3. THE IMPACT OF THE FUNDAMENTAL RATIOS ON THE STOCK PRICE OF TRANSPORTATION COMPANIES LISTED ON THE CAPITAL MARKET OF INDONESIA

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THE IMPACT OF THE FUNDAMENTAL RATIOS ON THE STOCK PRICE OF TRANSPORTATION COMPANIES LISTED ON THE CAPITAL MARKET OF INDONESIA

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ABSTRACT

The fundamental ratios are helpful for investors to evaluate the companies listed on the capital market by considering the stock price movement. Based on these pieces of information, investors can decide to select and transact the stocks owned by the companies in the attractive industry. In Indonesia, one of the company groups intended is transportation. The circumstance happens because of the needs of people in the mode of transport taking place in the fourth position.

The destination of this study is to examine and analyze the impact of the fundamental ratios derived from the dividend discount model on the stock price of companies in the transportation industry between 2014 and 2017. Furthermore, the Slovin formula with a 10% margin of error gets utilized to count the samples. After their number becomes known, we employ the simple random sampling method to pick the firms as the sample. As a way to analyze the data, we use the multiple regression model by pooling data.

This research concludes that the fundamental ratios from the dividend discount model affecting the stock price are profitability, dividend policy, and book value per share. The positive effect of profitability and book value per share on stock price occurs. On the other hand, the negative impact of dividend policy happens.

Keywords: book value per share, dividend policy, profitability, the stock price

INTRODUCTION

Nowadays, transportation services in Indonesia have become the fourth basic need of people, after food, clothing, and house. This situation indicates that many people want their economic activities to operate smoothly in both the same and different regions (Utomo, 2017). To make them or goods move, furthermore, the various paths of transportation, including their infrastructures, need to be available (Kartiasih, 2019), like the ocean, river (Kusnoto & Purmintasari, 2018), roadway, railway, and air (Dwiatmoko, 2019). Hence, the transportation industry is still attractive and productive for companies to run.

In the capital market of Indonesia, the snowballing number of existing transportation companies from 2014 until 2017 becomes proof of this industry's attractiveness (see Table 1). In this table, the total companies in 2015 and 2016 were the same, i.e., 32. In the years 2016 and 2017, the totals were 33 and 34, respectively. This change happened because of: (1) the companies offering their stocks for the first time, (2) the delisted companies, and (3) the companies moving their business from the transportation to another sector:

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- The name of the company going public in 2016 was Sillo Maritime Perdana Tbk (SHIP). Meanwhile, the four companies in 2017 were Nusantara Pelabuhan Handal Tbk. (PORT), Pelayaran Tamarin Samudra Tbk. (TAMU), Pelita Samudra Shipping Tbk. (PSSI), and Jasa Armada Indonesia Tbk. (ICPM).
- The delisted company in 2017 was Citra Maharlika Nusantara Corpora (CPGT).
- The companies moving their business to another sector to toll road, airport, harbor, and allied products in 2017 were Cardig Aero Services (CASS) and ICTSI Jasa Prima (KARW).

Table 1. The situation in the transportation industry in the Indonesia capital market from 2014 to 2017

Year	2014	2015	2016	2017
Total companies initially offering their stocks to the public	-	-	1	4
Total delisted companies	-	-	-	1
Total companies moving from transportation to another business sector: toll road, airport, harbor, and allied products				2
Total existing companies at the end of the year	32	32	33	34

Source: The observation result from IDX Fact Books 2015, 2016, 2017, 2018

As the productive sector, this industry can still return for the investors in the capital market (Husnan, 2015): a capital gain or a dividend (Sunariyah, 2011; Hartono, 2017). According to Natarsyah (2000), these vital ratios influencing stock return can get derived from the dividend discount model. They are profitability, dividend policy, book value per share, leverage. At least one of these ratios becomes the focus for the other scholars when investigating the factor affecting the stock price, as visualized in Table 2.

Table 2. The result of the effect of the fundamental ratios on stock price based on the previous research evidence

The name of the scholar	The result of the effect of the fundamental ratios			
	Profitability	Dividend policy	Leverage	Book value per share
Natarsyah (2000)	Positive	Not significant	Positive	Positive
Subiyantoro & Andreani (2003)	Insignificant and positive[i]	n.a.	Not significant	Positive
Gunarso (2014)	Positive	n.a.	Not significant	n.a.
Pranata & Pujiati (2015)	Positive	Negative	n.a.	n.a.
Sharif, Ali, & Jan (2015)	Negative and positive[ii]	Positive and insignificant[2]	n.a.	n.a.
Ariyanti, Topowijono, &	Insignificant	n.a.	Not	n.a.

