







“The market value of equity of manufacturing companies during the COVID-19 pandemic”

AUTHORS	Enni Savitri  Tatang Ary Gumanti  Almasdi Syahza   Nik Herda Nik Abdullah 
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Almasdi Syahza, Nik Herda Nik
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Enni Savitri, Doctor, Lecturer, Faculty
of Economics and Business, Universitas
Riau, Indonesia. (Corresponding
author)

Tatang Ary Gumanti, Professor,
Lecturer, Faculty of Economics and
Business, Universitas Bhayangkara
Jakarta Raya, Indonesia.

Almasdi Syahza, Professor, Lecturer,
Faculty of Teacher Training and
Education, Universitas Riau, Indonesia.

Nik Herda Nik Abdullah, Doctor,
Lecturer, Taylor's Business School,
Taylor's University, Malaysia.



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Enni Savitri (Indonesia), Tatang Ary Gumanti (Indonesia), Almasdi Syahza
(Indonesia), Nik Herda Nik Abdullah (Malaysia)

THE MARKET VALUE OF EQUITY OF MANUFACTURING COMPANIES DURING THE COVID-19 PANDEMIC

Abstract

The market value of a public company reflects the expectations of investors. It is influenced by many factors, both internal and external to the company. This study aims to analyze whether intellectual capital moderates the effect of the debt-to-equity ratio and earnings per share on the market value of equity. A set of historical data was collected and analyzed based on a sample of 114 manufacturing companies listed on the Indonesia Stock Exchange from 2017 to 2019. This study uses moderated regression analysis to test proposed hypotheses and a robustness test to examine the sensitivity and consistency of the study results. The findings show that the debt to equity ratio affects the market value of equity, whilst earnings per share does not affect the market value of equity. The analysis also shows that intellectual capital could strengthen the effect of the debt to equity ratio on the market value of equity. In contrast, intellectual capital could not strengthen the effect of earnings per share on the market value of equity.

Keywords

debt ratio, earnings per share, intellectual capital,
Indonesia

JEL Classification

G11, G32

INTRODUCTION

Since manufacturing companies have the largest number of industrial sub-sectors, they often experience declines in the sales of goods. A decline in sales will lead to a decline in the company's revenue. This condition will affect the company's profit, as well as the perceptions of investment decisions by investors, and thus affect the market value of equity (MVE). Therefore, companies need to consider the welfare of shareholders as both parties complement each other in maximizing profits. The efficiency of the rate return of shares profit can be seen when the profit earned in a certain year is compared with the capital used to generate the profit. Companies will share higher profits when they gain a high MVE (Berk et al., 2015; Abuzayed et al., 2009).

MVE reflects how good investors value a company. MVE depends on the movement of stock prices, that is, if the stock price increases, MVE will also increase, and vice versa. Companies in the manufacturing sector listed on the Indonesia Stock Exchange experienced an increase in the MVE from 2015 to 2017; the highest value was in 2017 amounting to IDR 2,542.1 trillion. In the years 2018 and 2019, they were a serious concern to the manufacturing sectors because the market value decreased by IDR 218.7 trillion (Indonesia Stock Exchange, 2020). This figure means that investors lost their investment to that value.

The Chief Economist, IHS Markit said that the Purchasing Managers' Index™ (PMI™) for Indonesia's manufacturing sector has increased 0.1 points from 49.0 in August to 49.1 in September 2019 (Bernard, 2019). However, it showed a further decline as it remained stagnant as in the

previous month. Previously, Indonesia's manufacturing PMI was quite depressed, which was 49.6 in July 2019 decreased to 49.0 in August 2019. IHS Markit marks this sluggishness of the manufacturing sector, which consists of the consumer goods sector, basic and chemical industry sector, and miscellaneous industry sectors are due to deteriorating operations for three years in a row and peaked in September 2019. The manufacturing sector was losing Rp 309 trillion in 2020 compared to the year 2019. The sector experienced the deepest correction, of which it was corrected by 2.16%.

