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HOW ASSET GROWTH, EARNINGS VOLATILITY, FIRM SIZE, AND LEVERAGE AFFECT STOCK PRICE VOLATILITY

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ABSTRACT

The purpose of this study is to examine how asset growth, leverage, firm size, and earnings volatility affect stock price volatility. 30 LQ-45 enterprises that had been registered for three consecutive years, from 2018 to 2020, made up the study's sample. In this work, multiple regression analysis is used for hypothesis testing. E-views version 12 is the program used for data processing in this study. According to the study's findings, factors affecting firm size can affect stock price volatility, while factors affecting leverage, earnings volatility, and asset growth cannot.

Keywords: *leverage, firm size, earnings volatility, asset growth, stock price volatility*

1. INTRODUCTION

A profit-oriented activity is business. Of course, everyone engages in commercial operations in order to make a profit and fulfill their basic necessities. When carrying out its operational activities, the company needs a certain amount of funds. The funds are obtained by the company from the company's own capital and also from the issuance of securities in the capital market. Stocks are included in one type of investment and are classified as having high risk due to both external and internal factors of the company that can affect stock prices

According to Mariana (2022), In the period the researchers chose, the company was in the middle of the Covid-19 virus pandemic era. Covid-19 is primarily a public health issue that has had a significant effect on the world's financial markets. Ever since the coronavirus epidemic first appeared in the Chinese city of Wuhan in December 2019, it has become a global issue. Due to this epidemic, the market has experienced unexpected price movements, including the quick collapse of the stock market and the increase in early 2020 that resulted in extreme volatility. The Indonesia Stock Exchange (IDX) stated that all exchanges in the world experienced a significant decline in security prices during the pandemic. But apart from the external effects of this pandemic, the company's performance will certainly affect the stock prices listed on the stock exchange. The stock price reflects the value of the company in question. Investors have the right to decide whether to choose securities with low or high risk from a company which of course will affect their profits or returns on investment. Investors, of course, have also done calculations and judged that it is better if they invest in companies that have high share prices than those with lower ones. This is because companies with high stock prices are considered to be able to survive for the long term and have good business prospects.

LQ 45 consists of 45 companies that meet the IDX criteria as companies with the highest level of stock liquidity. Companies in LQ 45 have stock values that are ranked at the top based on market capitalization for the last 12 months. However, the company still has the possibility that the company's stock price experiences volatile movements. Certain criteria must be met by every company that wants to be included in the LQ 45 list, including financial condition and business prospects having a fairly high assessment. Companies that have been registered in LQ

45 are considered to have more value because they show good performance and become attractive to investors. However, the company listed on LQ 45 does not always remain in the same position due to the company's external and internal factors that greatly affect its share price.

Price volatility and market overreaction are closely associated because abrupt price movements, particularly during times of crisis, have the potential to increase volatility and overreaction in the financial markets. Investment risk increases when stock price volatility increases. To reduce uncertainty to get a return, investors need information about the volatility or movement of the company's stock price.

One of the factors that influence the rise and fall of stock prices is leverage (LEV), which shows the level of debt of a company. Companies with higher leverage ratios tend to experience large share price declines during weak markets due to the potential inability of the company to make interest and loan payments (Mobarak and Mahfud, 2017).

Another indicator that can be used is firm size (FS). Firm size is a scale that is a measure of the size of the company judged by the number of assets, total sales, and the average level of sales of the company. Large companies generally have good management in their business and generate large profits with minimal risk (Azura et al., 2018).

Apart from these two factors, earnings volatility and asset growth also affect the ups and downs of stock prices. The description of the ups and downs of profits that the company managed to get in a certain period of time is referred to as earnings volatility. If the company's income level is not stable, then the volatility of the stock price is also high. While asset growth is an increase in the income of a company that is higher than other companies to carry out its company activities.

Based on the above description, this study attempts to answer: Does leverage affect stock price volatility in companies listed on LQ 45 in 2018-2020? Does a company's size affect the volatility of its stock price in LQ 45 companies between 2018 and 2020? Does the volatility of earnings in 2018–2020 affect the volatility of stock prices in the firms listed on LQ 45? Does the volatility of stock prices in businesses listed on LQ 45 between 2018 and 2020 depend on asset growth?