[i] Subiyantoro & Andreani (2003) discover no effect when profitability stands calculated by return on assets. When utilizing return on equity to measure profitability, they get a positive influence.

[ii] In their research, Sharif et al. (2015) find a positive effect when profitability gets measured by earnings per share, but a negative when it gets measured by return on equity. Besides, they locate a positive influence when they perform the dividend payout ratio as the proxy of dividend policy. Meanwhile, when they utilize dividend per share, it results in a meaningless effect.

Table 2. The result of the effect of the fundamental ratios on stock price based on the previous research evidence

The name of the scholar	The result of the effect of the fundamental ratios			
	Profitability	Dividend policy	Leverage	Book value per share
Sulasmiyati (2016)	and positive[iii]		significant	
Oliveira & Henrique (2016)	Positive	n.a.	n.a.	Positive
Avdalović & Milenković (2017)	Negative, positive, and insignificant[iv]	n.a.	Positive	Positive
Budagaga (2017)	n.a.	Positive	n.a.	Positive
Farrukh, Irshad, Khakwani, Ishaque, & Ansari (2017)	n.a.	Positive	n.a.	n.a.
Warrad (2017)	Insignificant	Negative and positive[v]	n.a.	n.a.
Ouso & Mutava (2018)	n.a.	n.a.	Negative	n.a.
Osakwe, Ezeabasili, & Chukwunulu (2019)	Positive	Positive and insignificant[vi]	n.a.	n.a.
Akhmadi, Nurohman, & Robiyanto (2020)	Positive	Positive	Negative	n.a.

Notes: n.a. = not available = the fundamental ratio does not exist in the research model

By considering these various effects excepting for book value per share, mentioned in Table 2, this study wants to prove the impact of the fundamental ratios derived from the dividend discount model, i.e., profitability, dividend policy, book value per share, and leverage, on the stock price of the companies in the transportation industry in the capital market of Indonesia.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Profitability and stock price

Profitability shows the capability of the company to generate earnings (Gitman & Zutter, 2012). By having them, the company can continue its business without economic failure (Purwaningsih, 2008). This situation will induce the investors to buy the stocks; therefore, it gets expected that if the profitability of the company increases, the stock price will rise, as shown by Natarsyah (2000), Pranata & Pujiati (2015), Sharif et al. (2015), Oliveira & Henrique (2016), Avdalović & Milenković (2017), Osakwe et al. (2019), Akhmadi et al. (2020). By indicating these enlightenments, we propose the first hypothesis in this fashion.

H_1: Profitability positively affects the stock price.

[iii] In their study, Ariyanti et al. (2016) demonstrate that the positive impact when the profitability gets counted by earnings per share, but the insignificant effect when it gets measured by return on equity.

[iv] In their investigation, Avdalović & Milenković (2017) prove a negative effect when profitability gets measured by earnings per share. On the contrary, a positive impact transpires when it gets measured by return on assets. Meaningless influence occurs when it gets measured by return on equity.

[v] In her research, Warrad (2017) confirms a negative impact when dividend policy gets counted by dividend yield and a positive one when it gets counted by dividend per share.

[vi] In their study, Oskawe et al. (2019) affirm a positive influence when dividend policy gets quantified by dividend payout ratio and a meaningless one when it gets quantified by dividend yields.

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Dividend policy and stock price

Paying dividends does not always get a positive reaction from the market. Investors will assume that the firms with this decision will delay realizing the promising investment projects (Brealey, Myers, & Allen, 2020). Therefore, it brings the perception declaring that the more dividends paid, the lower the stock price of the executing company, as revealed by the study of Pranata & Pujiati (2015) and Warrad (2017). By denoting these enlightenments, we propose the second hypothesis in this fashion.

H_2: Dividend policy negatively affects the stock price.

Leverage and stock price

Leverage stands always associated with the usage of debt by the company (Sartono, 2008). According to Brealey et al. (2020), the existing debt will increase the risk of bankruptcy if the firms cannot pay the bank interests and principles. If this happens, the investors will sell the stock of the firms under this situation. Hence, it brings the tendency of decreasing their stock price, as the study of Ouso & Mutava (2018) and Akhmadi et al. (2020) demonstrate. By referring to these enlightenments, we propose the third hypothesis in this fashion.

H_3: Leverage negatively affects the stock price.