According to Anuonye (2015), the decline in the MVE in a company is usually associated with its financial performance. For example, a high level of financial leverage of a company will generate a higher risk of loss, but the opportunity to earn a profit is also high. Otherwise, if the company has a low leverage ratio, then it will face a low risk as well, so the risk of loss becomes lower, especially when the economy is in a downturn. The decline in the MVE in companies is usually affected by the high level of the company's financial leverage. Companies that have a high leverage ratio will have a greater risk of loss, but there is also an opportunity to earn a large profit (Christina & Dewi, 2020). The level of leverage measures the proportion of debt used by a company to finance its assets. A company with a high leverage ratio will be less attractive to investors because the company's financial risk will increase, as well as the potential default. When a company can earn profits, the payment of the company's debt becomes a higher priority than the dividend distribution. The high level of leverage causes investors to be reluctant to invest because it may reduce its market value (Berk et al., 2015).

Ferris et al. (2018) and Rahmana and Rosidi (2020) show that the debt to equity ratio (DER) affects the market value of a company's equity because when the loan or debt changes, the profitability of the company will also change. Debt is an instrument that is very sensitive to changes in investor perceptions. So, this debt affects the MVE in the company. Management and company owners prefer to carry out debt policies in such a way that it also affects the increase in MVE. However, there are different studies by Christina and Dewi (2020), Rahmana and Rosidi (2020), and Shabib et al. (2015) that show that the DER does not affect the MVE. Since investors do not respond to the size of the company's debt ratio, the MVE is not affected by changes in the company's debt.

The DER indicates the company's ability to meet its long-term obligation, DER correlates the total debt and total equity (Higgins, 2012). This ratio becomes a consideration in choosing investment alternatives. If the value of the company's debt is high, then directly or indirectly, investors will also share the debt. If the use of debt is too high, the company will face a high risk of bankruptcy costs. Empirical evidence showed that the DER has a positive effect on market capitalization (Uzliawati et al., 2018; Shea, 2019), but a correlation between DER and MVE was not found.

Further, the use of capital generates value added for companies to increase earnings per share (EPS). Companies have been able to manage the resources and have increased value-added to enhance profits that could eventually increase EPS (Van Horne & Machowicz, 2009). Alawneh (2018) argues that EPS is an important financial indicator for investors to invest shares in a company. EPS becomes one of the indicators used to evaluate the company's activities that affect the shares price. Certainly, it will affect the company's MVE. Ever-increasing EPS indicates the growth of EPS and how the company creates value for investors (Uzliawati et al., 2018). When EPS increases, investors will gain a high profit, so that many investors will be interested in buying the company's shares.

Proper use of capital generates added value for the company to increase EPS (Van Horne & Machowicz, 2009). The company is considered to have been able to manage its resources, increasing profit, and EPS. Once the company starts to generate high EPS, the equity share will have more demand, which will affect the increase in the MVE (Jatoi et al., 2014). Therefore, an increase in EPS will provide a good signal for investors, and conversely, investors will be more hesitant to invest when EPS decreases, resulting in a decrease in investment in the company, which will affect the MVE. Jatoi et al. (2014), Kumar (2017), and

Uzliawati et al. (2018) stated that the EPS of a company affects the value of the company, while Alawneh (2018) stated that EPS does not affect the company's MVE.

Companies have not maximally utilized intellectual capital (IC) as an intangible asset that can be one of the causes of the decline in stock capitalization (MVE) in the manufacturing sector (Pirayesh & Khojasteh, 2016). As part of the company stakeholders, investors consider that companies with IC will be able to improve the company's performance (Savitri, 2016). As an intangible asset, IC relates to knowledge, experience, information, and intellectual property that can be used to gain wealth and competitive advantage (Janošević et al., 2013). An improved company performance with a good intellectual is noticeable from the company's financial performance in managing the DER and EPS, or in managing total assets that may increase the MVE. Companies with good confidence and IC will encourage investors to trade their shares, which then increases the market value of shares in the company as well as the company value (Savitri et al., 2020).

