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# The Mediating Role of Board Size and Working Capital Management in Corporate Governance on Firm Performance

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## Abstract

**Purpose:** This study aimed to test the relationship between corporate governance and firm performance, as well as the mediating role of board size and working capital management in the relationship. The sample in this study are manufacturing companies listed on the Indonesia Stock Exchange for the period of 2017-2021.

**Methodology:** The panel regression method was used to analyse research data. In this study, corporate governance was proxied by independent commissioners and ownership structure, while firm performance was measured by ROA and ROE. Meanwhile, the mediating variable, board size was measured by the number of board of directors and working capital management was measured by average payment period.

**Findings:** The results showed that independent commissioners had a significant positive effect as measured by ROA and ROE. While ownership structure also had a significant positive effect as measured by ROA. In addition, working capital management was proven to have a partial mediating role in the relationship between independent commissioners and ROA. However, working capital management was not proven to have a mediating role in the relationship between ownership structure and firm performance, and board size was also not proven to have a mediating role.

**Practical Implications:** This study helps companies understand the significance of corporate board structure and ownership in the effort of achieving a good corporate governance to maximize firm performance.

**Originality/Value:** This study contributes to studies on the effect of corporate governance on firm performance, where the novelty lies in working capital management and board size as mediating variables in the relationship between corporate governance and firm performance.

## Introduction

Every company has a goal. Generally, the goal of a company is to generate profit as high as possible with minimum resources. To achieve it's goal, a company must have a good management to handle its resources and to ensure that the company's operational activities are going well, thus rendering a company's ability to survive in a competitive industry. Therefore, companies will be encouraged to improve their performance to compete in the industry and assume their continuity. Good performance generate good results that can be used as a basis for future developments. While poor performance puts the company in a difficult position to maintain its existence. Therefore, the company's performance is very important in maintaining the continuity of the company and developing further (Ekadjaja et al., 2021).

The global economic crisis in mid-1997 caused by poor corporate governance resulted in low performance and even bankruptcy in several countries. The crisis spurred the awareness of the importance of corporate governance in Asia, including Indonesia. Inadequate accounting rules and standards, unregulated capital markets, lack of attention to the rights and interests of minority shareholders, and unsettled financial audits reflect weak governance. Good corporate governance (GCG) will provide benefits for the company's shareholders as well as a positive impact on the country's economic development. Corporate governance is associated with the relationship between employees, managers, the board of directors, shareholders, both controlling and minority, as well as other shareholders. Corporate governance refers to how operations, rules, supervision and control of a company should be conducted (Wahyudin & Solikhah, 2017).

In Indonesia, scholars and practitioners who are interested in the topic of corporate governance have established various forums, such as the Indonesian Institute for Corporate Governance (IICG), the Forum for Corporate Governance in Indonesia (FCGI), and others. The implementation of corporate governance in Indonesia is overseen by IICG and has been going on since 2001. In 2002, IICG conducted a study showing that regulatory compliance is the main reason why companies implement Good Corporate Governance (GCG) (Wahyudin & Solikhah, 2017).

From an investor's perspective, corporate governance is defined as a dedication to running a company and a guarantee to share a proportionate return on capital investment. Company's performance and it's ability to enter the capital market are directly affected by corporate governance. A company's levels of governance can help small companies in emerging markets because they can support differentiation between firms (Shahid et al., 2020).

Because of such issues and importance of corporate governance, this study is conducted to examine the impact of corporate governance on firm performance and its relationship when mediated by board size and working capital management. This study is beneficial for companies aiming to improve their financial performance through the implementation of good corporate governance (GCG). The novelty of this study is to provide new insights of the mediating variables of working capital management and board size in the relationship between corporate governance and firm performance.

## Literature Review

### Agency Theory

The beginning of corporate governance practices may be linked to the agency theory. An agency relationship is a contractual relationship between the owner as the principal and the manager or agent employed, where agent is given the authority to act on behalf of the principal and make decisions. However, the agent's actions are not always in the interests of the principal, and thus, conflicts and agency costs arise (Jensen & Meckling, 1976). There are 3 types of assumptions underlying agency theory. Firstly, assumptions of human which indicate that humans have personal interest, are risk averse, and have limited rationality. Secondly, organizational assumptions which indicate members of organization have goal conflict and there's information asymmetry between principals and agents. Lastly, information assumptions indicating "information is a commodity which can be purchased" (Eisenhardt, 1989).

## Firm Performance

Performance is a measure of company's ability in achieving its goals and is the result of the interaction between company's efficiency and effectiveness (Kanakriyah, 2021). Economists consider performance as an engine in determining the social, economic, and political aspects of a company. To survive in a competitive business environment, every company must operate according to performance conditions (Taouab & Issor, 2019). Performance directly focuses on events that are able to impact the financial statements. An entity really need to put importance on positive financial performance in order to maintain its existence as a worthy investment. Performance can be a reference and prospect in the future, and also a development (Yopie & Lim, 2021).