Book value per share and stock price

Book value per share displays the assurance of privilege on net assets for the shareholders. Furthermore, they will be ready to pay the stocks for the high price if this value enhances (Natarsyah, 2000). This explanation gets support from the study result of Natarsyah (2000), Subiyantoro & Andreani (2003), Oliveira & Henrique (2016), Avdalović & Milenković (2017), Budagaga (2017) declaring a positive impact of book value per share on the stock price. By mentioning these enlightenments, we propose the fourth hypothesis in this fashion.

H_4: Book value per share positively affects the stock price.

RESEARCH METHOD

Operationalization of the investigated variables

Two kinds of variables are present, i.e., dependent and independent. The stock price performs as the dependent, whereas profitability, dividend policy, leverage, and book value per share act independently. The measurement of these variables can get acquired in Table 3.

- The measurement of the closing stock price in this study follows the research of all the scholars in Table 2.
- The use of return on assets in this study as the proxy of the profitability remarks the study of Natarsyah (2000), Pranata & Pujiati (2015), Avdalović & Milenković (2017), as well as Akhmadi et al. (2020).
- The utilization of dividend payout ratio as the proxy of dividend policy denotes the study of Natarsyah (2000), Pranata & Pujiati (2015), Sharif et al. (2015), as well as Osakwe et al. (2019).
- The application of the debt to equity ratio to measure debt policy in this study tracks the research of Natarsyah (2000), Subiyantoro & Andreani (2003), Ariyanti et al. (2016), as well as Akhmadi et al. (2020).
- The usage of the ratio of the book value of equity to the number of outstanding common stock shares as the proxy of book value per share in this study trails the

investigation of Natarsyah (2000), Subiyantoro & Andreani (2003), Oliveira & Henrique (2016), Avdalović & Milenković (2017), as well as Budagaga (2017).

Table 3. The operationalization of the investigated variables

Variable	The measurement of the variables	Scale
The stock price	The closing price of the stock owned by the company at the end of the year	Ratio
Profitability	The return on assets (ROA) of the company at the end of the year	Ratio
Dividend policy	The dividend payout ratio (DPR) of the company at the end of the year	Ratio
Leverage	The debt to equity ratio (DER) of the company at the end of the year	Ratio
Book value per share	The ratio getting from the equity book value divided by the number of outstanding shares owned by the common stockholders (BVS) of the company at the end of the year	Ratio

Population and Samples

The transportation companies listed on the Indonesian capital market from 2014 until 2017 become the research population. Based on this situation, the consistent number of companies is essential to determine the total population (N). After counting the number, we obtain 28. To calculate the number of samples (n), we apply the Slovin formula by utilizing the margin of error (e) of 10% in the first equation.

$$n = \frac{N}{1+Ne^2} \quad \ldots\ldots (1)$$

By this formula, the total companies becoming the samples are $\frac{28}{1+28(10\%)(10\%)} = \frac{28}{1.28} = 21.875 \approx 22$. To take 22 from 28 companies, we use a simple random sampling method. After doing that, we acquire the name of the companies displayed in Table 4.

Table 4. The name of the company performing as the research samples

No.	Code	The name of the firms
1.	ASSA	Adi Sarana Armada Tbk.
2.	BBRM	Pelayaran Nasional Bina Buana Raya Tbk.
3.	BIRD	Blue Bird Tbk.
4.	BULL	Buana Listya Tama Tbk.
5.	CANI	Capitol Nusantara Indonesia Tbk.
6.	GIAA	Garuda Indonesia (Persero) Tbk.
7.	HITS	Humpuss Intermoda Transportasi Tbk.
8.	IATA	Indonesia Transport & Infrastructure Tbk.
9.	LEAD	Logindo Samudramakmur Tbk.
10.	LRNA	Eka Sari Lorena Transport Tbk.
11.	MBSS	Mitrabahtera Segara Sejati Tbk.
12.	MIRA	Mitra International Resources Tbk.
13.	NELY	Pelayaran Nelly Dwi Putri Tbk.
14.	PTIS	Indo Straits Tbk.
15.	RIGS	Rig Tenders Indonesia Tbk.
16.	SOCI	Soechi Lines Tbk.

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Table 4. The name of the company performing as the research samples

No.	Code	The name of the firms
17.	TAXI	Express Transindo Utama Tbk.
18.	TMAS	Pelayaran Tempuran Emas Tbk.
19.	TPMA	Trans Power Marine Tbk.
20.	TRAM	Trada Maritime Tbk.
21.	WEHA	WEHA Transportasi Indonesia Tbk.
22.	WINS	Wintermar Offshore Marine Tbk.