The availability of information on the financial performance and IC of a company is closely related to signaling theory. Brealey et al. (1977) stated that signals are actions taken by owners in communicating their information to investors. Information is an important tool for entrepreneurs and investors as it can reveal an overview of the company's current, past, or prospects. The novelty of this study is to include the variable of IC as a moderating effect between DER and EPS on the MVE. Good financial performance means the company has succeeded in utilizing all resources, including IC, to generate profits for the company. Chen et al. (2005) and Sadalia et al. (2019) show that IC has a positive effect on financial performance. Therefore, good management of the company's IC will create a useful added value in improving the company's financial performance. Nuryaman (2015), Onyekwelu and Lucy (2016), and Pirayesh and Khojasteh (2016) state that IC affects EPS. The management of the employed value-added capital and value-added human capital, which is a good indicator of IC in the company, is capable of increasing profits. The increase in profit affects the company's EPS. Anuonye (2015) and Olaoye and Afolalu (2020) state that IC does not affect EPS.

This study analyzes the determinants of MVE during the COVID-19 pandemic. More specifically, to analyze the effect of DER on MVE, as well as the effect of EPS on MVE, it examines the moderating effect of IC on the effect of DER and EPS on MVE, using a sample of 114 manufacturing companies.

1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Signaling theory is a theory by Ross (1977). This theory states that company executives have better information. The availability of information is closely related to signaling theory. Brealey et al. (1977) explain that the signal is an action taken by the old owner in communicating the information it has to investors. Existing owners are motivated to disclose private information voluntarily as they hope that the information can be interpreted as a positive signal about the company's performance. Wernerfelt (1984) explains that according to the view of resources-based theory when managers can manage the organization optimally, especially to create value for the company, a manager has fulfilled the ethical aspects of this theory.

Market Value of Equity (MVE) is the value of capital owned by the company based on the assessment given by investors. MVE is one of the fundamental analyses that investors often use to get other financial data (Ting, 2012). Shea (2019) stated that MVE or market capitalization is the total value of all company's shares. MVE is obtained by multiplying the closing price of the company's shares by the number of shares outstanding. Thus, MVE is dependent on the market price of the stock.

The price of a company's publicly traded shares depends on the market supply and demand, so it fluctuates on an irregular basis, and the buyers' and sellers' expectations play a major role in determining the share prices. Shares prices tend to change over time, therefore, researchers generally use the shares price at closing or the so-called closing prices as research data (Menaje, 2012). In other words, if the stock price increases, the MVE

of a company will automatically increase. Thus, the company's management shall use any efforts to increase the market expectations for the company, thus increasing the price of the stock. One of the ways to do so is to show that the company's financial performance is attractive (Brigham & Houston, 2019).

Christina and Dewi (2020) show that the problem that affects the decline in companies' MVE is usually the high level of financial leverage of the company. DER is a ratio used to measure the level of leverage. It shows the company's ability to meet long-term obligations. Brigham and Houston (2019) assert that the DER is a measure used to analyze financial statements in order to show the amount of collateral available to the creditors. According to Higgins (2012), the DER measure is the extent to which the company's assets are financed with debt. The DER compares the total liability of a company to the equity of its shareholders. It can also be used to see the amount of a company's leverage.

A company that increases the value of debt can be regarded as a company that is confident with its prospects. It will encourage investors to invest because when the company's profitability increases, the MVE of the company will also increase. It assumed that if a company wants to increase its MVE, it needs to increase its amount of debt (Shea, 2019). On the other hand, if the use of debt is too high, the company will face high bankruptcy and agency costs (Anuonye, 2015). Therefore, an increase in debt will increase the company's value, but at a certain point, it can also decrease the company's value. Based on the view of signaling theory described by Ross (1977), a company's executives will tend to provide information to potential investors. When the company's DER shows a high or low value, it will affect the investors' perception of investing through the signals given by the company. Thus, changes in DER will affect the company's MVE. This is in line with Shea (2019) and Uzliawati et al. (2018) who state that DER affects MVE. These arguments demonstrate that there is a relationship between DER and MVE.

