

Firm's Value Exploration: The Impact of Intellectual Capital and Net Working Capital

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Abstract

Intellectual capital (IC) gains more importance nowadays, and hence, this study investigates the impact of IC and net working capital (NWC) on firms' values creation. If IC has a greater impact than NWC, it indicates that automotive and components companies in Indonesia have paid attention to IC's contribution to increase company value. This study was conducted on 15 automotive and components companies from 2011 to 2018 as this industry utilises more IC and NWC than any other industries. We used panel data regression analysis with random effect model to test the hypothesis of 92 data, with IC calculated through the MVAIC model, and firm's value is measured by Tobin's Q. The results show that IC has no significant effect on firms' value. Meanwhile, NWC has a significant negative effect on firms' values creation. These important findings suggest that automotive and components firms should apply strategic management in managing IC and NWC to increase the firm's value.

Keywords: *firms' value; intellectual capital; net working capital*

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INTRODUCTION

Investments in intangible assets are important in the digital era as a means to increase the competitive advantage and competitiveness of a company (Kemenkeu, 2019; Duodu & Rowlinson, 2019). The utilization of intangible assets during the last four decades has increased sharply and has shifted the percentage of ownership of tangible assets in companies (see Figure 1). This shift can also be seen in the five largest global companies that are members of the S&P 500, which also have intangible asset values that are greater than the values of their tangible assets (see Figure 2). It indicates that there are significant changes that occur in company's asset structure each year.

In line with the changes in global asset structure, Indonesia in 2015 entered the era of Asean Economic Community (AEC) (ASEAN, 2013) in order to create competitive, innovative, and dynamic ASEAN countries (Kemlu, 2019). The use of physical resources is no longer sufficient to support Indonesia in competing with other ASEAN countries due to the characteristics of physical resources that are easily imitable and less innovative (Soetanto & Liem, 2019). The era of AEC has shifted business competition from price perspective to product quality and design

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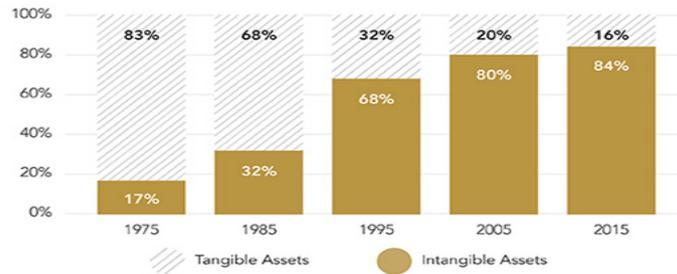


Figure 1. Changes in Intangible Assets and Tangible Assets
Sumber: Oceantomo (2017)

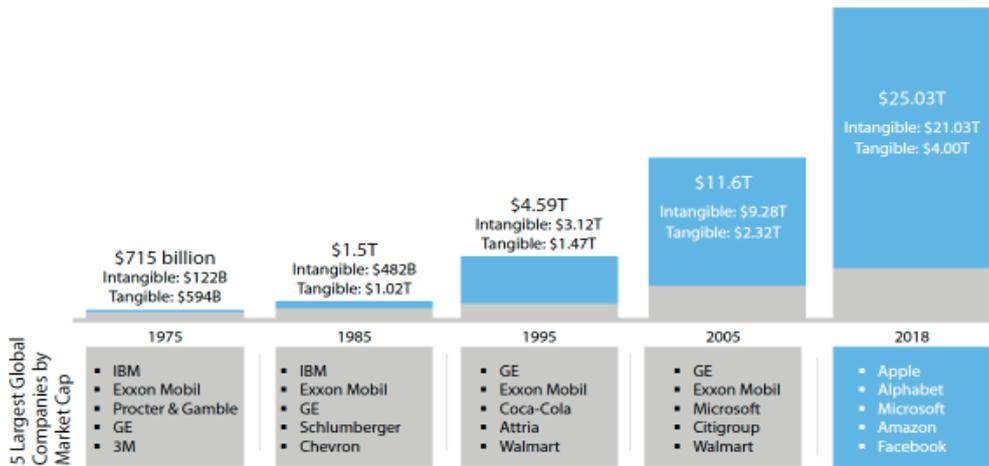


Figure 2. Intangible Assets vs Tangible Assets S&P 500 Companies
Sumber: Ipcloseup (2019)

perspective (Kemendag, 2016). These changes require companies to create new strategies to make their products have value added, one of which is the use of intangible assets. In addition, companies also need to identify and exploit existing resources to create strategies that are different from those of other companies (Paek et al., 2015). The utilization of these resources is related to the Resource Based View (RBV).

RBV views that companies should pay attention to resource combinations that are not easily imitated or replaced (Barney, 1991; Mahoney & Pandian, 1992; Wernerfelt, 1984). Resources in the RBV are considered to be very heterogeneous (Barney, 1991). With the heterogeneity of resources, a resource may become rare when it is not easily imitated, transferred, or replaced (Bayraktaroglu et al., 2019). Rare resources are very important to improve the competitiveness and performance of a company, which ultimately have an impact on firm value (Bayraktaroglu et al., 2019). The main objective of RBV is to help management to identify resources that can help increase competitive advantage through resource advantage (Barney, 1991). All assets owned by a company are potential strategic assets that become a source of wealth, including net working capital (NWC), fixed assets, and intangible assets in which IC is contained (Kamath, 2007; WIPO, 2010). Therefore, the combination of IC and NWC is expected to increase competitive advantage, which in turn can increase firm value according to the RBV.