In this study, Return on Assets (ROA) and Return on Equity (ROE) are used as firm performance measurement as it shows company's profitability. ROA and ROE are reliable metrics for assessing company's performance, thus they are popular metrics frequently used by analysts. ROA reflects company's efficiency in utilizing its resources or assets to generate profits, meanwhile ROE reflects how effective company is in managing its shareholder investments to generate profits (Kanakriyah, 2021). The formula is as follows:

ROA = Net profit / Total assets

ROE = Net profit / Equity

## Corporate Governance

Governance is a framework for monitoring, regulating and controlling the company that allows the implementation of alternative internal and external mechanisms to achieve company goals. The purpose of corporate governance is to manage the interests of shareholders and company stakeholders (Saha et al., 2018). Explaining and publishing Good Corporate Governance standards is very important if a company wish to attract capital investment, reduce risk and improve firm performance (Itan, 2020). With Good Corporate Governance, companies are able to reduce the cost of capital and help with easing access to capital markets, furthermore it also reassures shareholders and other stakeholders that their rights are protected (OECD, 2016) .

In this study, Corporate governance is proxied by independent commissioners and ownership structure.

### Independent Commissioners

Indonesia adopted two-tier board structure, which consist of board of commissioner and board of director. According to National Committee on Governance Policy (KNKG) (2006), as a company organ, commissioners is in charge of and responsible for supervising and advising directors, and also ensuring company implements GCG. However, they don't have the rights to make operational decisions. According to Financial Services Authority Regulation Number 33/POJK.04/2014, public companies listed on the stock exchange must have at least 2 members of commissioners, of which 1 member is an independent commissioner. In GCG implementation, independent commissioner strengthens the supervisory function of commissioners (Usman et al., 2021). The concept of a non-executive director or independent director in a one-tier board, has the same function as an independent commissioner in a two-tier board (Hopt & Leyens, 2021). Following Edi and Felicia (2022), Independent commissioners is measured with the number of independent members, however directors are changed to commissioners as independent directors were no longer obligated as of 2018.

### Ownership Structure

Ownership structure is one of the elements of corporate governance that holds an important role in protecting shareholders against manager's exploitations (Ali et al., 2018). Ownership in Asian countries tends to be concentrated in a group of shareholders (Ullah et al., 2017), which results in strong monitoring towards manager's actions, reducing agency costs, and enhance firm's performance. In an environment where laws are weak and politics are unstable, ownership concentration is valued by companies (Waheed & Malik, 2019). Therefore, the ownership structure studied is the concentration of ownership. Following Merendino and Melville (2019), ownership concentration is measured by the largest shareholding percentage in the company.

### Board Size

Board of directors or board size is the size of board of directors in a company. National Committee on Governance Policy (KNKG) (2006) defined directors as "an organ of the company that is collegially tasked and responsible in managing the company". Each director can make decisions according to their divisions of task and authority when carrying out their duty. Directors with management function have 5 main tasks, namely management, risk management, internal control, and social responsibility. According to Financial Services Authority Regulation Number 33/POJK.04/2014, public companies listed on the stock exchange must have at least 2 members of directors. Board size is measured by the number of board of directors in a company, in accordance with studies by Yopie and Andriani (2021).

### Working Capital Management

Efficient current assets and current liabilities management is working capital management. Working capital management ensures smooth day-to-day operations, such as short-term financing requirements and short-term current asset management (Imran Khan & Kouser, 2020). Working capital management is important as its decisions have a direct impact on the level of risk, profit, and value of company (Dalayeen, 2017). One of the most used measurement for payable management is Average Payment Period (APP), which refer to the period company takes to settle debts to creditors (Kayani et al., 2021). The formula is as follows:

APP = (Trade payables / Cost of goods sold) x 365

### Independent Commissioners and Firm Performance

Independent commissioners as external commissioners have incentives for agency monitoring. Independent commissioners possess monitoring role that can influence and encourage manajer's behavior to improve performance (Hermuningsih et al., 2020). In the perspective of agency theory, independent commissioner serves as mediator between agent and principal and also act on behalf of the principal to supervise agents. Independent commissioners don't have any relationship with shareholders or manajers and are free from conflict of interest, thus the decisions taken are in the interests of the company (Usman et al., 2021). This corresponded with the study by Harjito et al. (2021), Chabachib et al. (2020), and Dzingai & Fakoya (2017), where independent commissioner was found to have positive impact on firm performance. This shows that commissioners who are independent can be objective in exercising monitoring function.