Source: The observation from IDX Fact Book 2015, 2016, 2017, 2018.

The method of data analysis

By considering the scale of the variables used in Table 3, we employ the regression model with the pooling data, covering the information of twenty-two companies for four years. Furthermore, the regression model can get obtained in the second equation.

$$SP_{it} = \beta_0 + \beta_1 . ROA_{it} + \beta_2 . DPR_{it} + \beta_3 . DER_{it} + \beta_4 . BVS_{it} + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

The regression model utilizes the ordinary least square to estimate the coefficient. Therefore, a classical assumption test needs to be achieved to produce the best, linear, and unbiased estimators. The required situations are as follows. Firstly, errors have to get normally distributed. To prove it, we use the test of Jarque-Bera. Secondly, multicollinearity has to be absent. To verify it, we detect it by the variance inflation factor. Thirdly, homoscedasticity is essential to happen. To demonstrate it, we utilize the White test. Lastly, autocorrelation does not exist. To corroborate it, we apply the runs test based on the average value.

RESULTS & DISCUSSION

The result of the classical assumption test

This regression model only achieves two classical assumptions. Firstly, the normality on residuals, reflected by the probability of the Jarque-Bera statistic of 0.079229, exceeding the significance level of 0.05 (see Figure 1). Secondly, multicollinearity is absent. This situation gets shown by a variance inflation factor of 1.076, 1.030, 1.004, 1.056 for ROA, DPR, DER, and BVS, respectively, where these values are lower than the cut-off point of 10 (see Panel A in Table 5).

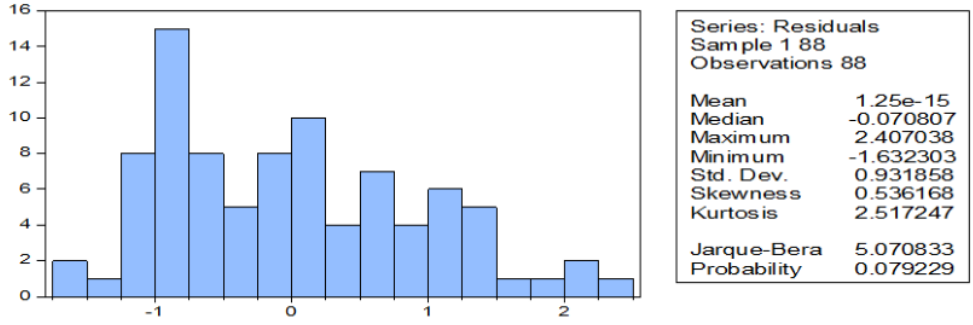

Figure 1. The result of the normality test result by the Jarque-Bera statistic
Source: Output of E-Views 6.

However, the regression model does not meet two assumptions: homoscedasticity and the absence of autocorrelation.

- In Panel B of Table 5, the probability of the t-statistic of DPR^2 and DER^2 is 0.0000 and 0.0002. Because these values are less than the 0.05 significance level, heteroscedasticity still occurs.

Table 5. The result of the multicollinearity detection by variance inflation factor and the heteroscedasticity test by White

Panel A. Multicollinearity detection				
Independent variable	ROA	DPR	DER	BVS
Variance inflation factor	1.076	1.030	1.004	1.056
Panel B. The result of the White heteroscedasticity test: RESID = f(ROA^2, DPR^2, DER^2, BVS^2)				
Independent variable	ROA^2	DPR^2	DER^2	BVS^2
Coefficient	6.83E-05	-2.31E-06	-4.08E-05	1.41E-07
Standard error	0.000407	4.13E-07	1.06E-05	1.00E-07
t-statistic	0.167827	-5.597812	-3.843540	1.408725
Probability	0.8671	0.0000	0.0002	0.1627

Source: Modified Output of IBM SPSS 20 and E-Views 6

- In Table 6, the asymptotic significance of Z-Statistic is 0.0000, performed by the runs test, which is less than a 5% significance level utilized. Therefore, autocorrelation still happens.

Table 6. The test result of the runs based on the mean value

Description	Residuals
Z	-4.066
Asymp. Sig. (2-tailed)	0.000

Source: Output of IBM SPSS 20

The result of the regression model estimation and hypothesis testing

Based on the test of the classical assumptions, heteroscedasticity and autocorrelation exist. For that reason, we make standard errors and covariance consistent with the Newey-West when estimating the regression model. To realize it, we use the E-Views program, as informed by Ghozali & Ratmono (2013). After doing that, we present the result of the model estimation in Table 7.