Intellectual capital (IC), as an intangible asset, is considered a resource that increases value, growth, innovation, and development of a company's competitive advantage because of its rare and not-easily imitable characteristics (Bayraktaroglu et al., 2019; Molodchik et al., 2019; Nimtrakoon, 2015). This makes IC as one of the most distinctive assets, and if a company invests more in IC, the company's competitive advantage and performance can be better (Huang & Huang, 2020; Nadeem et al., 2017; Suryani & Nadhiroh, 2020; Zakery & Afrazeh, 2015). IC is a combination of several components: human capital efficiency (HCE), structural capital efficiency

(SCE), capital employed efficiency (CEE), and relational capital efficiency (RCE). HCE refers to the skills and knowledge of employees. SCE includes structural capital efficiency in the form of internal relationships within the company, which are reflected in a system, procedure, database, network, and daily business processes of the company (Khalique et al., 2015). Meanwhile, CEE consists of physical and financial capital in a company, and RCE is related to a company's ability to establish cooperations with stakeholders. In addition, RCE also allows companies to access information about customers that are useful to determine customer needs precisely (Massaro et al., 2015). IC components are closely related to company's internal relationships, and companies need to implement strategic management in allocating internal resources effectively and efficiently (Huang & Huang, 2020; Low et al., 2015). Strategic management within a company is expected to be able to help the company's internal relations run well with the right allocation of resources.

If IC is related to intangible knowledge capital, then NWC is the physical capital of a company (Stewart & Ruckdeschel, 1998). NWC is the difference between current assets and current liabilities. A positive NWC means that current assets are sufficient enough to pay off company's current liabilities. A company must be able to distinguish NWC from IC because of their different characteristics and effects on the firm's value. In other words, if the company is able to differentiate between IC and NWC, it will be easier to prioritize assets.

Several previous studies that observed the influence of NWC on firm value have shown different results. Ownership of NWC at a certain limit resulted in a high firm value (Afrifa, 2016), but if it exceeded that limit, firm value would actually decrease (Ahangar & Shah, 2017; Wasiuzzaman, 2015). The decrease in firm value was caused by investors who assumed that a NWC that was too high indicated a company's limited ability to manage current assets (Ahangar & Shah, 2017). It indicates that investors prefer companies that are able to maintain the optimal point of NWC because on the other hand, NWC can also reduce firm value (Altaf, 2018; Kokodey et al., 2020).

The purpose of this research was to determine the effect of IC and NWC on firm value. If NWC gives a higher result than IC, it can be seen that to value a company, investors still depend on the value of current assets. Conversely, if IC provides a higher result, it can be said that no matter how much NWC the company has, as long as there is IC in the company, investors will be interested in investing and ultimately increasing the firm value.

In contrast to previous studies, this research contributes to examining the effect of IC on firm value with the addition of NWC as another independent variable. NWC is added in this research because many investors are still considering the rate of return to be received rather than the investment made by the company on assets (Brito et al., 2014). The rate of return on investment, for example, can be seen if a company has a good level of liquidity to ensure that finances are in sound condition. This research aims to discover whether investors still refer to this assumption while still heeding the NWC in assessing companies or whether they have tried to pay attention to the contribution of IC in creating firm value. Previous research trends indicate that IC has an effect on firm value and performance (Anifowose et al., 2018; Bayraktaroglu et al., 2019; Dzenopoljac et al., 2017; Nimtrakoon, 2015; Sardo & Serrasqueiro, 2017; Smriti & Das, 2018; Soetanto & Liem, 2019; Vishnu & Gupta, 2014). In addition, there has been also further research on IC reporting and disclosure (Anifowose et al., 2017; Beretta et al., 2018; Camodeca et al., 2018; Duff, 2018; Mangena et al., 2016; Melloni, 2015; Terblanche & Villiers, 2018; Wang et al., 2016). However, as far as is known, there has been still no research that attempts to reveal the relationship of IC and NWC with firm value. This research contributes to efforts to confirm the validity of the RBV. The results of this research are also expected to give practical contribution as a basis for decision making on company policy regarding investment in IC and NWC so as to increase firm value.

This study is specified in the automotive and components industry from 2011 to 2018. Previous research has focused a lot on the banking industry (Meles et al., 2016; Ozkan et al., 2016; Singh et al., 2016), the pharmaceutical industry (Vishnu & Gupta, 2014), hospitality industry (Li

& Liu, 2018), and the Information and Communication Technology industry (Ramadan et al., 2017). However, as far as is known, there has been still no specific research on IC that examines the automotive and components industry. The automotive and components industry is a high IC intensive industry (Woodcock & Whiting, 2009) that requires IC to support the development of innovation in firm value creation. Thus, the development of innovation and the acceleration of human resources are vital for the automotive industry (Caganova et al., 2019). The failure of automotive companies to invest in IC may lead to bankruptcies, as happened to Delphi Corp and General Motors Corp (Eades, 2017; Eades & Gupta, 2017). Therefore, this research was conducted to understand the differences in the contribution of IC and NWC to the firm value of the automotive and components industry.

Firm value refers to the success of management in conducting its business processes through optimal and efficient utilization of assets. In terms of increasing firm value, IC optimization can be one of the influencing factors (Nimtrakoon, 2015; Sardo & Serrasqueiro, 2017; Smriti & Das, 2018; Soetanto & Liem, 2019; Zéghal & Maaloul, 2010). RBV views that a company has a collection of resources that are useful for creating company competitive advantage (Barney, 1991). A resource will be considered increasingly valuable if the resource is rare, not easily imitable, and irreplaceable so that its existence is important to ensure a high level of competitiveness and performance (Bayraktaroglu et al., 2019).