However, study by Budiman & Krisnawati (2021) found that independent commissioner was not able to affect firm performance as it may just be appointed for the sake of formality or for the purpose of complying to regulation. Putri & Zarefar (2020) and Rachmadianti & Iswajuni (2020) also found identical result, where independent commissioners are only minority and there's other commissioners and committees, thus there's not enough influence on firm performance. Based on the statement, the following hypothesis is developed:

$H_{1a}$: Independent commissioner has a positive effect on ROA

$H_{1b}$: Independent commissioner has a positive effect on ROE

### Ownership Structure and Firm Performance

According to Rashid (2020), to avoid the use of funds by managers on unprofitable projects, investors seek to establish and maintain an ownership structure that is concentrated in a group of people so it enables them to monitor the actions of managers to reduce agency costs and improve firm performance. Jensen and Meckling (1976), also stated that if the interests of management and shareholders can be aligned through changes in ownership, then ownership concentration can affect the increase in firm value. This corresponded with the study by Kao et al. (2018), Ciftci et al. (2019), and Nashier & Gupta (2020), where ownership concentration was found to have positive impact on firm performance. This shows that concentrated ownership has strong monitoring function, thus leading to a better firm performance.

However, contrasting to the findings above, Ullah et al. (2017) found that dominant shareholders may also seek private benefit by expropriating firm's resources and exploit minority shareholders. The higher the control rights, the higher the potential of dominant shareholders tunneling resources at the cost of minority shareholders. Additionally, the study by Merendino & Melville (2019) found that ownership concentration was not proven to have impact on firm performance. Based on the statement, the following hypothesis is developed:

$H_{2a}$: Ownership structure has a positive effect on ROA

$H_{2b}$: Ownership structure has a positive effect on ROE

### Independent Commissioners, Ownership Structure, and Firm Performance with Board Size as Mediator

The board of directors plays a very important role in terms of corporate governance as the organ of company responsible for company's operational activities (Hermuningsih et al., 2020). A large size of board of director can reduce the company's business risk because board members have sufficient expertise, knowledge, and experience. However, too many board members can cause conflict within the company because it will make coordination between members difficult. On the other hand, small board size makes it easier for managers to control. Therefore, the company must determine the right size of the board to improve the company's performance (Vu et al., 2017).

The effectiveness of company's performance depends on whether the board of directors carry out their management duty according to GCG principles. Increasing the size of board of directors means adding more person in supervising managers and ensuring shareholder interests are followed (Herdjiono & Sari, 2017). Therefore, independent commissioners that are only a minority as mentioned earlier, can be compensated with the size of board of directors.

Shareholders are incapable of directly influencing management, thus they may use their voting rights to change and reselect the company's board structure if the current board is not following their interests (Rashid, 2020). Previous study by Rashid (2020) has found that mediating effect of board size was proven to impact ownership structure and firm performance, meanwhile study by Shahid et al. (2020) has not proven board size to have any mediating role. Based on the statement, the following hypothesis is developed:

$H_{3a}$: Board size mediates the relationship between independent commissioner and ROA

$H_{3b}$: Board size mediates the relationship between independent commissioner and ROE

$H_{3c}$: Board size mediates the relationship between ownership structure and ROA

$H_{3d}$: Board size mediates the relationship between ownership structure and ROE

## Independent Commissioners, Ownership Structure, and Firm Performance with Working Capital Management as Mediator

Working capital management and corporate governance affect firm performance simultaneously and individually. Working capital management affects the short-term performance, while corporate governance affects the long-term performance of a company (Kayani et al., 2019). According to Naz et al. (2022), managers with risk averse behavior may maintain a high balance of working capital, which contrary to the shareholder interests, thus resulting in agency problem. The efficiency of working capital depends on the efficiency of management, whereas efficiency in management is a result from an effective corporate governance. The decision making on working capital policy is under the authority of directors. Study by Rehman et al. (2017) found that independent boards were able to establish a tight working capital policy due to their strong monitoring capabilities. Furthermore, Khan et al. (2021) found that ownership concentration were also able to affect working capital efficiency due to their ability to influence management behaviors.

Managing an adequate level of working capital is crucial to ensure a smooth operational activities. A company may need to spend more on operations compared to other company in the same industry if working capital is not managed efficiently (Naz et al., 2022). Account payable or payment management as measured by Average Payment Period (APP) is one of the often used proxies in measuring working capital management. Prior study by Kayani et al. (2021) found that APP has a positive relationship with firm performance, meaning delayment in payments to suppliers will positively affect profitability as the cash can be put into new investment or used in inventory replenishment. Meanwhile, Imran Khan & Kouser (2020), Kusuma & Bachtiar (2018), and Kasozi (2017) found contrasting result, stating companies that made prompt payment to suppliers perform better and payment period is shorten to improve company's image.