Our Contribution

Numerous parties, including academic and practical benefits, are anticipated to gain from the study's findings. The findings of this study are anticipated to broaden researchers' horizons in relation to research materials on the variables that influence the volatility of a company's stock price at LQ 45, where the variables in question in this case are the company's characteristics before and during the Covid-19 outbreak. The findings of this study are anticipated to be used by academics as a source of reference or as references for academics who will conduct more research that relates to the factors associated to the issues covered in this study. Practical benefits from this research include the potential to inform investors active in Indonesia's capital market about the variables that affect a company's characteristics as the Covid-19 outbreak spreads, allowing investors to ultimately take this research into account when making investment decisions in the future.

Paper Structure

The papers are arranged as follows; Section 1 introduces and explains this paper's contribution. Section 2 introduces the preliminaries used in this paper, such as theories and research hypotheses. Section 3 presents the methods and proxy used in this research. Section 4 presents the results & discussions of the research. Finally, Section 5 concludes the research and presents directions for future researchers.

2. THEORETICAL REVIEW

Signalling Theory

Signaling Theory was first presented by Spence (1973), which discusses the sending party as the owner of the information trying to provide relevant information, such as the company's condition to be used by investors as the receiving party. Then, the recipient will use the signal or information obtained as a response related to investment decisions against the company.

Furthermore, Brigham and Houton (2016) stated that this indication Theory refers to a message sent to investors by a company's management outlining its future potential. It is believed that the signal provided is a crucial indicator for investors as recipients of information in responding to investment decisions for the company. In theory, this signal can also take the form of information about the efforts made by management to be able to realize the interests of the owner.

So based on some of the opinions above that have been put forward by experts, it can be concluded that signaling theory explains how company management as a provider of information will provide information in the form of a signal to investors or shareholders, which later this information will be received to be used as a benchmark for signal recipients. (investor) to decide on the investment to be made. The information provided by management can be provided in the form of the company's financial statements, either in the form of good results or bad results in the reporting. If a report indicates good company performance, this can be a signal or sign received by investors to invest in the company, and vice versa. If the reporting provided by management is terrible, it can signal investors to reconsider their decision to invest in a company.

Efficient Market Hypothesis Theory

Efficient Market Hypothesis (EMH) or market efficiency is a hypothesis that shows that the price of an asset describes all the information in it. This information includes things that are already known to the general public and the information is relevant to be taken into consideration in making decisions regarding share prices and the fluctuations in share prices. The volatility of the share price includes all the latest available information provided by the company. The more match the stock price with market information, the market conditions related to the volatility of the stock price will be formed perfectly because it presents the latest data.

The Efficient Market Hypothesis (EMH), which asserts that the price produced in the market is the outcome of a reflection of all available information, was first proposed by Fama (1970) in Rachman and Ervina (2017). With the help of empirical data, Fama (1970), Rahman and Ervina (2017) modified the EMH idea and divided market efficiency into three types, namely:

1. The Weak Efficient Market Hypothesis
2. The Semi-Strong Efficient Market Hypothesis
3. The Strong Efficient Market Hypothesis

Stock Price Volatility

Stock price volatility is a measure of uncertainty about the returns to stock. Companies that are actively traded in the stock market will increase the volatility of stock prices. Volatility is called "market mood" and determines whether the price will go up or down (volatility range). If there is a rapid increase or decrease, this indicates that high volatility is occurring. According to Santioso and Angesti (2019), stock price volatility is a condition where the stock price deviates from the average (up/down) index.

Leverage

Leverage indicates the source of the company's capital (Fahmi, 2015). Leverage gauges a company's capacity to pay down some or all of its current and future debts. As a result, the company may be at danger due to its amount of leverage, particularly if it faces the possibility of going bankrupt in the future. Leverage and the company's finance selection strategy are closely tied. Leveraging financial statement data, particularly for investors, can reveal specific firm signals to the public. According to Mobarak and Mahfud (2017), leverage has a significant positive effect on stock price volatility. These results suggest that increasing the amount of debt a firm takes on can raise the amount of risk the organization is willing to take. Investors have learned that using more debt financing tends to make it more likely that the company would experience future financial troubles. As a result, the capital market's stock price volatility may reflect this condition.