Research conducted on high-tech companies in ASEAN found that the proportion of IC in each country was not much different and IC had a positive effect on firm value (Nimtrakoon, 2015). Meanwhile, research conducted on Indian and Western European companies indicated that IC had a significant effect on firm value and the component of IC that had a high contribution was HCE (Sardo & Serrasqueiro, 2017; Smriti & Das, 2018). Further research conducted on all non-financial companies in Indonesia and all companies in the UK showed that CEE was the only IC component that had an effect on market value in the high-tech industry group only (Soetanto & Liem, 2019; Zéghal & Maaloul, 2010). Based on previous theory and research the hypothesis that can be formulated is as follows:

H₁: IC has a positive significant effect on firms' value

Company's assets consist of net working capital (NWC), fixed assets, and intangible assets (WIPO, 2010). Companies must be able to carefully differentiate their wealth to know which resources should be prioritized (Stewart & Ruckdeschel, 1998). NWC is internally funded resources, which is more flexible to obtain (Sugeng, 2017). Internal sources of funds are originated, established, and obtained by the company itself (Sugeng, 2017). In the context of the NWC, it is important for companies to pay attention to the investments they make so that the investments can help increase firm value. In addition, RBV also considers all company resources, including strategic resources, that help increase value and competitive advantage (Wernerfelt, 1984).

Wasiuzzaman (2015) studied the influence of the NWC on firm value in Malaysia and discovered that investors regarded NWC investment as important in determining firm value. However, investors preferred limited investment in the NWC because its existence affected capital structure of a company. Furthermore, research conducted on non-financial micro-firms in the UK from 2004 to 2013 discovered that by observing the optimal level of investment in NWC, firm value would increase along with the level of NWC (Afrifa, 2016). In addition, companies that could manage NWC efficiently could increase firm value and reduce future financial constraints (Dhole et al., 2019). Further research conducted on the non-financial industry in India obtained a result in the form of an inverted U, which meant that the NWC would affect firm value at a certain point (Ahangar & Shah, 2017; Altaf & Ahmad, 2019). The results of previous research suggest that when a company finances its working capital needs with lower short-term debt, the performance will increase so that the firm value also increases (Altaf & Ahmad, 2019). Referring to previous research, it is indicated that the existence of the NWC is considered important by investors in

assessing companies and thus, companies must be able to manage NWC efficiently so as not to reduce firm value. Thus, the proposed hypothesis is as follows:

H₂: NWC has a positive significant effect on firms' value.

METHODS

This research is an explanatory quantitative research, which explains the relationship between the independent variables (IC and NWC) and the dependent variable (firm value). This research specifically focused on 15 companies in the automotive and components industry that were listed on the Indonesia Stock Exchange from 2011 to 2018. The data were obtained via the Osiris database. The automotive and components industry were chosen because exports of Indonesian automotive products to the ASEAN region and China experienced an increase of 14.55% (Kemendag, 2016), which indicated an increase in the competitiveness of automotive products. In addition, the automotive and components industry are also included in the category of High IC Intensive Industries according to the Global Industry Classification Standards (Woodcock & Whiting, 2009). The Indonesian automotive and components industry had increased sales and production levels from 2015 to 2017 by occupying the highest sales position in ASEAN level (AAF, 2016, 2018). This showed that the Indonesian automotive and components industry had high competitiveness and this competitiveness must be maintained for the next period. However, the Indonesian government changes the orientation of automotive products to electric-powered vehicles, and hence, investment in IC is very important for the automotive industry to be able to compete and carry out reforms faster than other industries (Caganova et al., 2019; Kemenperin, 2019). The research period was separated into two parts; the period 2011-2014 before the AEC, and the period 2015-2018 during the AEC (Kemenkeu, 2016). The separation of periods in this research was intended to determine whether there was a change in the IC level during the AEC era and before the AEC era. The number of samples in this study were 120 data. Data screening was carried out and showed that there were 12 missing data that were completely at random in 3 companies so that 24 data were deleted (Little's MCAR χ^2 , $p = 0.288$). The test for outliers was then conducted, and there were 4 outliers detected and deleted (Hair et al., 2019), and resulted in 92 remaining data.

The independent variables in this research include IC and NWC. The IC is measured using the MVAIC (Nimtrakoon, 2015; Ulum et al., 2014; Soetanto & Liem, 2019; Vishnu & Gupta, 2014) as follows:

$$\begin{aligned}
 \text{MVAIC} &= \frac{\text{HCE}}{\text{VA}} + \frac{\text{SCE}}{\text{SC}} + \frac{\text{CEE}}{\text{VA}} + \frac{\text{RCE}}{\text{RC}} \\
 &= \frac{\text{HC}}{\text{VA}} + \frac{\text{SC}}{\text{VA}} + \frac{\text{CE}}{\text{VA}} + \frac{\text{VA}}{\text{VA}} \\
 &= \frac{\text{Total Revenue - Total expenses + employee cost + interest + taxes + dividends}}{\text{Employee costs}} + \frac{\text{Total Revenue - Total expenses + interest + taxes + dividends}}{\text{Total Revenue - Total expenses - employee cost + interest + taxes + dividends}} + \frac{\text{Total Revenue - Total expenses + employee cost + interest + taxes + dividends}}{\text{Total Assets - Intangible assets}} + \frac{\text{Marketing cost + selling cost + advertising cost}}{\text{Total Revenue - Total expenses + employee cost + interest + taxes + dividends}}
 \end{aligned}$$