EPS (EPS) refers to the ratio used to measure the level of success of management in gaining profits for shareholders. The higher value of EPS will please shareholders because the profits provided

to shareholders will be higher (Timothy & Tse, 2016). EPS is a very important measure of a company's profitability. In fundamental analysis, EPS is the only criterion that isolates the net income to see how much investors can gain by investing in companies. EPS continues to grow to show the growth in EPS, thus the company can create value for investors (Uzliawati et al., 2018). The signaling theory described by Ross (1977) indicates that a company will try to show a positive signal of information to potential investors through the company's financial statements. As an indicator of the company's ability to earn profit per share, the development of the EPS value will affect the perception of investors in investing, which will affect MVE. The high value of EPS signaled to the market shows that the company management has strength in its strategic position (Uzliawati et al., 2018). Uzliawati et al. (2018), Jatoi et al. (2014), and Kumar (2017) showed that EPS has an effect on the company's value with the MVE indicator. The arguments support the suggestion that EPS has an effect on MVE.

Stewart (1997) explained IC as the amount of all the things that everyone in a company knows and provides, which contributes to competitive advantage. IC comprises intellectual materials such as knowledge, information, intellectual property rights, and experience, which are intangible assets that can be used to gain wealth. The profit ratio shows the combined impact of the liquidity and the asset, and the management liability on the company's ability to generate profits (Pulic, 1998). As a company's intangible asset, IC is considered to be capable of moderating the relationship between DER and MVE, because good management of IC will help the company to manage the level of debt to increase investment and the company's operations smoothly (Ardiantini et al., 2020; Sumangala & Bhatt, 2013). IC is a determinant of the company's performance; it describes the ability of a company's management in using intensive knowledge.

In today's global competition, knowledge becomes the basic element of success. Through a good signal that shows the management of a company's IC in its financial performance in the form of DER, investors will perceive a company as fundamentally good and interested in

investing. Thus, it will increase the company's MVE (Anghel et al., 2018). Previous research on IC and DER showed that IC has a positive effect on DER (Anghel et al., 2018; Jasor et al., 2013; Chang & Lee, 2012). Accordingly, it is hypothesized that DER affects MVE, with IC as a moderating variable.

IC is the knowledge that provides information about the intangible value of a company that can affect its resilience and competitive advantage (Maditinos et al., 2011). Proper use of IC generates an added value to the company in increasing EPS to attract investors in deciding the investment value on the company, which will increase the market value of the company as well (Ahangar, 2011; Poh et al., 2018). Financial performance is very important for the company and stakeholders who have various interests. A good financial performance shows the company's success in utilizing all resources, one of which is the proper use of IC. It will give a good signal to investors.

The profit generated by a company shows that the company has utilized investment funds properly. It will affect the company's market value (Anghel et al., 2018). Alfiah (2018) states that a company that can compete is a company that can manage and utilize its resources. Previous research on IC and EPS showed that IC has a positive effect on EPS (Alfrah, 2018; Sadalia et al., 2019). Thus, the arguments reveal that EPS has an effect on MVE, while IC serves as a moderator.

Based on the discussion above and to implement the stated aims, the paper hypothesizes the following:

H1: DER is positively associated with MVE.

H2: EPS is positively associated with MVE.

H3: IC moderates the relationship between DER and MVE.

H4: IC moderates the relationship between EPS and MVE.

2. RESEARCH METHODS

This study is conducted on manufacturing companies listed on the Indonesia Stock Exchange (IDX) from 2017 to 2019. The data were generated from the companies' financial reports. Using a purposive sampling method, the study examines 114 companies. The following criteria apply: 1) the companies published their financial and annual reports every year from 2017 to 2019, 2) the companies have financial statements in rupiah currency, which include the value of the number of shares outstanding and the closing price with year-end calculations.

This study uses the Moderated Regression Analysis (MRA) as a data analysis technique. The Robustness Test is also used to examine the sensitivity and consistency of the research results by separating the samples into three different groups, namely the basic and chemical industry sector, miscellaneous industry sector, and consumer goods industry sector. The identification and measurement of variables are presented in Table 1.