$Ha1$: Leverage (LEV) has a significant and positive effect on the company's Stock Price Volatility (VOLD).

Firm Size

Large companies have a small imbalance of information so that information can be clearly absorbed and analyzed by investors. Large company assets will be seen by investors as a form of the company's level of stability which has an impact on the stability of stock prices. On the other hand, small companies tend to be considered less well-established by investors, so investors are not too confident in investing in the shares of small companies. The volatility of stock prices on the capital market is impacted by this circumstance. The company's financial statements provide information about the scale of the business, which makes the market's reaction to the information directly tied to the semi-strong efficient market theory. The size of the company is considered to have a more stable policy in determining the company's future. Therefore, investors who know company size information from financial statements feel more confident to invest in companies that tend to be large. The decision was taken with the hope that investors need a definite rate of return with less risk.

$Ha2$: Firm Size (FS) has a significant and negative effect on the company's Stock Price Volatility (VOLD).

Earnings Volatility

Earnings volatility is a representation of the peaks and valleys in the company's profits over a specific time-period (Rowena & Hendra, 2017). Investors are alerted that a company is high risk to invest in if its income levels are inconsistent. Investors will sell the company's shares in a short amount of time as a result of the company's warning about the company's profit stability. Companies with significant levels of earnings volatility frequently represent their achievements as having fluctuating profitability, which has an impact on stock prices.

$Ha3$: Earnings Volatility (EVOL) has a significant and positive effect on the company's Stock Price Volatility (VOLD).

Asset Growth

Because the majority of the earnings from the company's profits are utilized to finance projects with a positive net present value, businesses in the development stage have little free cash flow. Managers of growing businesses prefer to invest after-tax profits and anticipate better results in the expansion of total assets. Companies that are still in the early stages of development will typically invest their profits rather than distribute them to shareholders. Investors can interpret this information as a hint that the company has high future certainty, nevertheless. According to [8], that asset expansion reduces the volatility of stock prices. The rate of asset growth may be correlated with a company's perspectivity. Production operations will undoubtedly be carried out more effectively by businesses with significant asset growth. The level of operating results of a corporation increases with asset size. Investor trust in a company's future prospects will grow as its assets and operating results both grow. The longer an investor holds onto shares before selling them, the more confident they are in the company. The response of investors can be seen in more consistently high stock prices.

$Ha4$: Asset Growth (AG) has a significant and negative effect on the company's Stock Price Volatility (VOLD).

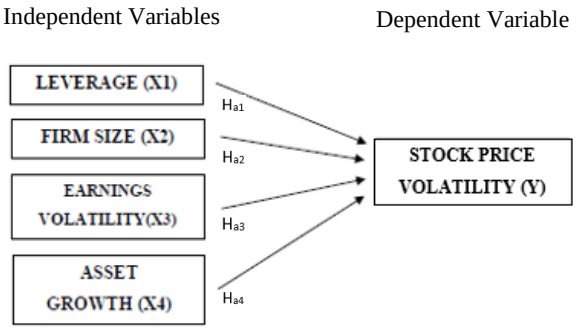

Figure 1. Research Model

3. METHODS

In this study, the population studied by the author are companies listed on LQ 45 based on the criteria of the Indonesia Stock Exchange from 2018 to 2020. The sample studied this time was 30 respondents from companies that meet the criteria. This sampling selection technique is purposive sampling. This study's research design is descriptive. The stock price volatility

(VOLD) of the corporation is the dependent variable in this study. LEV, FS, EVOL, and AG are also included in this study as independent variables. Several criteria were used in this investigation. Companies listed on LQ 45 in accordance with IDX criteria, companies listed there for 3 consecutive years from 2018 to 2020, companies not listed on LQ-45 for 3 consecutive years from 2018 to 2020, and companies whose shares are actively traded on the Indonesia Stock Exchange make up the sample criteria used in this study.