The next independent variable is Net Working Capital (NWC). NWC is capital derived from current assets to finance company operations. NWC is used to discover whether current assets of a company are able to meet the company's current liabilities if the assets are converted into cash. The NWC formula is as follows (Aktas et al., 2014; Afrifa, 2016):

$$NWC = \left(\frac{\text{Accounts Receivable}}{\text{Sales}} \right) + \left(\frac{\text{inventories}}{\text{sales}} \right) - \left(\frac{\text{accounts payable}}{\text{sales}} \right)$$

The dependent variable in this research is firm value as measured by using Tobin's Q to reflect firm value based on a market perspective, especially investor perspective (Wolfe & Aidar Sauaia, 2003). Companies with Q value of more than 1 have high potential for growth (Tobin, 1969) and good management performance in managing company assets (Lee & Tompkins, 1999). Tobin's Q was employed as a proxy for firm value as in previous research (Altaf & Ahmad, 2019; Anifowose et al., 2017; Berezinets et al., 2016; Sardo & Serrasqueiro, 2017). Tobin's Q is calculated as follows (Lindenberg & Ross, 1981; Wolfe & Aidar Sauaia, 2003):

$$\text{Tobin's } Q = \frac{MVE + D}{TA}$$

MVE = Stock price at the end of April after financial year-end of company (Deswanto & Siregar, 2018) multiplied with outstanding shares (market capitalization) (Loh et al., 2017; Xu et al., 2007)

D = Book value of total debts (current liabilities + long-term liabilities)

TA = Book value of total assets

This research also control for other variables:

- 1) Age, the longer the companies sampled have been established, it has the more time to convert HC to SC (Nimtrakoon, 2015; Berraies, 2019).
- 2) Leverage is measured by the ratio of total debts to total assets (Altaf & Ahmad, 2019; Ginesti et al., 2018; Sardo & Serrasqueiro, 2017).

$$\text{Lev} = \frac{\text{Book value of total debt}}{\text{Total asset}}$$

- 3) Growth shows the companys' growth that be measured by the sales on current year divided by sales on the previous year (Ahangar & Shah, 2017; Altaf & Ahmad, 2019).

$$\text{GROWT} = \frac{\text{current year sales}}{\text{previous year sales}} - 1$$

- 4) Profitability shows the company capability on create current year earnings. Profitability in this research is measured by ROA (Anifowose et al., 2017).

$$\text{ROA} = \frac{\text{current year earning}}{\text{total assets}}$$

- 5) AEC shows the shifting of economic system from traditional to global system. Therefore, it is important to know whether firms' value in Indonesia are also being affected by AEC or not. AEC is measured using dummy variable that is giving a score 1 for the period of AEC (2015-2018) and score 0 for the previous period before AEC (2011-2014).

Regression model for panel data analysis was used in this study because the research data were a combination of time series and cross-sectional data. Regression model for panel data analysis was chosen because it is considered more appropriate than ordinary regression analysis which assumes that the relationship between variables is constant over time among companies (Widarjono, 2018). Panel data analysis assumes that the relationship between variables differs between time among companies (Widarjono, 2018). Panel data enable to control for heterogeneity between companies, identify undetectable effects from cross-sectional data, and improve measurement accuracy (Baltagi et al., 2013; Croissant & Millo, 2019; Hsiao, 2014). Regression model for panel data analysis was performed after the data screening to ascertain whether the

data used were feasible for further testing (Hair et al., 2019). The classical assumption test that consists of normality, heteroscedasticity, multicollinearity, and autocorrelation tests had also been fulfilled in this research, and hence, regression model for panel data analysis was conducted. Regression model for panel data analysis was performed by selecting the best estimation model to be used in this research.

There are three estimation models in the panel data regression analysis, the common effect model (CEM), the fixed effect model (FEM), and the random effect model (REM). Table 1 shows the result of panel data estimation model selection test, which is the random effect model (REM). REM estimates panel data in which residuals may be related over time among firms (Widarjono, 2018). The difference in intercept in the random effect model is accommodated by each error of the companies.

Table 1. Test of Panel Data Model Estimation

Model Estimation Test	<i>p-value</i>	Model Selected
Chow Test	0.000	FEM
Hausman Test	0.171	REM
Lagrange Multiplier Test	0.000	REM

RESULTS AND DISCUSSION

Table 2 shows that the mean value of automotive companies in Indonesia during the 2011-2018 period was 0.97. The value was almost close to 1, which indicated that, on average, companies have not yet fully had high growth prospects and have not been able to fully manage their assets properly. This can be caused by the fact that Indonesia is a member of the AEC whereby competition in the automotive and components industry become increasingly fierce. The companies have to maintain their own firms' value to compete with the other global companies that entered Indonesia. In this case, companies that had not been able to compete in the free market properly might have a low firm value, which was indicated by a minimum value of 0.20.

Table 2. Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation
Firms' value	0,20	2,37	0,97	0,43
IC	1,70	22,91	6,14	3,59
NWC	-0,01	0,97	0,26	0,17
Age	21,00	101,00	43,92	20,28
Leverage	0,09	0,89	0,47	0,17
Growth	-0,27	0,82	0,10	0,17
Profitability	-0,14	0,70	0,07	0,10

The mean of IC is 6.14 and the values among companies are quite different based on the standard deviation obtained. This result indicated that companies have tried to consider the use of their intangible assets rather than continuing to depend on their tangible assets. NWC had lower mean and standard deviation compared to IC while NWC among companies was not much different. In addition, NWC had the lowest value of -0.01, which meant that the quantity of current assets could not be used to cover current liabilities of the company.