Study by Naz et al. (2022) found that working capital management was significant in mediating corporate governance and firm performance. Furthermore, Shahid et al. (2020) found that working capital management was significant in mediating independent commissioners and ownership structure on firm performance, while Khan et al. (2021) found that working capital management only mediates ownership concentration and firm performance. Based on the statement, the following hypothesis is developed:

$H_{4a}$: Working capital management mediates the relationship between independent commissioner and ROA

$H_{4b}$: Working capital management mediates the relationship between independent commissioner and ROE

$H_{4c}$: Working capital management mediates the relationship between ownership structure and ROA

$H_{4d}$: Working capital management mediates the relationship between ownership structure and ROE

The following is the conceptual framework that describes the relationships of each variable in this study.

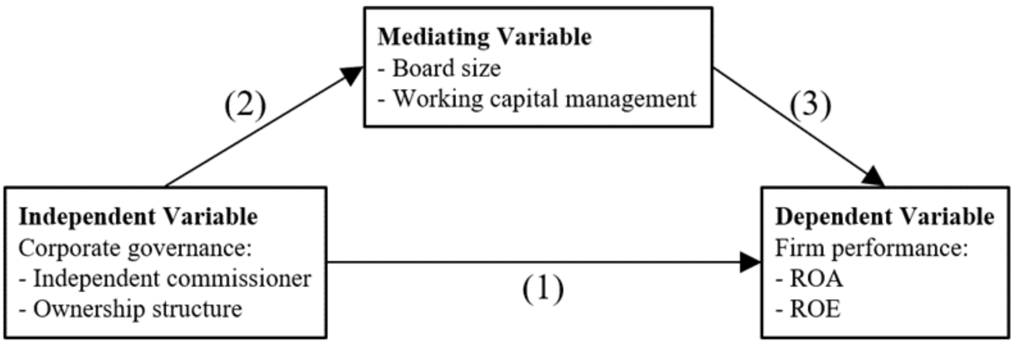


**Figure 1: Conceptual Framework**

**Table 1:** Relevant Literature

| Author | Sample | Findings |
|---|---|---|
| Harjito et al. (2021) | 70 family companies listed on Indonesia Stock Exchange during the period of 2014-2018 | Impact of independent commissioners on ROE is positive |
| Chabachib et al. (2020) | 120 non-financial companies listed on Indonesia Stock Exchange in 2018 | Impact of Independent commissioners on ROA is positive |
| Dzingai & Fakoya (2017) | 10 mining companies listed on Johannesburg Stock Exchange (JSE), Socially Responsible Investment (SRI) Index during the period of 2010-2015 | Board Independence have a positive impact on ROE |
| Budiman & Krisnawati (2021) | 18 transportation sub-sector companies listed on Indonesia Stock Exchange during the period of 2017-2019 | Impact of Independent commissioners on ROA is not significant |
| Putri & Zarefar (2020) | Manufaturing companies listed on Indonesia Stock Exchange during the period of 2015-2018 | Independent commissioners have no significant impact on Tobin's Q |
| Rachmadianti & Iswajuni (2020) | 112 manufaturing companies listed on Indonesia Stock Exchange during the period of 2015-2017 | Independent commissioners have no significant impact on ROA |
| Kao et al. (2018) | Companies listed on Taiwan Stock Exchange during the period of 1997-2015 | Independent directors and block-holder's ownership have a positive impact on ROA and ROE |
| Ciftci et al. (2019) | 210 companies listed on Istanbul Stock Exchange during the period of 2010-2013 | Impact of Ownership concentration on ROA and Tobin's Q is positive |
| Nashier & Gupta (2020) | 1.392 non-financial companies listed on Bombay Stock Exchange during the period of 2007-2014 | Impact of Ownership concentration on ROA and Tobin's Q is positive |
| Ullah et al. (2017) | 184 non-financial companies listed on the Karachi Stock Exchange during the period of 2004-2012 | Impact of Ownership concentration on ROA is negative, while board Independence impact ROA and Tobin's Q positively |
| Merendino & Melville (2019) | 65 companies listed on the STAR segment of the Italian Stock Exchange during the period of 2003-2015 | Ownership concentration have significant impact on ROA |
| Rashid (2020) | Companies listed on Dhaka Stock Exchange during the period of 2015-2017 | Board size partially mediate ownership structure on firm performance measured by ROE and Tobin's Q |