Table 1. Identification and measurement of variables

Variable	Symbol	Measurement
Market value of equity	MVE	Multiplying the number of outstanding shares by the closing price
Debt to equity ratio	DER	Total debt over total equity
EPS	EPS	Net profit (after interest and tax) over the number of outstanding shares
Intellectual capital	IC	Value-added (VA) : the difference between output and input
		VACA = value-added over capital employed
		VAHU = value-added over human capital
		STVA = structure capital over value-added
		VAIC = sum of VACA, VAHU and STVA

3. RESULTS

3.1. Descriptive statistics of variables

The descriptive statistics of variables are shown in Table 2.

As shown in Table 2, DER has a minimum value of -4.94% and a maximum value of 23.92%, while EPS

Table 2. Descriptive statistics of variables

Variable	Minimum	Maximum	Mean	Std. Deviation
DER (%)	-4.940	23.920	1.207	2.163
EPS (time)	-1.625	5,655	129	496
MVE (IDR million)	13.501	1.336.581	28.029	2.083
IC (%)	-9.600	18.210	4.938	3.139

has a minimum value of negative IDR1.625,90. The company with the lowest EPS experienced a continuous loss and has a debt value that is higher than its equity. The minimum value of MVE is Rp13,501 (million) and the maximum value is IDR1,336 (trillion). IC has a minimum value of -9.60%. This low figure could be due to an increase in the leverage recorded in its financial statements that affect the value of structural capital value-added, which is one of the accumulations to get the IC value. It makes the negative value of structural capital value added is higher than the value of added capital employed and value-added human capital. Thus, the accumulation of IC becomes a negative value with a maximum value of 18.21%.

Table 3. Correlation matrix of variables

Variable	EPS	IC	DER*IC	EPS*IC
DER	-0.042	-0.122	-0.405*	0.002
EPS		0.231*	-0.001	0.739*
IC			0.163**	0.130
DER*IC				-0.006

Note: * and ** indicate significance at the 5% and 10% levels, respectively.

As shown in Table 3, none of the correlations between the independent variables have a value of more than 0.8. It shows that there is no multicollinearity in this regression model or there is no correlation between the independent variables in the model.

The result of the moderated regression analysis (MRA) test is shown in Table 4.

Table 4. Moderation regression analysis test result

Variable	Coefficients		t-stat	p-value
	beta	Std. Error		
Constant	26.714	0.200	133.845	0.000
DER	-0.100	0.050	-1.988	0.048
EPS	0.000	0.000	1.063	0.289
IC	0.264	0.033	8.004	0.000
DER*IC	-0.184	0.097	-1.900	0.028
EPS*IC	0.288	0.138	2.089	0.068

Note: DER is Debt to equity ratio, EPS is Earnings per share, and IC is Intellectual capital.

The MRA test shows that DER affects MVE ($p < 0.05$) and the EPS variable does not affect MVE ($p > 0.05$). Furthermore, IC affects MVE ($p < 0.05$). IC moderates the effect of DER on MVE ($p < 0.05$). IC does not moderate the effect of EPS on MVE ($p > 0.05$).

To check whether the results reported in this study are not affected by a certain industry, the robustness test is performed. In this study, the result of the Robustness test is used to observe whether the result of the three manufacturing sectors is consistent with the result of the main model, which tested all samples of manufacturing companies. Based on the result shown in Table 5, the DER in the basic and chemical industries is significant ($p < 0.10$). It shows DER does not affect the company's MVE.

The significance value is higher than the main model due to the fluctuation in DER shown by this industry. The ups and downs of the value of the debt-equity ratio do not affect the investors' perception, thus, it does not affect MVE. Meanwhile, EPS in this industry is significant ($p < 0.01$), an increase or decrease in the value of EPS in this sector tends to affect the ups and downs of the company's MVE. The interaction between IC with DER and EPS on the MVE shows the same result, which shows a significance value of 0.493 and 0.799, respectively. Therefore, the management of IC in this sector has not been maximized, as indicated by the value of IC that tends to decrease.