Leverage had a mean value of 0.47, showing that automotive and components companies had a low debt ratio because their total assets were much greater than the value of their liabilities. This also implies that companies had a lower risk of default. Growth, which is a measure of the sales growth of a company, had a maximum value of 0.82, which indicated that companies were able to increase sales by 80% of sales from the previous year. An increase in a company's sales can be an indication that the company is able to adapt to the free market, which is the impact of AEC.

However, companies that were unable to maintain their competitiveness were likely to experience a sales decline of up to 27% of sales from the previous year. This can be seen from the minimum growth value of automotive companies.

Profitability had a maximum value of 0.70 because companies were able to generate profits well by utilizing their assets. On the other hand, the lowest profitability value is -0.14 because the company could not sell their inventories, decline the sales while the expenses borne continued to increase, resulted in a negative profitability. In other words, if a company is able to implement a new strategy by utilizing IC, it is likely that the company's ability to generate profits can also increase.

Table 3 shows the correlation among variables in this study. IC had no correlation with firm value, while NWC had a significant negative correlation with firm value. In addition, the leverage also had a significant positive correlation with firm value, while the other control variables had no correlation with firm value.

Table 3. Results of Correlation Analysis

	Firms' value	IC	NWC	Age	Leverage	Growth	Profitability	MEA
Firms' value	1							
IC	-0,033	1						
NWC	-0,559***	0,165	1					
Age	0,091	-0,169	-0,484***	1				
Leverage	0,208*	-0,305**	-0,334***	0,362***	1			
Growth	0,131	-0,003	-0,057	-0,155	0,159	1		
Profitability	0,025	0,553***	0,105	0,080	-0,116	-0,162	1	
MEA	-0,129	-0,181	-0,045	0,095	0,033	-0,241*	-0,150	1

Note: Pearson correlation is significant at * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Table 4 shows that IC and NWC simultaneously had a significant effect on firms' value. The *R-square* shows a value of 0.205 which means that IC and NWC are able to explain 20,5% the firms' value variation. Table 4 also shows that X1 (IC) had no effect on firm value. Thus, H₁, which states that IC has a positive effect on firm value, is rejected. Based on this result, the ownership of intellectual capital in a company had a very small contribution to firm value.

The results of this research failed to support the RBV, which views that a company with high IC will have a competitive advantage that has an impact on increasing firm value (Riahi-Belkaoui, 2003). The challenge for automotive companies lies in increasing innovation in business processes, technology, and project management, which require high capital. It causes the market to pay attention to the return on investment provided rather than the contribution of IC to firm value (Britto et al., 2014). In addition, automotive companies are likely to consider investment in other assets rather than in IC resources to create firm value. The results of this research support the research conducted by Britto et al. (2014) on real-estate companies in Brazil, Celenza et al. (2014) and Dzenopoljac et al. (2017). However, these results contradict research by Nimtrakoon (2015), Sardo et al. (2017), and Smriti & Das (2018).

The results of this research indicate that in assessing a company, investors have not been able to consider the contribution of IC because there are no regulations regarding IC disclosure in the financial statements. IC may not be recognized as an intangible asset because there are no valid and reliable measurements, and its existence cannot be fully disclosed in the financial statements. Because the disclosure of IC is non-mandatory (voluntary) (Schiemann et al., 2015). Therefore, investors cannot notice if there are changes in the efficiency of IC of a company (Soetanto & Liem, 2019). Investments in human capital, which is one of the components of IC, cannot be included in asset capitalization, even though the investment clearly contributes to the balance sheet (Kemenkeu, 2019). This is due to the fact that IC components are not fully disclosed in numerical data, making it difficult to know the exact value of ICs of a company.

Table 4. Statistics Test

Variable	Coefficients	Std. Error
(Constant)	1.055***	0.277
IC	0.014	0.013
NWC	-0.912**	0.315
Age	-1.003	0.004
Leverage	0.618*	0.306
Growth	0.008	0.192
Profitability	-0.301	0.500
MEA	-0.104	0.061
R ²	0.205	
F test	3.103**	

Note: Coefficient significant on * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Further, the result of statistical tests on the NWC showed a negative coefficient value (see Table 4), so H_2 , which states that NWC has a positive effect on firm value, is also rejected. The results of this research failed to support RBV that views company resources as strategic resources to increase firm value (Wernerfelt, 1984). These findings were in line with research conducted by Altaf (2018) and Kokodey et al. (2020), but different from research by Afrifa (2016), Ahangar & Shah (2017), Altaf et al. (2019), Wasiuzzaman (2015), and Laghari & Chengang (2019).

The results show that the automotive and components industry in Indonesia requires an efficient NWC management to increase the firms' value. An efficient NWC makes companies reduce their external fundings allocated on NWC (Kokodey, 2020). Investors have a negative perception when companies allocate the external fundings on NWC because the default risk will be higher (Altaf, 2019; Kokodey, 2020). In addition, the results of this research might also imply that abilities of managements to manage NWC optimally were still lacking. These results were in line with research conducted by Kokodey (2020). Therefore, companies need to apply strategic management to manage NWC efficiently because of its importance in maintaining the continuity of operational liquidity of automotive companies in the short term.

