 1	**19**	**48,72**
Various Industries	β > 1	**22**	**64,71**
	β < 1	**12**	**35,29**

Table 2 shows the percentage level of the risk category for each Manufacturing company Sub-sector sampled during the 2016-2020 period, where there are 59 Basic and Chemical Industry Sub-Sector companies, 39 Consumer Goods Industry

Sub-Sectors, and 34 Miscellaneous Industries Sub-Sectors. In the category > 1 or at the profit level, the share of i increases more than the overall profit level of the shares in the market, owned by 38 companies or 64.40% of the entire Basic and Chemical Industry Sub-Sector, 20 companies or about 51.28% of the whole Consumer Goods Industrial Sub-Sector. In the Miscellaneous Industry Sub-Sector, there were 22 companies, or around 64.71%. Meanwhile, the rest of each sub-sector has a value of < 1, which means that the profit level of stock i increases less than the overall profit level of market shares.

The phenomenon above shows the percentage of companies with a beta value above one is greater than a beta below 1. So, in this case, investors must be quite observant in choosing companies with a low level of systematic risk to invest because beta shows a relationship between stock returns and market returns. Investors who tend not to dare to take high risks prefer stocks with a low beta, and vice versa.

The importance of understanding and knowing the company's systematic risk is to avoid making mistakes in investing so that by knowing the causes of these risks, investors can be more observant in seeing financial performance as a reflection of the emergence of systematic risk of shares in a company. Understanding systematic risk can make it easier for investors to evaluate which portfolios are profitable and which are unprofitable so that investors can avoid the risk of uncertainty from the stocks they invest in (Shankar et al., 2021). can affect systematic risk, including operating leverage, financial leverage, profitability, company size, asset growth, and accounting beta.

The first factor tested in this study is operating leverage. It shows how much a company uses all its fixed costs in its operations. Operating leverage occurs when a company uses assets that can incur fixed costs or expenses. Operating leverage is a collection of fixed operating costs such as depreciation and general and administrative costs that aim to increase the company's operating profit (Irfani, 2020).

The analysis of operating leverage itself aims to know how sensitive the company's operating profit is to changes in sales results and how minimal the sales target is so that the company does not experience the risk of loss (Sutrisno, 2012). Operating leverage can measure changes in income or sales of the company's operating profits. The company's high operating profit level will impact increasing net income and minimize the company's financial risk.

Operating leverage is calculated using the Degree of Operating Leverage DOL indicator, which shows the percentage change in Earning Before Interest and Tax (EBIT) caused by the percentage change in sales (Keown, 2011). The high level of sales will be able to cover operational costs and minimize operating risk. A high DOL will always offset a high level of operational risk because the profits earned are getting bigger, and the percentage increase in EBIT is faster or greater than the percentage increase in sales volume. Or in other words, EBIT will be more sensitive to changes in sales volume (Syamsuddin, 2011). Fluctuating EBIT received by the company and the impact on increasing sales achieved by the company will cause a high level of systematic risk of shares received by investors (Okiyatum, 2012). From the description, it can be concluded that operating leverage positively influences the systematic risk of the company's shares.

Syifa (2013), Gumilar (2016), and Utami & Nuzula (2017) state that there is a positive and significant influence between operating leverage on the systematic risk of company shares. Meanwhile, Prakoso & Haryanto (2012) and Hermawan (2018) found different things, where the test results showed a negative influence between operating leverage on systematic risk.

Financial leverage is the second factor tested in this study. The company can cover interest costs from the profits earned. Handayani (2014) states that financial leverage uses specific sources of funds,

resulting in a fixed burden in the form of interest costs. Financial leverage will occur when the company uses debt and must incur a fixed cost in the form of interest to be paid from the results of operating activities, regardless of the company's operating profit level (Ramadani et al., 2019).

Whether or not a company's financial leverage is beneficial can be seen from its effect on the company's earnings per share (EPS), taxes, interest, and dividends, which are factors that cause a reduction in the income of ordinary shareholders. But on the other hand, tax is not a fixed financial obligation because the amount of tax will follow the size of the company's income or profit level (Handayani, 2014). The size of this level of financial leverage can be calculated by the Degree of Financial Leverage (DFL). DFL shows the extent of changes in EPS caused by specific changes in EBIT (Halim, 2015).