| | | |
|---|---|---|
| Shahid et al. (2020) | 32 food companies and sugar mills listed at Pakistan Stock Exchange during the period of 2014-2017 | Board size not proven to mediate independent commissioners and ownership structure on firm performance measured by ROA, ROE, and sales growth, while working capital management was significant in mediating corporate governance and firm performance |
| Rehman et al. (2017) | 760 companies listed on Shanghai Stock Exchange during the period of 2001-2012 | Board independence have a negative impact on working capital management |
| Khan et al. (2021) | 427 non-financial companies listed on Pakistan Stock Exchange during the period of 2008-2015 | Impact of Ownership concentration on working capital management is significant and working capital management mediate ownership concentration on ROA |
| Kusuma & Bachtiar (2018) | Manufacturing companies listed on LQ45 index of Indonesia Stock Exchange during the period of 2010-2014 | Impact of Working capital management measured by APP on ROA is negative |
| Kayani et al. (2021) | Companies listed on Australia and Hong Kong Stock Exchange during the period of 2007-2016 | Impact of Working capital management measured by APP on firm performance is positive |
| Imran Khan & Kouser (2020) | 159 non-financial companies listed on Pakistan Stock Exchange during the period of 2008-2017 | Impact of Working capital management measured by APP on Tobin's Q is negative |
| Kasozi (2017) | 69 manufacturing companies listed on Johannesburg Stock Exchange during the period of 2007-2016 | Impact of Working capital management measured by APP on ROA is negative |
| Naz et al. (2022) | 179 non-financial companies listed on Pakistan Stock Exchange during the period of 2009-2018 | Working capital management mediate corporate governance on firm performance |

***Source:*** *Processed data (2022)*

As seen on Table 1, sample of studies are mostly on manufacturing and non-financial companies. This study also focuses on manufacturing sector as it is one of the largest contributors to Indonesia's economy and growth. Studies about mediating role of board size and working capital management is still a few in number, thus this study is conducted to contribute to the topic of the study.

## Research Methodology

The data in study was secondary data, namely the annual financial statements obtained from the official website of the Indonesia Stock Exchange (IDX) from the period of 2017 to 2021. The study sample focuses on manufacturing sector companies that had published annual financial reports during the observation period and had a complete data as required in the study. The total number of companies listed on the Indonesia Stock Exchange was 786 companies, of which there was 191 manufacturing sector companies. From the total population of these companies, the number of companies that meet the criteria of the research sample was 114 companies, as shown on Table 2.

**Table 2: Research Sample and Population**

| Description | Total |
|---|---|
| Companies listed on the Indonesia Stock Exchange (IDX) | 786 |
| Companies other than the manufacturing sector | (593) |
| Companies delisted from the Indonesia Stock Exchange (IDX) | ( 2) |
| Companies with incomplete annual reports | ( 42) |
| Companies financial statements in dollar | ( 30) |
| Companies with incomplete data | ( 5) |
| Total samples that meet the criteria | 114 |
| Observation period | 5 |
| Total observation data | 570 |

*Source: Processed data (2022)*

This study used the panel regression method, which is a method of regression by combining cross section data and time series data. Panel regression can improve model fit and reduce errors from the resulting regression model. Panel regression can also improve the accuracy of prediction results. The regression was employed with Eviews 10. The test was divided into 2 step, namely the best model selection and hypothesis testing. The model selection consists of Chow test, Hausman test, and Lagrange Multiplier (LM) test. While, hypothesis testing consists of F test and t test.

In this study, the author uses the method introduced by Baron and Kenny (1986) in testing for mediation. There are 3 equations that need to be estimated to test for mediation:

1. Regressing independent variable against dependent variable
2. Regressing independent variable against mediating variable
3. Regressing independent and mediating variable against dependent variable

According to Baron and Kenny (1986), there's 2 conditions that must be met in order for a mediation to be established:

1. Regression 1, 2, and 3 must all result in significant relationship, otherwise the test for mediation can't be continued
2. Coefficient of independent variable to dependent variable on regression 3 must be less than coefficient of regression 1

Full mediation occurs if the independent variable is no longer significant when the mediator is controlled, whereas it is a partial mediation if independent remains significant.

## Findings and Discussion

**Table 3: Descriptive Statistics Result**

| Variables | N | Minimum | Maximum | Mean | Std. Dev. |
|---|---|---|---|---|---|
| Return on Assets (ROA) | 570 | -2,6410 | 0,9210 | 0,0398 | 0,1671 |
| Return on Equity (ROE) | 570 | -3,4079 | 4,9048 | 0,0754 | 0,4487 |
| Independent Commissioners (IC) | 570 | 1,0000 | 5,0000 | 1,6597 | 0,8020 |
| Ownership Structure (OWN) | 570 | 0,0933 | 0,9994 | 0,5720 | 0,2312 |
| Board Size (BSize) | 570 | 2,0000 | 14,0000 | 4,8246 | 2,1954 |
| Working Capital Management (WCM) | 570 | 0,0703 | 1032,2657 | 53,4970 | 59,9481 |