Table 7. The Estimation Result of the Regression Model based on the adjustment of the Newey-West Heteroscedasticity and Autocorrelation Consistency on Standard Errors & Covariance: The Effect of Fundamental Ratios on Stock Price

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	5.267562	0.212342	24.80693	0.0000
ROA	0.051420	0.013710	3.750598	0.0003
DPR	-0.001256	0.000500	-2.512307	0.0139
DER	-0.000720	0.003941	-0.182810	0.8554
BVS	0.000773	0.000302	2.556087	0.0124

Source: The modified output of E-Views 6

In Table 7, the probability value of the t-statistic of ROA, DPR, and BVS is 0.0003, 0.0139, and 0.0124, respectively, less than a 5% significant level. It means the effect of profitability, dividend policy, and book value per share on the stock price is available based on each sign.

Meanwhile, the impact of debt policy does not exist because the probability value of the t-statistic for DER is 0.8554, which is higher than the 5% significance level.

DISCUSSION

Based on the statistical testing of four hypotheses, it can get seen some pieces of evidence: Firstly, the positive influence of profitability on the stock price is available: the higher the profits, the higher the stock price. This condition means the ability of the company to gain earnings becomes the attractiveness for investors to buy the stocks. By owning the profits, the company does not depend on the debt to survive continually. Based on this fact, this study affirms the result of the research conducted by Natarsyah (2000), Pranata & Pujiati (2015), Avdalović & Milenković (2017), as well as Akhmadi et al. (2020), stating ROA has a positive impact on the stock price.

Secondly, the negative impact of dividend policy on the stock price is present: the higher the dividend, the lower the stock price. It means the investors do not like the firms paying for it. Instead, the firms should reinvest the profits in promising projects. Although using a different measurement of dividend policy, this study confirms the research done by Pranata & Pujiati (2015) and Warrad (2017).

Thirdly, the effect of debt policy on the stock price is meaningless. It means that debt policy does not own an impact on the stock price. This circumstance points out the arbitration process among investors, as explained by Sartono (2008). Under this process, investors sell stocks of the firm group having much debt and purchase stocks of the company group having little debt to enhance capital gain at a similar risk. Consequently, the price of stocks of a firm group having a small amount of debt will upturn, and vice versa. This process ends until both two groups have an equal market price. By owning this evidence, this study supports the research result of Subiyantoro & Andreani (2003), Gunarso (2014), as well as Ariyanti et al. (2016).

Finally, the positive impact of book value per share on the stock price exists: the higher the book value per share, the higher the stock price. Book value per share is the safety assurance for investors to own the company's stocks traded in the capital market. By enhancing this value, the investors appreciate this guarantee by buying the stocks. Hence, their price tends to upturn. By having this fact, this study is in line with the investigation result of Natarsyah (2000), Subiyantoro & Andreani (2003), Oliveira & Henrique (2016), Avdalović & Milenković (2017), as well as Budagaga (2017).

Concerning the negative impact of dividend policy on the stock price, this study expects companies not to pay dividends. Instead, they reinvest the profits that will pay in dividends in promising projects to avoid the negative response from the market. Also, this evidence gets supported by the positive effect of profitability on the stock price. Hence, companies have to survive to operate their business through the created profits to attract the attention of investors in the capital market.

CONCLUSION & RECOMMENDATION

This research intends to test the impact of the fundamental ratios on the stock price of transportation companies listed on the capital market of Indonesia. These intended ratios are from the dividend discount model from Natarsyah (2000), i.e., ROA, DPR, DER, and BVS. After testing and discussing the effect of four ratios, this study concludes that profitability and book value per share positively influence the stock price. However, dividend policy negatively affects. Meanwhile, the influence of debt policy does not exist.

This study has two limitations. Firstly, the number of independent variables used in this study is only four. To overcome it, the following scholars can augment the total determinants of the stock price into the research model, like firm size, systematic risk, risk-free return, liquidity, sales growth, investment opportunity, and stock turnover ratio. Secondly, the scope of this object is narrow, reflected by the use of one sub-industry in the capital market of Indonesia, i.e., transportation. The subsequent scholars can make two choices to control this issue:

1. They can keep using the transportation industry by utilizing the firms from the capital markets in South-East Asia countries, where they perform as the strata. Therefore, by the stratified sampling method, the conclusion can get applied to all firms across countries.
2. They can add the firms from infrastructure and utilities or the non-financial industry as their research object so that their conclusion can get applied to the broader scope.

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GENERAL COMMENTS

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