Research conducted by Afrifa (2016), Ahangar & Shah (2017), Altaf et al. (2019), Wasiuzzaman (2015), and Laghari & Chengang (2019) did not fully discover that NWC had a positive effect on firm value. This previous research showed that the NWC would only have a positive effect on firm value to a certain extent or would form an inverted U. This is because the NWC that has exceeded a certain value tends to reduce firm value because it is not favored by investors. Management must also be careful in fulfilling their working capital needs because the more sources of funds are obtained from debt, the higher the interest will be paid and this affects liquidity level of a company. Therefore, management must be able to apply strategic management to manage NWC and maintain its value so that liquidity of company remains at a profitable level.

CONCLUSIONS

This research focuses on the influence of IC and NWC on firm value in the automotive and components industry in Indonesia from 2011 to 2018. The results showed that IC had no effect on firm value, while NWC had a negative effect on firm value. Both results of this research failed to support RBV, which states that a combination of resources can help increase firm value. It indicates that IC and NWC may not be the right combination of resources to help increase firm value. Based on the results of this research, company management should apply strategic management efficiently in managing IC and NWC so that those capitals can provide added value in the future.

Data in this research have an outlier that had been deleted and the data are not complete. Further research can use other treatments like trimming and winsorizing (Kwak & Kim, 2017).

Besides that, this research also specifically is intended for automotive and components industry, hence the next research can use more other industries as samples.

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REFERENCES

- Afrifa, G. A. (2016). Net working capital, cash flow and performance of UK SMEs. *Review of Accounting and Finance*, 15(1), 21–44.
- Ahangar, N., & Shah, F. (2017). Working capital management, firm performance and financial constraints: Empirical evidence from India. *Asia-Pacific Journal of Business Administration*.
- Aktas, N., Croci, E., & Petmezas, D. (2014). Is working capital management value-enhancing? Evidence from firm performance and investments. *Journal of Corporate Finance*, 30(1): 98–113.
- Altaf, N. (2018). Do financial development and law enforceability effect the relationship between net working capital and firm value? Empirical evidence from Asia. *American Journal of Business*, 33(3), 120–132.
- Altaf, N., & Ahmad, F. (2019). Working capital financing, firm performance and financial constraints: Empirical evidence from India. *International Journal of Managerial Finance*.
- Anifowose, M., Rashid, H. M. A., & Annuar, H. A. (2017). Intellectual Capital Disclosure and Coporate Market Value: Does Board Diversity Matter? *Journal of Accounting in Emerging Economies*.
- Anifowose, M., Rashid, H. M. A., Annuar, H. A., & Ibrahim, H. (2018). Intellectual capital efficiency and corporate book value: evidence from Nigerian economy. *Journal of Intellectual Capital*.
- Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management* (Vol. 17, Issue 1, pp. 99–120).
- Bayraktaroglu, A. E., Calisir, F., & Baskak, M. (2019). Intellectual capital and firm performance: an extended VAIC model. *Journal of Intellectual Capital*, 20(3), 406–425.
- Beretta, V., Demartini, C., & Trucco, S. (2018). Does environmental, social and governance performance influence intellectual capital disclosure tone in integrated reporting? *Journal of Intellectual Capital*, 20(1): 100–124.
- Berezinets, I., Garanina, T., & Ilina, Y. (2016). Intellectual capital of a board of directors and its elements: introduction to the concepts. *Journal of Intellectual Capital*, 17(4).
- Berraies, S. (2019). The effect of enterprise social networks use on exploitative and exploratory innovations: Mediating effect of sub-dimensions of intellectual capital. *Journal of Intellectual Capital*, 20(3): 426–452.
- Britto, D. P., Monetti, E., & Rocha Lima, J. da. (2014). Intellectual capital in tangible intensive firms: The case of Brazilian real estate companies. *Journal of Intellectual Capital*, 15(2), 333–348.
- Cagaňová, D., Hlášniková, P. R., Vraňáková, N., & Chlpeková, A. (2019). Intellectual Capital as a Key Factor in the Automotive Industry. *Mobile Networks and Applications*, 24(6), 2024–2031.
- Camodeca, R., Almici, A., & Sagliaschi, U. (2018). Strategic information disclosure, integrated reporting and the role of intellectual capital. *Journal of Intellectual Capital*, 20(1): 125–143.
- Celenza, D., & Rossi, F. (2014). Intellectual capital and performance of listed companies: Empirical evidence from Italy. *Measuring Business Excellence*, 18(1), 22–35.
- Denis, D. J. (2019). SPSS Data Analysis for Univariate, Bivariate, and Multivariate Statistics.
- Deswanto, R. B., & Siregar, S. V. (2018). The associations between environmental disclosures with financial performance, environmental performance, and firm value. *Social Responsibility Journal*, 14(1), 180–193. h
- Dhole, S., Mishra, S., & Pal, A. M. (2019). Efficient working capital management, financial constraints and firm value: A text-based analysis. *Pacific Basin Finance Journal*, 58.
- Duff, A. (2018). Intellectual capital disclosure: evidence from UK accounting firms. *Journal of Intellectual Capital*, 19(4): 768–786.
- Duodu, B., & Rowlinson, S. (2019). Intellectual capital for exploratory and exploitative innovation: Exploring linear and quadratic effects in construction contractor firms. *Journal of Intellectual Capital*, 20(3), 382–405.
- Dzenopoljac, V., Yaacoub, C., Elkanj, N., & Bontis, N. (2017). Impact of intellectual capital on corporate