The magnitude of the company's debt level will increase the risk level that the owners of capital will bear. The magnitude of this financial risk will lead to uncertainty of stock returns received by investors, so that it will cause an increase in the level of systematic risk of the company. Yulianto (2010), Alaghi (2011), Prakosa & Haryanto (2012), Utami & Nuzula (2017), and Ramadani et al. (2019) state that there is a positive relationship between financial leverage and systematic risk. Systematic risk is also high when there is an increase in the company's financial leverage. But on the other hand, Ni'mah (2013) found a negative effect between financial leverage and systematic risk, where when the company's financial leverage level is high, the company's systematic risk level will decrease.

Profitability is the next factor to be tested in this study. Profitability (profitability) is a ratio used to measure the company's ability to generate profits at a certain level of sales, assets, and share capital (Hanafi & Halim, 2012). Companies with high returns on investment use little debt. The level of profitability shows the company's ability to profit from the investments made. It is because companies with high profitability tend to use relatively small debt. After all, high retained earnings are sufficient to finance most of their funding needs (Kartika, 2016).

This study uses the Return On Assets (ROA) proxy to see the level of company profitability. ROA is one of the most frequently highlighted because it can show the company's success in generating profits. ROA can measure the company's ability to generate earnings in the past and projected future. The assets in question are the company's total assets, which are obtained from own or foreign capital, which the company has converted into investments that are used for the company's survival. In addition, ROA is also one of the profitability ratios used to measure the company's effectiveness in generating profits by utilizing its total assets.

Profitability can be used as information for shareholders to see the profits received in the form of dividends. Investors use profitability to predict how much change in the value of the shares they own to get the expected return so that the company's systematic risk is minimal. The high value of a company's ROA indicates the more significant the profit earned by the company, the greater the profit will reduce the failure rate that the company will experience. So it can be said that when the ROA value increases, the systematic risk decreases (Annisa and Djoko, 2016).

Al-Qaisi (2011), Laraswati et al. (2018), Januardi & Arfianto (2017), and Biase & D'Apolito (2012) found a negative effect of profitability with systematic stock risk. At the same time, Soeroso (2013), Sarumaha (2017), and Ramadani et al. (2019) state the opposite, where there is a positive influence or direction of company profitability with systematic stock risk.

The next factor tested in this study is the company size. Company size is an improvement because large companies will have large market capitalizations, large book values, and high profits (Dewi and

Wirajaya, 2013). The company size can be measured using total assets, sales, or capital. The larger the total assets, sales, and market capitalization, the larger the company size. These three variables can be used to determine the size of the company because they can represent how big the size is.

In this study, the company size is seen from the total assets owned by the company, which can be used for company operations. The higher the total assets that show the assets owned by the company, it indicates that the company is classified as a large company. And conversely, the lower the total assets suggest, the company is classified as a small company.

Companies that have large total assets indicate that the company has reached a maturity stage. At this stage, the company's cash flow is positive. It is considered to have good prospects for a relatively long time, which causes the company's shares to be attractive to investors so that the share prices will be relatively high. And stable (Kusuma, 2016). It will cause a decrease in the risk level of the shares in the company.

Iqbal & Shah (2010), Gabriel (2012), and Hermawan (2018) state that there is a negative and significant relationship between company size and systematic risk. It shows that, in large companies, the level of systematic risk of shares tends to be smaller. Meanwhile, Handayani (2014), Aji & Prasetiono (2015), Januardi & Afrianto (2017), and Khamidatuzzuhriyah (2020) did not find any significant effect between the size of a company and the systematic risk of shares.

Asset growth is the next factor to be tested in this study. Asset growth is an annual change in the company's total assets (Jogiyanto, 2015). This analysis is used to see the company's total assets from period to period, which reflects the company's growth rate.