As shown in Table 5, the value of DER in the miscellaneous industry shows a significance value of 0.048. It shows that in this industry, DER affects the company's MVE, and the significance value is consistent with the main model due to fluctuations in DER shown by this industry. The ups and downs of the value of DER affect the investors' perception, thus, it affects MVE. The number of EPS also shows a consistent result with the main model, which is insignificant ($p > 0.10$). Therefore, in this sector, the increase or decrease in the val-

Table 5. Robustness test results

Predictor	Basic and Chemical Industry		Miscellaneous industry		Consumer Goods Industry	
	t	Sig.	t	Sig.	t	Sig.
Constant	97.749	0.000	54.360	0.000	68.458	0.000
DER	-1.908	0.059	0.444	0.048	1.155	0.050
EPS	3.781	0.000	0.920	0.361	1.052	0.295
IC	1.337	0.184	0.773	0.442	7.278	0.000
DER*IC	-0.688	0.493	-0.276	0.043	1.453	0.049
EPS*IC	-0.255	0.799	1.296	0.200	0.377	0.707
F (Sig.)	5.850 (0.000)		4.644 (0.000)		16.484 (0.000)	
R	0.434		0.221		0.616	
R ²	0.188		0.049		0.379	
Adjusted R ²	0.156		-0.027		0.356	

Note: DER is Debt to equity ratio, EPS is Earnings per share, and IC is intellectual capital.

ue of EPS does not affect the investors' perception toward investment decisions as well as the company's MVE.

The interaction between IC with DER shows a consistent result with the main model as it shows a significant value ($p < 0.05$). Therefore, changes in the DER ratio shown in the financial statements affect the investors' perception of this sector. The interaction of IC and EPS on MVE in this sector is insignificant, which is consistent with the main model. It shows that the management of IC in this sector has not been maximized, as indicated by the value of IC that tends to decrease.

In the consumer goods industry, the value of DER and EPS shows consistent results with the main model as it shows a significant value that is consistent with the significance value of DER ($p < 0.05$), but EPS is insignificant. The interaction between IC and DER also shows a consistent result with the main model. Therefore, changes in DER shown in the financial statements affect the investors' perception of the consumer goods sector. The interaction of IC and EPS on MVE in this sector is insignificant. This shows that the management of IC in this sector has not been maximized as indicated by the value of IC that tends to decrease.

4. DISCUSSION

Based on the findings, it is found that DER has a negative effect on MVE. It means a decrease of DER in manufacturing companies will increase MVE. Thus, a company with higher DER will have lower MVE, and vice versa. A company that in-

creases the value of debt can be regarded as being more confident in its prospects. A company with a high DER indicates that it has a greater cost of debt that must be paid by the company so that profitability will decrease. The finding reported here is in support of Shea (2019) and Uzliawati et al. (2018). Yet, it is in contrast to Anuonye (2015) who found no significant result.

Meanwhile, the result revealed that EPS does not affect MVE. It means that the level of EPS does not relate to the company's value. It implies that investors do not consider EPS as a contributor to their valuation of a company. It is in contrast to the fundamental analysis concept that the bottom line is one of the important factors in determining a company's value (Lev & Thiagarajan, 1993). The finding confirms Alawneh (2018) and Warrad (2017), but it does not support Uzliawati et al. (2018), Jatoti et al. (2014), and Kumar (2017).

In terms of the moderation effect, it is found that IC moderates the effect of DER on MVE. The higher the IC of a company, the better the company will be in managing the debt level to increase the investment and its operations smoothly. When a company has uncertainty over the high value of debt and debt interest that must be paid, then the optimal management of IC will balance the company in generating profits. It implies that a well-managed IC in managing financial leverage will strengthen the effect of DER on the company's MVE. Therefore, a high value of IC will strengthen the effect of DER on MVE. Thus, a company will excel in business competition and gain good financial performance by owning, controlling, and utilizing important strategic assets (tangible

and intangible assets). The finding of the study supports Anghel et al. (2018) and Jasor et al. (2013), who stated that IC has a positive effect on DER.