- performance: Evidence from the Arab region. *Journal of Intellectual Capital*.
- Eades, K.M. (2017). General Motors: 1991 Equity Financing. Darden Business Publishing Cases.
- Eades, K.M. and Gupta, G. (2017). Delphi Corporation. Darden Business Publishing Cases.
- Ginesti, G., Caldarelli, A., & Zampella, A. (2018). Exploring the impact of intellectual capital on company reputation and performance. *Journal of Intellectual Capital*, 19(5), 915–934.
- Hair, Joseph E Jr., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate Data Analysis*, Eighth Edition. Cengage Learning EMEA: United Kingdom.
- Huang, C. C., & Huang, S. M. (2020). External and internal capabilities and organizational performance: Does intellectual capital matter?. *Asia Pacific Management Review*.
- <https://asean.org/businesses-see-asean-economic-integration-more-as-an-opportunity-than-a-threat/?highlight=aec%20is>. “Businesses See ASEAN Economic Integration More As An Opportunity Than A Threat”. Accessed on 10 September 2019.
- http://djpen.kemendag.go.id/app_frontend/admin/docs/publication/9741482465776.pdf. “Ekspor Indonesia di Era MEA”. Accessed on 14 October 2019.
- <https://ipcloseup.com/2019/06/04/21-trillion-in-u-s-intangible-asset-value-is-84-of-sp-500-value-ip-rights-and-reputation-included/>. “\$21 Trillion In U.S. Intangible Assets Is 84% Of S&P 500 Value – Ip Rights And Reputation Included”. Accessed on 24 September 2019.
- <https://kemenperin.go.id/artikel/20409/Dorong-Pengembangan-Mobil-Listrik,-Pemerintah-Ubah-Skema-PPnBM>. “Dorong Pengembangan Mobil Listrik, Pemerintah Ubah Skema PPnBM”. Accessed on 15 September 2020.
- https://kemlu.go.id/portal/id/read/113/halaman_list_lainnya/masyarakat-ekonomi-asean-mea. “Masyarakat Ekonomi ASEAN (MEA)”. Accessed on 9 October 2019.
- http://www.asean-autofed.com/files/AAF_Statistics_2016.pdf. “ASEAN Automotive Federation 2016 Statistics”. Accessed on 15 September 2020.
- http://www.asean-autofed.com/files/AAF_Statistics_2018.pdf. “ASEAN Automotive Federation 2018 Statistics”. Accessed on 15 September 2020.
- <https://www.kemenkeu.go.id/publikasi/artikel-dan-opini/kerjasama-cukai-asean-dalam-rangka-masyarakat-ekonomi-asean/>. “Kerjasama Cukai ASEAN Dalam Rangka Masyarakat Ekonomi ASEAN”. Accessed on 10 September 2019.
- <https://www.kemenkeu.go.id/publikasi/berita/intangible-assets-tantangan-pengelolaan-keuangan-negara-era-digital-40/>. “Intangible Assets, Tantangan Pengelolaan Keuangan Negara Era Digital 4.0”. Accessed on 10 September 2019.
- <https://www.oceantomo.com/intangible-asset-market-value-study/>. “Intangible Asset Market Value Study”. Accessed on 24 September 2019.
- https://www.wipo.int/export/sites/www/sme/en/documents/pdf/ip_panorama_11_learning_points.pdf. “Modul 11: IP Valuation”. Accessed on 10 October 2019.
- Kamath, G.B. (2007). The intellectual capital performance of the Indian banking sector. *Journal of Intellectual Capital*, 8(1): 96-123.
- Kokodey, T., Namkhanova, M., & Alesina, N. (2020). *The Impact of Changes in Working Capital on Firm Value in Bursa Malaysia* (Vol. 138). Springer International Publishing.
- Kwak, S. K., & Kim, J. H. (2017). Statistical data preparation: Management of missing values and outliers. *Korean Journal of Anesthesiology*, 70(4): 407–411.
- Laghari, F., & Chengang, Y. (2019). Investment in working capital and financial constraints: Empirical evidence on corporate performance. *International Journal of Managerial Finance*, 15(2), 164–190.
- Lee, D. E., & Tompkins, J. G. (1999). A Modified Version of the Lewellen and Badrinath Measure of Tobin's Q. *Financial Management*, 28(1), 20–31.
- Li, Y. Q., & Liu, C. H. S. (2018). The role of problem identification and intellectual capital in the management of hotels' competitive advantage-an integrated framework. *International Journal of Hospitality Management*, 75(May), 160–170.
- Lindenberg, E. B., & Ross, S. A. (1981). Tobin's q Ratio and Industrial Organization. *The Journal of Business*, 54(1), 1.
- Loh, L., Thomas, T., & Wang, Y. (2017). Sustainability reporting and firm value: Evidence from Singapore-listed companies. *Sustainability (Switzerland)*, 9(11), 1–12.
- Low, M., Samkin, G., & Li, Y. (2015). Voluntary reporting of intellectual capital: Comparing the quality of disclosures from New Zealand, Australian and United Kingdom universities. *Journal of Intellectual Capital*, 16(4), 779–808.