The company's growth can be seen from various sides, such as sales, assets, and net income. These three sides use the same basic principle wherein the growth rate is understood as an increase in value in a certain period compared to the previous period (Prasetyo, 2011). Assets that change every period are interesting to study because these changes reflect the company's performance and the decisions management makes in running their business.

High asset growth indicates the company is expanding. The expansion of a large company also requires large amounts of funds, thus enabling the company to obtain funds from outside by increasing the proportion of debt that is getting bigger. It will pose a considerable risk as well. So it can be concluded that the higher the growth rate of the company's assets, the greater the beta value of its shares (Khamidatuzzuhriyah, 2020).

Chandra & Herawati (2013), Caecilia & Cahyadi (2014), and Khamidatuzzuhriyah (2020) found a positive and significant influence on the growth of a company's assets with the systematic risk of its shares. Meanwhile, Aji & Prasetiono (2015), Jazuli & Witiastuti (2016), Hermawan (2018), and Fauziah et al. (2021) found different results which stated that there was a negative and significant effect between company growth and systematic stock risk.

The last factor tested in this study is accounting beta, which is a beta that indicates the level of sensitivity of the company's earnings to market profits. Accounting beta is calculated by regressing company profits with the average earnings of all sample companies (Jogiyanto, 2015).

Accounting beta in this study is calculated by regressing historical data from company accounting profits to estimate the beta value. Similar to market beta, the accounting beta calculation process is identical. However, security returns are replaced by company accounting profits, and market returns are replaced by market profit indexes (Jogiyanto, 2015). The magnitude of the beta level of the company's accounting shows the greater the dependence of the company's profits on market profits so that the risk of the stock is getting bigger. Accounting beta and market beta are both measures of the same risk, so

it is predicted that both have a positive relationship.

Balls. et al. (2021) found a significant effect between accounting beta and systematic risk, while Hermawan (2018) did not find any significant impact between accounting beta and systematic risk.

From the description of the phenomenon above and the inconsistent results from previous studies caused by differences in the object of research and the research period, the researcher is interested in researching "The Effect of Operating Leverage, Financial Leverage, Profitability, Company Size and Asset Growth on Systematic Risk in Manufacturing Companies Listed on the Indonesia Stock Exchange."

Framework

Following the description of the problem background, literature review, and previous research, the conceptual framework for this research is as follows:

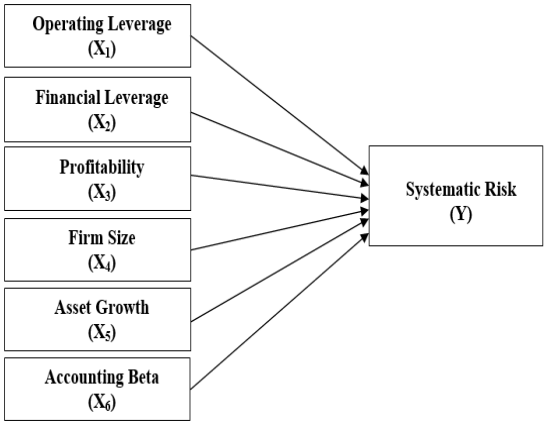

Figure 1. Conceptual Framework

H1: Operating leverage has a positive effect on the systematic risk of stocks

H2: Financial leverage has a positive effect on the systematic risk of stocks

H3: Profitability has a negative effect on the systematic risk of stocks

H4: Company size has a negative effect on the systematic risk of stocks

H5: Asset growth has a positive effect on the systematic risk of stocks

H6: Accounting Beta has a positive effect on the systematic risk of stocks

RESEARCH METHODS

This study uses a causal research design, where causal research is research by identifying causal relationships between various variables (Sugiyono, 2018). This study uses causal research to see the effect of Operating Leverage, Financial Leverage, Profitability, Company Size, and Asset Growth on Systematic Risk in Manufacturing Companies Listed on the Indonesia Stock Exchange.

The population in this study are Manufacturing Companies listed on the IDX. The sampling technique used in this study is saturated sampling, which uses a census where the entire population is sampled. Still, only 127 samples can be taken and used. So the number of observations in this study was 127 x 5 years = 635 data observations.