***Source:*** *Processed data (2022)*

The descriptive statistics in Table 3 are the presentation of information consisting of the amount of data tested, the minimum value, the maximum value, the average value, and the standard deviation value with the aim of concluding and clarifying the results of statistical tests. Based on the results, ROA has a minimum value of -2,64, a maximum value of 0,92, and a mean value of 0,04. Meanwhile, ROE has a minimum value of -3,41, a maximum value of 4,91, and a mean value of 0,08. The result of ROA and ROE shows that the performance of companies in this sample is still low, where there are a number of companies that are still experiencing high losses. The maximum value of ROE is also the result of a certain company experiencing both losses and capital deficiency.

The number of independent commissioners in companies have a minimum value of 1, maximum value of 5, and a mean value of 2. The mean value is higher than the standard deviation, indicating that the number of independent commissioners in manufacturing companies is quite high and most companies have complied with the Financial Services Authority Regulation. Furthermore, ownership structure has a minimum value of 0,09 and a maximum value of 0,99. The mean value of 0,57 is higher than the standard deviation which indicate that listed companies in the manufacturing sector have a high concentration of ownership.

Table 3 also shows that listed companies in the manufacturing sector have a board size with a mean value of 4, a minimum of 2 and a maximum of 14, this indicates all companies have complied with the Financial Services Authority Regulation. Working capital management was measured by calculating the average debt payment period and based on the results, the earliest payment was less than 1 day, while the latest payment was 1,032 days. The mean number indicates that the companies are able to pay debts in about 53 days.

**Table 4: Best Model Test Result**

| Variable | Chow Test | Hausman Test | LM Test | Conclusion |
|---|---|---|---|---|
| IC & OWN → ROA | 0,0000 | 0,1163 | 0,0000 | REM |
| IC & OWN → ROE | 0,0000 | 0,4438 | 0,0000 | REM |
| IC & OWN → BSize | 0,0000 | 0,0000 | | FEM |
| IC & OWN → WCM | 0,0000 | 0,0147 | | FEM |
| IC, OWN, & BSize → ROA | 0,0000 | 0,2324 | 0,0000 | REM |
| IC, OWN, & BSize → ROE | 0,0000 | 0,7131 | 0,0000 | REM |
| IC, OWN, & WCM → ROA | 0,0000 | 0,1634 | 0,0000 | REM |
| IC, OWN, & WCM → ROE | 0,0000 | 0,6574 | 0,0000 | REM |

***Source:*** *Processed data (2022)*

Model selection consists of Chow test, Hausman test, and Lagrange Multiplier (LM) test. Chow test aims to choose the best model between Pooled Least Square (PLS) and Fixed Effect Model (FEM). If the probability value is more than 0,05, PLS method is selected, whereas if the probability value is less than 0,05, FEM method is selected. As seen in Table 4, the probability value is less than 0,05, thus FEM is selected. Next step is Hausman test, which aims to choose the best model between Random Effect Model (REM) and Fixed Effect Model (FEM). If the probability value is more than 0,05, REM method is selected, whereas if the probability value is less than 0,05, FEM method is selected.

The result of Hausman test shows that there are 2 tests that resulted in less than 0,05, namely the test of independent commissioner and ownership structure variable on board size and working capital management variable, thus the method chosen is FEM. Meanwhile, all other tests resulted in a probability value of more than 0,05, meaning REM is selected, thus it's necessary to continue with Lagrange Multiplier (LM) test to choose the best model between Pooled Least Square (PLS) and Random Effect Model (REM). If the probability value is more than 0,05, PLS method is selected, whereas if the probability value is less than 0,05, REM method is selected. Based on the LM test, the final result on best model selection is REM, since the probability is less than 0,05. REM method is selected for all regression, other than the regression of independent commissioner and ownership structure variable on board size and working capital management variable, where FEM is selected.

**Table 5: F Test Result**

| Variable | F-statistic | Prob. | Conclusion |
|---|---|---|---|
| IC & OWN → ROA | 5,6327 | 0,0038 | Significant |
| IC & OWN → ROE | 6,4683 | 0,0017 | Significant |
| IC, OWN, & BSize → ROA | 4,2754 | 0,0054 | Significant |
| IC, OWN, & BSize → ROE | 4,4360 | 0,0043 | Significant |
| IC, OWN, & WCM → ROA | 7,9067 | 0,0000 | Significant |
| IC, OWN, & WCM → ROE | 9,6043 | 0,0000 | Significant |

***Source:*** *Processed data (2022)*

F test is used to test the effect of independent variable on dependent variable simultaneously. Based on Table 5 result, corporate governance measured by independent commissioner and ownership structure, as well as board size and working capital management simultaneously have a significant effect on ROA and ROE.