There are various methods or ways to determine stock price volatility, but this study uses a comparison between the highest stock price and the lowest stock price in that year. According to Hashemijoo et al., stock price volatility can be calculated using the following formula:

$$Stock\ Price\ Volatility\ = \left[\frac{Hi-Li}{Hi+Li}\right] : 2$$

Leverage, or how much debt a company uses to finance its operations rather than using its own capital, is a measurement of how much of a company's assets are financed by debt (Kasmir, 2017). In this study, based on Kasmir's Book (2012:156-162), leverage can be calculated using the formula:

$$Leverage = \frac{Total\ debt}{Total\ Equity}\ x\ 100\%$$

According to Patriadjati (2017), a company's size can be determined by looking at its entire assets or sales. This scale is called "Firm Size". Firm size can be calculated using the formula:

Firm Size = (LnTotalAsset)

Earnings volatility is an illustration of the ups and downs of profits achieved by the company within a certain period of time (Rowena & Hendra, 2017). In this study the measurement of earnings volatility using according to Bradley et al., (1984) using the formula:

$$EVOL = STD\frac{Earning\ Before\ Interest\ and\ Tax}{Total\ Assets}$$

Asset Growth is a measure of how effectively a corporation utilizes capital sources (Patriadjati 2017). The expansion or contraction of the company's overall asset base each year affects the growth of the company's assets. The algorithm can be used to determine asset growth:

$$Asset\ Growth = \frac{\text{Total Aset (t) - Total Aset (t -1)}}{\text{Total Aset}}$$

4. RESULTS AND DISCUSSION

Test of Descriptive Statistics

Stock price volatility (VOLD), the dependent variable, has a minimum value of 0.224 and a maximum value of 1.407. Unilever Indonesia Tbk. has the lowest value of 0.224 in 2019, while Aneka Tambang (Persero) Tbk. has the highest value of 1,407 in 2020. Furthermore, this dependent variable has a mean (average) value of 0.604 and a standard deviation (SD) of 0.263274.

The first independent variable is Leverage (LEV), which has a minimum value of 0.145 owned by Vale Indonesia Tbk in 2020 and a maximum value of 16,079 owned by State Savings Bank (Persero) Tbk in 2020. The leverage variable is also worth 16,079. The mean (average) value is 2.0126, and the standard deviation (SD) is 2.68823.

The second independent variable is Firm Size (FS), which has a minimum value of 29,517 in 2018, owned by Surya Citra Media Tbk., and a maximum value of 34,952 in 2020 held by Bank Rakyat Indonesia (Persero) Tbk. The mean (average) value of the firm size variable is 31.9867, and the standard deviation (Std. Deviation) is 1.379445.

Earnings Volatility (EVOL) is the third independent variable to consider. Bank Central Asia Tbk. (2019), Bank Negara Indonesia (Persero) Tbk. (2018), Bank Rakyat Indonesia (Persero) Tbk. (2018), and Bank Mandiri (Persero) Tbk. (2019) all own EVOL. In 2020, the firm H.M. Sampoerna Tbk. will have a maximum worth of 0.095. The mean value of variable earnings volatility is 0.019278, with a standard deviation (Std. Deviation) of 0.021896.

Asset Growth (AG) is the final independent variable. In 2020, the company Indo Tambangraya Megah Tbk. has a minimal asset growth value of -0.196. Indofood CBP Sukses Makmur Tbk. had the highest value of 1,676 in 2018. The mean (average) value of the asset growth variable is 0.114133, and the standard deviation (Std. Deviation) is 0.267766.

Table 1. Test of Descriptive Statistics

Date: 09/22/22 Time: 23:11
Sample: 2018 2020

	VOLD	LEV	FS	EVOL	AG
Mean	0.604000	2.012622	31.98670	0.019278	0.115133
Median	0.576000	0.916500	31.80600	0.010000	0.074500
Maximum	1.407000	16.07900	34.95200	0.095000	1.676000
Minimum	0.224000	0.145000	29.51700	0.000000	-0.196000
Std. Dev.	0.263274	2.688229	1.379445	0.021896	0.267766
Skewness	0.751282	2.743586	0.626146	1.569397	4.592118
Kurtosis	3.186229	12.13297	2.624122	4.777292	26.66791
Jarque-Bera	8.596418	425.7009	6.410697	48.79051	2416.951
Probability	0.013593	0.000000	0.040545	0.000000	0.000000
Sum	54.36000	181.1360	2878.803	1.735000	10.36200
Sum Sq. Dev.	6.168858	643.1653	169.3552	0.042668	6.381186
Observations	90	90	90	90	90