This research uses secondary data from financial statements and company stock prices obtained from the Indonesia Stock Exchange, accessed through www.idx.co.id. This study used multiple linear regression analysis models with Eviews software.

RESULT AND DISCUSSION

Selection of Regression Model

Three techniques are offered to estimate model parameters using panel data: the Common Effect Model, the Fixed Effect Model, and the Random Effect Model. Then three tests will be carried out to select the technical estimation of panel data: the Chow test, the Hausman test, and the Lagrange multiplier test.

In determining the estimation model between the Common Effect Model (CEM) and the Fixed Effect Model (FEM) in forming the regression, the Chow test was used, with the following test results.

Table 3. Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.076697	(126,502)	0.2891
Cross-section Chi-square	151.899097	126	**0.0579**

Source: Eviews Software Results

The table above shows the probability value of 0.0541. The probability value is 0.0579 >

0.05, so the estimation model in this study is the common effect model (CEM).

Using the Lagrange Multiplier test, the estimation model between the Common Effect Model (CEM) and the Random Effect Model (REM) formed the regression model, with the results in table 4 below.

Table 4. Lagrange Multiplier Test Results

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.130977	Prob. F(2,626)	0.3234
Obs*R-squared	2.286213	Prob. Chi-Square(2)	**0.3188**

Source: Eviews Software Results

The table above shows the probability value of 0.3188. The probability value is 0.3188 > 0.05, so the estimation model in this study is the Common Effect Model (CEM).

Classic Assumption Test

1. Normality test

The normality test in this study was not carried out because the data studied were panel data with many data observations, namely n = 635. The normality test can be ignored in panel data with many data observations (Gujarati, 2004).

2. Multicollinearity Test

Symptoms of multicollinearity can be seen from the correlation value between variables in the correlation matrix. Erlina (2011) states that if there is a reasonably high correlation between independent variables, which is above 0.8, then this is an indication of multicollinearity. The results of the multicollinearity test are presented in Table 5 below.

Table 5. Multicollinearity Test with Correlation Matrix

	X1	X2	X3	X4	X5	X6
X1	1.000000	0.726213	0.643280	0.539096	0.614046	0.527158
X2	0.726213	1.000000	0.699422	0.592129	0.679430	0.588415
X3	0.643280	0.699422	1.000000	0.519002	0.628482	0.773377
X4	0.539096	0.592129	0.519002	1.000000	0.568424	0.564595
X5	0.614046	0.679430	0.628482	0.568424	1.000000	0.531026
X6	0.527158	0.588415	0.773377	0.564595	0.531026	1.000000

Source: Eviews Software Results

The table above shows the correlation value between variables, not more than 0.8. The conclusion is that there is no symptom of multicollinearity between independent variables.

3. Autocorrelation Test

Assumptions regarding the independence of the residuals (non-autocorrelation) can be tested using the Durbin-Watson test. The statistical value of the Durbin-Watson test ranged between 0 and 4. Statistical values of the Durbin-Watson test that were smaller than one or greater than 3 indicated an autocorrelation. The results of the autocorrelation test in this study are shown in the following table.

Table 6. Durbin-Watson test

Log likelihood	-2909.263
F-statistic	20.82466
Hannan-Quinn criter.	9.204142
Durbin-Watson stat	**2.018387**

Source: Eviews Software Results

The table above shows the value of the Durbin-Watson statistic is 2.018387. Since the Durbin-Watson statistic is between 1 and 3, i.e., 1 < 2.018387 < 3, the non-autocorrelation assumption is met. In other words, there is no autocorrelation symptom.

4. Heteroscedasticity Test

A good regression model is one with homoscedasticity or no heteroscedasticity. The Breusch-Pagan-Godfrey test can be used to test whether there is heteroscedasticity or not, as shown in the following table.

Table 7. Breusch-Pagan-Godfrey Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.905886	Prob. F(6,628)	0.0776
Obs*R-squared	**11.35600**	**Prob. Chi-Square(6)**	**0.0780**
Scaled explained SS	56.45902	Prob. Chi-Square(6)	0.0000

Source: Eviews Software Results

The table above showed that the probability value of Obs*R-squared is more than = 5%, which is 0.0780, which means that there is no heteroscedasticity.