**Table 6: t Test Result of Regression 1**

| Variable | Coefficient | T-Values | P-Values | Conclusion* |
|---|---|---|---|---|
| Dependent: ROA | | | | |
| C | -0,0481 | -1,7468 | 0,0812 | |
| IC | 0,0214 | 2,0730 | 0,0386 | Significant + |
| OWN | 0,0916 | 2,4734 | 0,0137 | Significant + |
| Dependent: ROE | | | | |
| C | -0,1599 | -2,0415 | 0,0417 | |
| IC | 0,0937 | 3,2307 | 0,0013 | Significant + |
| OWN | 0,1395 | 1,3206 | 0,1872 | Insignificant |

**Significant: T-Values > 1,96 and P-Values < 0,05*
***Source:*** *Processed data (2022)*

Regression 1 is the first equation of Baron and Kenny (1986) in testing for mediation, that is regressing independent variable against dependent variable. Based on the result of regression 1 on Table 6, IC has a significant positive effect on both ROA and ROE, thus $H_{1a}$ and $H_{1b}$ are supported. This result corresponded with the study by Saha et al. (2018), Ullah et al. (2017), and Arora & Bodhanwala (2018). It is in line with agency theory, indicating that independent commissioners have an important role in management monitoring mechanism. Board structure that are dominated by independent commissioners will create an image of a company with good corporate governance, thereby increasing reputation and also increasing the reliability of company's financial disclosure (Palaniappan, 2017).

Although independent commissioners as outside commissioners have less information, they're able to carry out objective monitoring compared to directors who are insider. It is due to the fact that independent commissioners don't have any relationship with ownership or management whatsoever, whereas directors tend to focus on their own benefit and exploit company. With objective monitoring, agency costs and resources exploitation are reduced (Utama & Utama, 2019).

The result of regression 1 also shows that OWN has a significant positive effect on ROA, but insignificant effect on ROE, therefore $H_{2a}$ is supported, while $H_{2b}$ is rejected.

This result match with the findings by Allam (2018), Juanda (2018), and Ciftci et al. (2019). This result is in line with agency theory, where the ownership concentration is proven to be capable of aligning shareholders and managers interest through its strong monitoring function, hence decreasing agency costs and improve firm's performance (Kao et al., 2018).

**Table 7: t Test Result of Regression 2**

| Variable | Coefficient | T-Values | P-Values | Conclusion* |
|---|---|---|---|---|
| Dependent: BSize | | | | |
| C | 4,8104 | 12,8662 | 0,0000 | |
| IC | 0,4321 | 4,4842 | 0,0000 | Sıgnificant + |
| OWN | -1,2290 | -2,0693 | 0,0391 | Significant - |
| Dependent: WCM | | | | |
| C | 120,7454 | 4,7841 | 0,0000 | |
| IC | -15,9638 | -2,4542 | 0,0145 | Significant - |
| OWN | -71,2540 | -1,7772 | 0,0762 | Insignificant |

**Significant: T-Values > 1,96 and P-Values < 0,05*

***Source:*** *Processed data (2022)*

Regression 2 is the second equation of Baron and Kenny (1986) in testing for mediation, that is regressing independent variable against mediating variable. The results in regression 2 shows that IC have a positive impact on BSize, while OWN have a negative impact on BSize. Since both variables are significant on regression 2, then it may be proceeded to regression 3. The results in regression 2 also shows that IC have a significant impact on WCM, therefore it may be analyzed further for mediation in regression 3. Meanwhile, OWN have insignificant impact, thus working capital management fail to mediate the relationship between ownership structure and firm performance, as it fails to meet condition no. 1 of establishing mediation, which is all variable must be significant. Consequently, $H_{4c}$ and $H_{4d}$ are rejected.

**Table 8: t Test Result of Regression 3**

| Variable | Coefficient | T-Values | P-Values | Conclusion* |
|---|---|---|---|---|
| Dependent: ROA | | | | |
| C | -0,0639 | -2,1049 | 0,0357 | |
| IC | 0,0139 | 1,1615 | 0,2459 | Insignificant |
| OWN | 0,0948 | 2,5576 | 0,0108 | Significant + |
| BSize | 0,0055 | 1,2271 | 0,2203 | Insignificant |
| Dependent: ROE | | | | |
| C | -0,1845 | -2,1214 | 0,0343 | |
| IC | 0,0825 | 2,4605 | 0,0142 | Significant - |
| OWN | 0,1446 | 1,3608 | 0,1741 | Insignificant |
| BSize | 0,0083 | 0,6629 | 0,5077 | Insignificant |
| Dependent: ROA | | | | |
| C | -0,0271 | -0,9849 | 0,3251 | |
| IC | 0,0212 | 2,1035 | 0,0359 | Significant + |
| OWN | 0,0947 | 2,6305 | 0,0088 | Significant + |
| WCM | -0,0004 | -3,4410 | 0,0006 | Significant - |
| Dependent: ROE | | | | |
| C | -0,2268 | -2,0918 | 0,0039 | |
| IC | 0,0968 | 3,4173 | 0,0007 | Significant + |
| OWN | 0,1281 | 1,2461 | 0,2132 | Insignificant |
| WCM | 0,0013 | 3,8779 | 0,0001 | Significant + |