Source: EViews Output

Normality Test

The normality test was conducted to determine whether the dependent variable and the independent variable were normally distributed or not (Ghozali, 2016). The normality test used in this study is the Jarque-Bera (JB) test. The significance value used is 5% or 0.05. If the probability is less than 0.05, it means that the research data is not normally distributed and vice versa. The results of the normality test are presented in table 2 below:

Table 2. Normality Test

Component	*Jarque-Bera Probability*
1	4.489239

Source: EViews Output

Based on the results of the normality test shown in Table 2 above, it can be seen that the Jarque-Bera Probability value is 4.489239, which means it is greater than 0.05. This means that H0 failed to be rejected so it can be concluded that the residual data is normally distributed.

Multicollinearity Test

The multicollinearity test was conducted to test whether the research regression model found a high correlation between the independent variables used. This test is done by looking at the correlation value between the independent variables in the study.

Table 3. Multicollinearity Test

	LEV	FS	EVOL	AG
LV	1	0,619037	-0,290220	0,013941
FS	0.619037	1	-0,369702	0,096772
EVOL	-0.290220	-0,369702	1	0,175138
AG	0.013941	0.096772	0,175138	1

Source: EViews Output

The correlation value between the independent variables of leverage (LEV), firm size (FS), earnings volatility (EVOL), and asset growth (AG) is less than 0.850, based on the results of the multicollinearity test provided in table 3 above. This means that H0 is accepted, and there are no signs of multicollinearity in the regression model used in the study. It is possible to conclude that there is no meaningful relationship between independent variables.

Heteroscedasticity Test

A decent regression model is one that does not have heteroscedasticity issues, which means that the variance value of the residuals is stable or constant, which is known as homoscedasticity. The Glejser test was employed in this work to assess heteroscedasticity.

Table 4. Heteroscedasticity Test

F-statistic	0.903069	*Prob. F (14,75)*	0.5590
*Obs*R-squred*	12.98298	*Prob. Chi-Square (14)*	0.5279
Scaled Explained SS	15.93042	*Prob. Chi-Square (14)*	0.3176

Source: EViews Output

Based on the results of the heteroscedasticity test above (Table 4), it can be seen that all variables have Prob. Chi-Square is 0.5279 where this value is greater than 0.05 (0.5279 > 0.05) so it can be said that all variables in this study do not have heteroscedasticity symptoms or are free from heteroscedasticity.

Chow Test

Table 5. Chow Test

Effect Test	*Statistic*	*d.f.*	*Prob.*
Cross-section F	1.700710	(29,56)	0,0443
Cross-section Chi-square	56.849156	29	0,0015

Source: EViews Output

The Chow test is a strategy for determining the best panel data model. The cross-section F value is 0.0443, which means it is less than 0.05, based on the results of the Chow test reported in table 5 above. This means that H0 is rejected and H1 is accepted, implying that the Fixed Effect Model (FEM) is the more appropriate panel data regression model to utilize. The Hausman test is used to continue the test.

Hausman Test

Table 6. Hausman Test

Test Summary	*Chi-Sq. Statistic*	*Chi-Sq. d.f.*	*Prob.*
Cross-section random	9.632567	4	0,0471

Source: EViews Output

According to the Hausman test results, the random cross-section value is 0.0471, which is less than 0.05. This means that H0 is rejected and H1 is accepted, implying that the Fixed Effect Model (FEM) is the more appropriate panel data regression model to utilize.

Multiple Regression Analysis

Multiple regression analysis was performed to determine whether there is an effect between the independent variable (the independent variable) and the dependent variable (the dependent variable), specifically the effect of leverage, firm size, earnings volatility, and asset growth on stock price volatility in the data of companies listed in LQ-45 from 2018 to 2020. Where, the significance level used in this study is 5% ($\alpha = 5\%$). This equation is applied to leverage (LEV), firm size (FS), earnings volatility (EVOL), and asset growth (AG) to the company's stock price volatility variable. The multiple regression equation model that can be obtained is as follows:

$$VOLD = 2.911879 + 0.017078\ LEV - 0.072882\ FS + 0.546026\ EVOL - 0.186976\ AG + e$$

Discussion

Leverage (LEV) has a probability value of 0.1763 which means it is greater than 0.05. This means that H1 is not accepted so that it can be interpreted that leverage has no effect on firm value. The company size regression coefficient is 0.017078, indicating a positive influence. It is possible to conclude that leverage has no positive influence on stock price volatility. Debt is one type of externally funded capital that businesses can use. By issuing debt, the company's capital needs are fulfilled and can reduce corporate tax spending. However, it should be noted that excessive use of debt can also make the value of the company decline due to unhealthy financial conditions. Therefore, company management needs to regulate how much debt is used to finance the company's capital so that the company's value is maintained. The results of this study are consistent with research conducted by Surahmat et al. (2017) where leverage does not have a positive effect on stock price volatility. On the other hand, the results of the study contradict the results of research conducted by Selpiana and Badjra (2018) which proves that there is a positive effect of leverage on stock price volatility. The study states that companies prefer to use debt to manage company activities in generating profits.

Firm Size (FS) has a probability value of 0.0053 which means it is smaller than 0.05. This means that H2 is accepted so that it can be interpreted that firm size has an influence on stock price volatility. The regression coefficient for business size is -0.072882, indicating a negative

influence. It is possible to conclude that the size of a company has a negative impact on stock price volatility. Stock price volatility is negatively influenced by firm size. Most investors make investments in a firm based on its size. The entire value of a company's assets serves as a proxy for its size. This demonstrates that large, well-established organizations will have a plenty of capital to finance their investments in order to increase earnings. The findings of this study are congruent with the findings of Andiani et al. (2018), who found that firm size had a negative effect on stock price volatility. This is because the size of a firm influences whether or not investors would invest in it. In the eyes of investors, the size of the company, as measured by Ln total assets, has a substantial impact on stock price swings. The findings of this study are consistent with those of Marini et al. (2019) and Oktavianti et al. (2020), who found that it influences stock price volatility simultaneously. According to these studies, firm size has a detrimental impact on stock price volatility.

Earnings volatility has no positive influence on stock price volatility. The higher a firm's earnings volatility, the less interested investors are in investing in the company because the company has fluctuating income and is easily influenced by many circumstances. With high profits volatility, the company is less able to sustain its market position and less able to generate stable and consistent income. This is congruent with prior research by Surahmat et al. (2017). According to the study, earnings volatility has little effect on stock price volatility. However, the findings of this study contradict those of Mobarak and Mahfud (2017). According to the research, earnings volatility has a beneficial impact on stock price volatility. This is because companies with fluctuating income levels will damage investor confidence in the company and, as a result, the share price of the company in question.

Stock price volatility is unaffected by asset growth. The quick expansion of assets suggests that the company's performance is stable. The information is purportedly exploited by shareholders in order for shareholders to wait for the evolution of the information, resulting in shareholders keeping their shares. The rapid growth of a company's assets is closely tied to a decrease in the volatility of its stock price. This is consistent with the findings of Mustika's (2018) research, which shows that asset expansion has a favorable effect on stock price volatility. This is contrary to the results of research conducted by Rowena and Hendra (2017) and research conducted by Santioso and Angesti (2019) found that asset growth has no effect on stock price volatility. Based on the results of this study, it is said that with the growth of assets, volatility in stock prices still occurs because companies that have high asset growth rates are most likely accompanied by high levels of debt to increase these assets.

5. CONCLUSION

The purpose of this study was to determine the impact of leverage, firm size, earnings volatility, and asset growth on stock price volatility. This study's sample consists of LQ-45 enterprises that have been registered for three consecutive years from 2018 to 2020, for a total of 90 companies. According to the findings of this study, the leverage variable has no positive effect on stock price volatility, with a value of 0.1763. With a value of 0.0053, firm size has a negative effect on stock price volatility. With a value of 0.6834, earnings volatility has no positive effect on stock price volatility. The higher a firm's earnings volatility, the less interested investors are in investing in the company because the company has fluctuating income and is easily influenced by many circumstances. With a value of 0.0691, asset growth has no negative effect on stock price volatility. The quick expansion of assets suggests that the company's performance is stable.

The study sought to determine the impact of leverage, business size, earnings volatility, and asset growth on stock price volatility. After completing research utilizing many tests to examine these variables, it can be stated that company size variables can influence stock price volatility but not leverage, earnings volatility, or asset growth variables.

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