Hypothesis Testing

1. Coefficient of Determination Test

The coefficient of determination test (R2) essentially measures how far the model's ability to explain variations in the dependent variable (Ghozali, 2013). The results of the coefficient of determination test are presented in the following table.

Table 8. Coefficient of Determination Test

R-squared	0.165945	Mean dependent var	10.41826
Adjusted R-squared	**0.157976**	S.D. dependent var	25.89613
S.E. of regression	23.76277	Akaike info criterion	9.185080
Sum squared resid	354612.2	Schwarz criterion	9.234175
Log likelihood	-2909.263	Hannan-Quinn criter.	9.204142
F-statistic	20.82466	Durbin-Watson stat	1.980702
Prob(F-statistic)	0.000000		

Source: Eviews Software Results

Based on Table 8, it is known that the coefficient of determination (Adjusted R-squared) is R2 = 0.1580. This value means that operating leverage (X1), financial leverage (X2), profitability (X3), company size (X4), asset growth (X5), and accounting beta (X6) simultaneously or together can affect systematic risk (Y) by 15.80%, the remaining 84.2% is influenced by other factors outside of the variables studied.

2. Simultaneous Test (F Statistics Test)

The F statistical test was conducted to determine whether operating leverage, financial leverage, profitability, company size, asset growth, and accounting beta simultaneously (together) affected systematic risk. The results of the F statistical test are presented in the following table.

Table 9. Simultaneous Test (F Statistics Test)

R-squared	0.165945	Mean dependent var	10.41826
Adjusted R-squared	0.157976	S.D. dependent var	25.89613
S.E. of regression	23.76277	Akaike info criterion	9.185080
Sum squared resid	354612.2	Schwarz criterion	9.234175
Log likelihood	-2909.263	Hannan-Quinn criter.	9.204142
F-statistic	20.82466	Durbin-Watson stat	1.980702
Prob(F-statistic)	**0.000000**		

Source: Eviews Software Results

3. Partial Test (Test Statistical t)

The t-statistical test shows how far one independent variable individually or partially can explain the variation of the dependent variable. The results of the t-statistical test are presented in the following table.

Table 10. **Partial Test (Test Statistical t)**

Method: Pooled Least Squares				
Sample: 2016 2020				
Included observations: 5				
Cross-sections included: 127				
Total pool (balanced) observations: 635				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	**34.27021**	11.85434	2.890942	0.0040
X1	**0.001207**	0.000807	1.495908	**0.1352**
X2	**0.138010**	0.039077	3.531740	**0.0004**
X3	**0.676431**	0.446324	1.515560	**0.1301**
X4	**-0.871145**	0.415878	-2.094712	**0.0366**
X5	**0.030310**	0.010848	2.793994	**0.0054**
X6	**-0.176979**	0.250850	-0.705517	**0.4807**

Source: Eviews Software Results

CONCLUSION

Based on the results of research and discussion, the conclusions are as follows:

Operating leverage partially does not affect the systematic risk of shares in Manufacturing companies listed on the Indonesia Stock Exchange from 2016 to 2020.

Financial leverage has a positive and significant effect on the systematic risk of stocks in Manufacturing companies listed on the Indonesia Stock Exchange from 2016 to 2020.

Profitability partially does not affect the systematic risk of shares in Manufacturing companies listed on the Indonesia Stock Exchange from 2016 to 2020.

Company size partially has a negative and significant effect on the systematic risk of shares in Manufacturing companies listed on the Indonesia Stock Exchange from 2016 to 2020.

The growth of assets partially has a positive and significant effect on the systematic risk of stocks in Manufacturing companies listed on the Indonesia Stock Exchange from 2016 to 2020.

Beta Accounting partially does not affect the systematic risk of shares in Manufacturing companies listed on the Indonesia Stock Exchange from 2016 to 2020.