**Significant: T-Values > 1,96 and P-Values < 0,05*
***Source:*** *Processed data (2022)*

Regression 3 is the third equation of Baron and Kenny (1986) in testing for mediation, that is regressing independent variable and mediating variable against dependent variable. The third equation aims to test whether independent variable still affects dependent variable when controlled by the mediating variable. The result of regression 3 shows that BSize has no significant effect on ROA and ROE, meaning board size couldn't mediate the relationship of independent commissioner and ownership structure to firm performance, as it fails to meet condition no. 1 of establishing mediation, which is all variable must be significant, hence $H_{3a}$, $H_{3b}$, $H_{3c}$, and $H_{3d}$ are rejected. This result agree with the study by Shahid et al. (2020). This shows that independent commissioners may be able to influence board size, however it's not enough to impact firm's performance. Furthermore, ownership concentration is not proven to have capability to influence board structure that follows shareholder interests, hence there's no impact to firm's performance.

The result of regression 3 shows that WCM have a significant effect on ROA and ROE, hence condition no. 1 is met. The test result also shows that the coefficient of IC to ROA in regression 3 is less than in regression 2 by 0,0002 (0,0212 < 0,0214), indicating working capital management established mediation as condition no. 2 is met, however since independent commissioner variable is still significant when controlled, then working capital management partially mediate the relationship between independent commissioner and ROA. The coefficient of IC to ROE in regression 3 is higher than in regression 2 by 0,0031 (0,0968 > 0,0937), hence working capital management fail to establish mediation as it fails to meet condition no. 2.

It can be concluded that $H_{4a}$ is supported, while $H_{4b}$ is rejected. This result corresponded with the study by Shahid et al. (2020). This study result suggests that strong monitor from independent commissioners are able to ensure appropriate working capital policy (Rehman et al., 2017), where the payment period is kept low to establish a good financial performance image (Imran Khan & Kouser, 2020; Kasozi, 2017). Meanwhile, ownership concentration is not proven to have capability to influence directors to manage working capital efficiently, hence there's no mediation to firm's performance.

## Conclusions

This study analyzes the influence of independent commissioner and ownership structure as corporate governance measurement on firm performance, as well as the mediating effect of board size and working capital management. The results show that independent commissioner has a significant positive effect on firm performance as measured by ROA and ROE, meanwhile ownership structure has a significant positive effect on firm performance as measure by ROA, but insignificant effect on firm performance as measure by ROE. Furthermore, it is found that working capital management partially mediate the relationship between independent commissioner and firm performance as measured by ROA. However, working capital management fail to mediate the relationship between ownership structure and firm performance.

Board size is also not shown to have mediating role in the relationship between independent commissioner, ownership structure and firm performance.

Therefore, it is concluded that the increase in independent commissioner and concentration of ownership may increase the monitoring on management, thus minimizing agency cost and improve firm performance. Furthermore, working capital that is managed effectively by the company's directors is able to improve firm's performance, therefore independent commissioners are crucial in ensuring the efficiency of working capital management.

Based on the findings, it is suggested that companies should increase the number of independent commissioners that are free from conflict of interest and have the ability to carry out monitoring function objectively to ensure company's interests are met. Companies with dominant independent board are able to maintain tight monitoring on working capital policy resulting in smooth operational activities and improvement in company's image.

This study still has limitations that should be corrected in future research. First, the research sample is limited to manufacturing sector companies listed on the Indonesia Stock Exchange with a span of 5 years, namely from 2017 to 2021. Second, the corporate governance measurement variables are only limited to independent commissioners and ownership structure, where ownership structure only focuses on ownership concentration, which is the largest percentage of ownership.

Recommendations to be considered by future researchers regarding the topic concerned so as to produce more beneficial research, namely: (1) extending the research to other sectors such as the financial sector or expand the research population to the entire enterprise sector, (2) extend the research period to more than 5 years, (3) expand ownership structure variables into various variables, such as family ownership, foreign ownership, managerial ownership, and others, lastly (4) include other independent variables, such as characteristics of the board, audit committee, and others. Also, include dependent variables such as Tobin's Q and Earnings per Share (EPS).

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