The result also discovered that IC cannot moderate the effect of EPS on MVE. Several companies experienced a decline in IC use. Besides, in the period 2017–2019, production and new demand in manufacturing companies continued to decline. This forces the company to reduce the number and activity of purchases. The compa-

ny also reduced the number of employees, which makes the factory workforce declining for three months in a row. By those reductions in expenses, certainly affects output costs, which are observed to fall for the first time in only three years until September 2019. The findings in this study support Anuonye (2015) and Olaoye and Afolalu (2020) in that IC does not strengthen the effect of EPS on the company's MVE. Nevertheless, it is different compared to Alfraih (2018) and Sadalia et al. (2019).

CONCLUSION

This paper examines whether intellectual capital moderates the effect of the debt-to-equity ratio and earnings per share on the market value of equity in manufacturing companies listed on the Indonesia Stock Exchange from 2017 to 2019. Moderated regression analysis results indicate that the debt-to-equity ratio has an effect on the market value of equity, however, earnings per share does not have an effect. Additionally, the study demonstrates that intellectual capital has the potential to increase the influence of the debt-to-equity ratio on the market value of equity. By contrast, intellectual capital was unable to enhance the effect of earnings per share on the market value of equity.

In manufacturing companies, DER affects the market value of equity. Their products are consumptive naturally, which makes manufacturers always produce their products regularly. A high level of sales will increase the company's profitability and can increase the company's stock price. EPS does not affect the market value of equity. Dividends received by investors have small amounts, so it is not a consideration for investors to invest. Intellectual capital can strengthen the effect of DER on MVE. Skill ability of human resources, high product sales can manage the company's debt in such a way that it can increase the value of the company's stocks. Intellectual capital cannot moderate the effect of EPS on MVE. The demand for products is decreasing, the number of employees is decreasing. Intellectual capital cannot moderate the effect of EPS on MVE.

There are special conditions for the basic and chemical industry sectors, DER does not affect the market value of equity. This was due to a decrease in the interest rate on the principal loan, which did not affect the stock price. EPS affects MVE, since companies in this sector have been receiving high dividends. As a result, the demand for company shares will increase and share prices will increase. Intellectual capital cannot moderate the effect of DER on MVE. It is caused by the existing resources in the company that cannot affect the debt and share price of the company.

The results of the study must be carefully interpreted as there are at least two limitations inherent to the study that needs attention. Firstly, the study uses two ratios, DER, and EPS. DER is measured based on the financial report at the end of the year without adjustment for the average value. Thus, future studies may use the average value of equity or other proxies for financial leverage. Secondly, IC is calculated using a measurement developed by Pulic (1998). There are other measures for IC such as Scandia Navigator or calculated using intangible value, which may better reflect expression. Thus, in future studies, these measures can be examined taking into account the characteristics of the companies.

AUTHOR CONTRIBUTIONS

Conceptualization: Enni Savitri, Tatang Ary Gumati.

Data Curation: Enni Savitri, Tatang Ary Gumanti, Nik Herda Nik Abdullah.

Formal Analysis: Enni Savitri, Tatang Ary Gumanti, Almasdi Syahza, Nik Herda Nik Abdullah.

Funding Acquisition: Enni Savitri, Almasdi Syahza.

Investigation: Enni Savitri, Tatang Ary Gumanti, Nik Herda Nik Abdullah.

Methodology: Enni Savitri, Tatang Ary Gumanti, Almasdi Syahza, Nik Herda Nik Abdullah.

Project Administration: Enni Savitri, Almasdi Syahza.

Supervision: Enni Savitri, Tatang Ary Gumanti, Nik Herda Nik Abdullah.

Validation: Almasdi Syahza.

Visualization: Almasdi Syahza.

Writing – original draft: Enni Savitri, Tatang Ary Gumanti, Almasdi Syahza, Nik Herda Nik Abdullah.

Writing – review & editing: Tatang Ary Gumanti, Nik Herda Nik Abdullah.

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