SUGGESTION

Based on the results of the research, discussion, and conclusions obtained, the suggestions from this research are as follows:

For further research, it can add other factors such as operating efficiency, earning variability, Dividend Payout Ratio, and other factors that may affect the company's stock price. Further researchers can also add years of research and other sectors, such as the Raw Materials Producing Industry Sector or the Service Industry Sector, so comparisons between sectors can be seen.

Companies are expected to maintain various factors that can affect the occurrence of systematic risk in the company.

For investors, it is hoped that the results of this study can be used as a reference in considering the factors that affect the systematic risk of stocks so that they become the basis for making investment decisions.

LIMITATIONS

This study has limitations that can be considered for further research to obtain better results. The following are the limitations of this study:

The contribution of the dependent variable in this study is still too low in influencing stock prices, which is only 15.80%. The remaining 84.2% is influenced by other factors not tested in this study.

Companies analyzed are limited to Manufacturing Sector companies listed as issuers on the Indonesia Stock Exchange as a whole for the 2016-2020 period, so comparisons between sectors cannot be seen.

Acknowledgement: None

Conflict of Interest: None

Source of Funding: None

REFERENCES

1. Aji, R.S., & Prasetiono, P. (2015). Analisis Faktor-Faktor Yang Mempengaruhi Risiko Sistematis (Beta) Saham Pada Perusahaan Manufaktur Yang Terdaftar Di Bursa Efek Indonesia (BEI) Periode 2009-2014. Diponegoro Journal of ManagemenT, Vol. 4, No. 4, 536-550.
2. Alaghi, K. (2011). Financial Leverage And Systematic Risk. African Journal of Business Management, 5 (15), 6648–6650. https://doi.org/10.5897/AJBM11.335.
3. Al-Qaisi, K M. (2011). The Economic Determinants of Systematic Risk in The Jordanian Capital Market. International Journal of Business and Social Science, Vol. 2, No. 20.
4. Ball, R., Sadka, G., & Tseng, A. (2021). Using accounting earnings and aggregate economic indicators to estimate company-level systematic risk. Review of Accounting Studies. https://doi.org/10.1007/s11142-021-09594-9.
5. Bhuva, K. K., Mankad, Y. B., & Bhat, P. B. (2021). Validity of Capital Asset Pricing Model & Stability of Systematic Risk (Beta) of FMCG - A Study on Indian Stock Market. Journal of Management Research and Analysis, Vol. 4, No. 2, 69-73. DOI: 10.18231/2394-2770.2017.0009.
6. Biase, P. d., & D'Apolito, E. (2012). The Determinants of Systematic Risk in the Italian Banking System: A Cross-Sectional Time Series Analysis. International Journal of Economics and Finance, Vol. 4, No. 11. https://doi.org/10.5539/ijef.v4n11p152.
7. Caecilia, C., & Cahyadi, S. (2014). Kajian Empiris Variabel Makroekonomi dan Mikroekonomi Terhadap Beta Saham pada Perusahaan yang Terdaftar di Kompas 100 Periode 2009-2013. Akrual Jurnal Akuntansi, 6 (1), 51–65.
8. Chandra, Y. A., & Herawati, J. (2013). Analisis Variabel yang Mempengaruhi Beta Saham (Studi Pada Perusahaan Yang Terdaftar Di Jakarta Islamic Index Bursa Efek Indonesia). Jurnal Ilmiah Mahasiswa (JIM) FEB UB, 1(2).
9. Darmadji, T., & Fakhruddin, H. M. (2012). Pasar Modal di Indonesia :Pendekatan Tanya Jawab, Edisi Kedua. Jakarta : Penerbit Salemba Empat.
10. Erlina. (2011). Metodologi Penelitian. Medan : USU Press.
11. Fauziah, U. L., Hidayat, R., & Sari, D. A. (2021). Asset Growth, Profitability, And Activity Ratios Predicting The Beta Of Shares Of Manufacturing Companies In