- Mahoney, J. T., & Pandian, J. R. (1992). The resource-based view within the conversation of strategic management. *Strategic Management Journal*, (13): 363–380.
- Mangena, M., Li, J., Musa Mangena, B. D., & Richard Pike, P. (2016). Intellectual Capital Disclosure Practices and Effects on the Cost of Equity Capital: UK Evidence.
- Meles, A., Porzio, C., Sampagnaro, G., & Verdoliva, V. (2016). The impact of intellectual capital efficiency on commercial bank performance: Evidence from the US. *Journal of Multinational Financial Management*, 36, 64–74.
- Melloni, G. (2015). Intellectual capital disclosure in integrated reporting: An impression management analysis. *Journal of Intellectual Capital*, 16(3): 661–680.
- Molodchik, M. A., Jardon, C. M., & Bykova, A. A. (2019). The performance effect of intellectual capital in the Russian context: Industry vs company level. *Journal of Intellectual Capital*, 20(3), 335–354.
- Nadeem, M., Gan, C., & Nguyen, C. (2017). Does intellectual capital efficiency improve firm performance in BRICS economies? A dynamic panel estimation. *Measuring Business Excellence*, 21(1), 65–85.
- Nimtrakoon, S. (2015). The relationship between intellectual capital, firms' market value and financial performance: Empirical evidence from the ASEAN. *Journal of Intellectual Capital*, 16(3), 587–618.
- Ozkan, N., Cakan, S., & Kayacan, M. (2016). Intellectual capital and financial performance: A study of the Turkish Banking Sector. *Borsa Istanbul Review*, 17(3), 190–198.
- Paek, S., Schuckert, M., Kim, T. T., & Lee, G. (2015). Why is hospitality employees' psychological capital important? The effects of psychological capital on work engagement and employee morale. *International Journal of Hospitality Management*, 50, 9–26.
- Ramadan, B. M., Dahiyat, S. E., Bontis, N., & Al-dalalmeh, M. A. (2017). Intellectual capital, knowledge management and social capital within the ICT sector in Jordan. *Journal of Intellectual Capital*, 18(2), 437–462.
- Riahi-Belkaoui, A. (2003). Intellectual capital and firm performance of US multinational firms: A study of the resource-based and stakeholder views. *Journal of Intellectual Capital*, 4(2), 215–226.
- Sardo, F., & Serrasqueiro, Z. (2017). A European empirical study of the relationship between firms' intellectual capital, financial performance and market value. *Journal of Intellectual Capital*, 18(4), 771–788.
- Schiemann, F., Richter, K., & Günther, T. (2015). The relationship between recognised intangible assets and voluntary intellectual capital disclosure. *Journal of Applied Accounting Research*, 16(2), 240–264.
- Singh, S., Sidhu, J., Joshi, M., & Kansal, M. (2016). Measuring intellectual capital performance of Indian banks: A public and private sector comparison. *Managerial Finance* (Vol. 42, Issue 7).
- Smriti, N., & Das, N. (2018). The impact of intellectual capital on firm performance: a study of Indian firms listed in COSPI. *Journal of Intellectual Capital*, 19(5), 935–964.
- Soetanto, T., & Liem, P. F. (2019). Intellectual capital in Indonesia: dynamic panel approach. *Journal of Asia Business Studies*, 13(2), 240–262.
- Steward, T., & Ruckdeschel, C. 1998. Intellectual Capital: The New Wealth of Organizations (pp. 56–59). pp. 56–59.
- Sugeng, B. (2017). Manajemen Keuangan Fundamental. Yogyakarta: Deepublish.
- Suryani, A. W., & Nadhiroh, A. (2020). Intellectual Capital and Capital Structure Effect on Firms' Financial Performances. 3(2), 127–138.
- Terblanche, W., & Villiers, C.D. (2018). The influence of integrated reporting and internationalisation on intellectual capital disclosures. *Journal of Intellectual Capital*, 20(1): 40–59.
- Tobin, J. (1969). A General Equilibrium Approach To Monetary Theory. *Journal of Money, Credit and Banking*, 1(1), 15–29.
- Ulum, I., Ghozali, I., & Purwanto, A. (2014). Intellectual Capital Performance of Indonesian Banking Sector: A Modified VAIC (M-VAIC) Perspective. *Asian Journal of Finance & Accounting*, 6(2), 103.
- Vishnu, S., & Gupta, V. K. (2014). Intellectual capital and performance of pharmaceutical firms in India. *Journal of Intellectual Capital*, 15(1), 83–99.
- Wang, Q., Sharma, U., & Davey, H. (2016). Intellectual capital disclosure by Chinese and Indian information technology companies: A comparative analysis. *Journal of Intellectual Capital*, 17(3): 507–529.
- Wasiuzzaman, S. (2015). Working capital and firm value in an emerging market. *International Journal of Managerial Finance*, 11(1), 60–79.
- Wernerfelt, B. (1984). A Resource-Based View of the Firm. *Strategic Management Journal*, 5(2), 171–180.
- Widarjono, Agus. (2018). Ekonometrika Pengantar dan Aplikasinya Disertai Panduan Eviews (Ed. 5). Yogyakarta: UPP STIM YKPN.

- Wolfe, J., & Aidar Sauaia, A. C. (2003). The Tobin q as a business game performance indicator. *Simulation and Gaming*, 36(2), 238–249.
- Woodcock, J., & Whiting, R. H. (2009). Intellectual Capital Disclosures by Australian Companies. *Journal of Economic*, 1–31.
- Xu, B., Magnan, M. L., & André, P. E. (2007). The stock market valuation of R&D information in biotech firms. *Contemporary Accounting Research*, 24(4), 1291–1318.
- Zakery, A., & Afrazeh, A. (2015). Intellectual capital based performance improvement, study in insurance firms. *Journal of Intellectual Capital*, 16(3), 619–638.
- Zéghal, D., & Maaloul, A. (2010). Analysing value added as an indicator of intellectual capital and its consequences on company performance. *Journal of Intellectual Capital*, 11(1), 39–60.