Indonesia. Jurnal Inspirasi Ekonomi, Vol. 3 (1), 12–23.
12. Ghozali, I. (2013). Aplikasi Analisis Multivariate dengan Program IBM SPSS 21 Update PLS Regresi. Semarang: Badan Penerbit Universitas Diponegoro.
13. Gujarati, D. N. (2004). Basic Econometrics, Fourth Edition. New York: The McGraw-Hill Companies.
14. Gumilar, D. (2016). Beta: Tinjauan atas Operating Leverage, Financial Leverage, Company Size, dan Cyclicality (Studi Kasus pada Perusahaan yang Go Publik di Bursa Efek Indonesia). Jurnal Indonesia Membangun.
15. Halim, A. (2015). Manajemen Keuangan Bisnis: Konsep dan Aplikasinya. Jakarta: Mitra Wacana Media.
16. Hanafi, M., & Halim, A. (2012). Analisis Laporan Keuangan (7th ed.). Yogyakarta: UPP AMP YKPN.
17. Handayani, D. W. (2014). Pengaruh Financial Leverage, Likuiditas, Pertumbuhan Asset, dan Ukuran Perusahaan terhadap Beta Saham Pada Perusahaan Manufaktur Yang Terdaftar di Bursa Efek Indonesia. Jurnal Dinamika Akuntansi Dan Bisnis, 1(2), 169–182. https://doi.org/10.24815/jdab.v1i2.3586.
18. Hermawan, H. (2018). Analisis Keuangan Yang Mempengaruhi Beta Saham (Pada Perusahaan Manufaktur Sektor Keramik Porselen dan Kaca yang terdaftar di Bursa Efek Indonesia periode 2010 sampai dengan 2014). Jurnal Disrupsi Bisnis, 1(1), 202–222.
19. Husnan, S. (1998). Dasar Teori Portofolio dan Analisis Investasi. Yogyakarta: BPFE.
20. Irfani, A. S. (2020). Manajemen Keuangan dan Bisnis. Jakarta: Gramedia Pustaka Utama.
21. Januardi, N. V, & Afrianto, E. D. (2017). Pengaruh Likuiditas, Leverage, Efisiensi Operasi, Dividend Payput Ratio, Profitabilitas Dan Ukuran Perusahaan Terhadap Risiko Sistematis Dan Nonsistematis (Studi pada Perusahaan Non-Keuangan Indeks LQ45 Periode 2012-2016). Diponegoro Journal of Management, 6(3), 1–14.
22. Jazuli, A. M., & Witiastuti, R. S. (2016). Determinan Beta Saham Perusahaan Real Estate dan Property di BEI. Management Analysis Journal, Vol. 5 (1), 63–69.
23. Jogiyanto, H.(2015). Teori Portofolio dan Analisis Investasi, Edisi Ketiga. Yogyakarta: BPFE.
24. Kartika, A. (2016), Pengaruh Profitabilitas, Struktur Aset, Pertumbuhan Penjualan Dan Ukuran Perusahaan Terhadap Struktur Modal Perusahaan Manufaktur Di Bursa Efek Indonesia.
25. Keown, A. J., Martin, J. D., Petty, J. W., & Scott, Jr. D. F. (2011). Prinsip dan Penerapan Manajemen Keuangan, Edisi ke-10 Jilid 1. Jakarta: Indeks.
26. Khamidatuzzuhriyah (2020). Determinasi Faktor Yang Mempengaruhi Beta Saham Dengan DER Sebagai Variabel Moderating. Jurnal Ilmiah Wahana Akuntansi, 15(1), 1-14. https://doi.org/10.21009/wahana-akuntansi/15.1.01.
27. Laraswati, D., Yusuf, A., & Amalo, F. (2018). Pengaruh Faktor-Faktor Fundamental (Current Ratio, Return On Asset, Return On Equity, Total Asset Turn Over, Debt To Equity Ratio, Dan Asset Growth) Terhadap Beta Saham Syariah Di Bursa Efek Indonesia. Jurnal Akuntansi (JA) Vol. 5 (2), 14–32.
28. Okiyatum. (2012). Pengaruh Operating Leverage dan Financial Leverage Terhadap Risiko Sistematis Saham Pada Perusahaan Manufaktur di BEI. Skripsi Fakultas Ekonomi Universitas Negeri Yogyakarta.
29. Prakosa, A. B., & Haryanto, M. (2012). Analisis Faktor-Faktor yang Berpengaruh Terhadap Beta Saham Perusahaan (Studi Empiris pada Perusahaan yang Tercatat dalam Indeks Kompas100 di Bursa Efek Indonesia 2007-2010). Diponegoro Journal of Management.
30. Ramadani, S., Mulyati, S., & Icih, I. (2019). Pengaruh Dividen Payout Ratio, Financial Leverage Dan Profitabilitas Terhadap Beta Saham. TSARWATICA (Islamic Economic, Accounting, and Management Journal), 1(01), 29–44. https://doi.org/10.35310/tsarwatica.v1i01.79.
31. Sartono, A. (2015). Manajemen Keuangan Teori dan Aplikasi (4th ed.). Yogyakarta: BPFE-Yogyakarta.
32. Sarumaha, A. (2017). Analisis pengaruh Faktor Ekonomi dan Faktor Fundamental Perusahaan terhadap Beta Saham padandustri Pertambangan yang terdaftar di Bursa Efek Indonesia. Jurnal Ilmiah Widya Ekonomika, Vol. 1, No.2.

33. Shankar, K. U., Ahmad, W., & Kareem, S. A. (2021). Beta Volatility and Its Consequences for Hedging Systematic Risk With Reference To Stock Market During Covid-19. Information Technology in Industry, 9(3), 482–492. http://it-in-industry.org/index.php/itii/article/view/566.
34. Shalini, Witya; Christianty, Restia; Pattinaja, Elna M. 2022. Pengaruh Manajemen Modal Kerja, Likuiditas, dan Leverage Terhadap Profitabilitas Pada Perusahaan Consumer Goods di BEI Periode 2017-2020. Jurnal Owner. 6(2). DOI: 10.33395/owner.v6i2.823
35. Soeroso, A. (2013). Faktor Fundamental (Current Ratio, Total Debt to Equity Ratio, Total Asset Turnover dan Return On Investment) terhadap Risiko Sistematis pada Industri Food and Beverages di Bursa Efek Indonesia. Jurnal Ekonomi, Manajemen, Binis dan Akuntansi, Vol. 1, No. 4.
36. Sutrisno. (2012). Manajemen Keuangan Teori, Konsep dan Aplikasi. Edisi Pertama. Cetakan Kedelapan. Yogyakarta: Ekonisia.
37. Syamsuddin, L. (2011). Manajemen Keuangan Perusahaan: Konsep Aplikasi dalam Perencanaan, Pengawasan, Dan Pengambilan Keputusan, Edisi Baru. Jakarta: Rajawali Pers.
38. Syifa, A. (2013). Pengaruh Leverage Operasi, Leverage Keuangan dan Cyclicality Terhadap Beta Saham Pada Perusahaan Manufaktur Yang Terdaftar di BEI Tahun 2010 dan 2011. *Tesis Binus.* http://thesis.binus.ac.id/doc/RingkasanInd/2012-1-00557AK%20Ringkasan002.pdf.
39. Tekin, B. (2021). Financial Ratios Affecting Systematic Risk In Joint-Stock Companies: Bist Technology (Xutek) Industry Companies Case In Turkey. *Victor Slăvescu" Centre For Financial And Monetary Research. – Issue 1 (91)*, 93-113.
40. Utami, D. A., & Nuzula, N. F. (2017). Analisis Pengaruh Operating Leverage dan Financial Leverage Terhadap Risiko Sistematis Saham (Studi Pada Perusahaan Sektor Keuangan yang Terdaftar di Bursa Efek Indonesia Periode 2012-2015). *Jurnal Administrasi Bisnis, Vol. 50 (2)*, 152–161.

How to cite this article: Pebrina Sabatini Turnip, Iskandar Muda, Rujiman. The effect of operating leverage, financial leverage, profitability, company size, and asset growth on systematic risk in manufacturing companies listed on the Indonesia stock exchange. *International Journal of Research and Review*. 2022; 9(7): 49-59. DOI: *https://doi.org/10.52403/ijrr.20220707*

******