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Cash holding and corporate governance on company financial performance: Case study of construction infrastructure project supporting industries on the Indonesian stock exchange

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A B S T R A C T

The Indonesian government currently focuses on high infrastructure development to prepare for connectivity between one city and another. The massive construction of the new government capital is also called the archipelago's capital. This condition impacts companies supporting construction projects, which are growing rapidly. This growth is supported by corporate governance and the cash-holding industry, which supports infrastructure projects for the company's financial performance. This research aims to determine the role of cash holding and corporate governance (board skill, independent director, managerial ownership) on the financial performance of infrastructure-supporting manufacturing companies in Indonesia. The sample used in this research was 83 manufacturing companies listed on the Indonesia Stock Exchange in the 2010-2020 period. This research uses panel data regression as a data analysis method. The results of this research show that managerial ownership significantly impacts increasing cash holding by maintaining the optimization of cash and cash equivalents. The company's managerial ownership cannot impact board skills because many companies still need to accommodate share ownership by management and board-skill-educated doctors. This condition also causes board size skills not to impact increasing cash holding in the company. Board skills have yet to be able to impact financial performance significantly. Managerial ownership and cash holding impact increasing return on assets, thereby increasing financial performance for manufacturing companies that support infrastructure projects. The independent director, as a variable moderator, still needs to be capable of moderating managerial ownership, board skill, and cash holding to improve financial performance. This condition is caused by data from several companies still needing more independent directors. Research provides a practical contribution to the owner as soon as possible, recruiting board members with doctoral education as competent board skills and making independent directors have a vital role in improving financial performance. The theoretical contribution to research is to enrich the theory of corporate governance and financial performance.

1. Introduction

All businesses have a target to make a profit, but there are times when a company is in a phase of declining financial performance, resulting in less-than-optimal returns. Companies must be able to organize their business activities so that they can run effectively and efficiently to improve financial performance (Yun et al., 2021). Companies can consider external conditions to adapt to the financial potential conditions that have been determined (Simanjuntak & Siagian, 2023). Companies can increase development and investment in increasing production capacity to suit customer needs. Companies that produce products that support the development of national infrastructure are useful and sustainable in supporting mobilization and economic improvement (Kim, 2023). Infrastructure development impacts regional development with Indonesia's geographical conditions (Fauzan et al., 2023). This development can provide added value for the industry and create

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job opportunities for the community (Berawi et al., 2021). Indonesia's competitiveness will increase if it has adequate infrastructure and efficient connectivity. Infrastructure development, which continues to run well and quickly in Indonesia, will require support from other companies that produce products. Supporting manufacturing company output can be used as raw material for the process infrastructure, spare parts, and components in national development. Project infrastructure, which is determined, depends on the budget estimate and program cost management (Al-Marsomi & Al-Zwainy, 2023).

Improving transportation infrastructure in an area can make improvements in facilities and infrastructure more evenly distributed (Moza & Paul, 2024). When equality works well, there is no longer such a thing as underdeveloped areas poverty in an area becomes more resolved. Besides transportation, communication infrastructure must also be improved (Fauzan et al., 2023). Increasing infrastructure development in the fields of transportation and communication to reduce disparities (Kim, 2023). Infrastructure projects used by companies are closely related to the time and costs set (Hosseinpour et al., 2023). Companies designated as supporting infrastructure development need to control their financial performance as a form of financing seen from cash and cash equivalents that support the sustainability of the process (Berawi et al., 2021). The company's financial performance must be paid attention to because it reflects its health (Simanjuntak & Siagian, 2023). The company can also utilize its financial performance as information for decision-making. The company's financial performance is measured using profitability, liquidity, activity, and solvency ratios. Financial performance from profitability ratios is one of the most frequently used measurements because it is closely related to the company's capability to earn profits. A good profitability ratio is a ratio that can measure a company's effectiveness in managing its assets to gain profits. An assessment of a company's financial performance is more objective and free from management manipulation, namely through market assessment. Market-based measurements can represent investors' assessments of a company's capability to generate profits in the future.

Shares in the manufacturing industry tend to be more popular with investors, as seen from the increase in share prices (Asante-Darko et al., 2018). The market capitalization of manufacturing industrial companies is getting bigger, so the company's capital is also increasing, and this can affect the company's financial performance. The manufacturing industry is important because companies process raw materials into products that many people need. Companies in the manufacturing industry are required to be more effective and efficient to better compete with competitors in their growing industry. The manufacturing industry holds more non-current assets (fixed assets) such as machines, buildings, land, etc. It has less flexibility due to a large workforce, factories, supply chains, etc. Manufacturing industry companies are vulnerable to liquidity problems because they have quite low levels of liquidity. Companies must maintain adequate liquidity because liquidity greatly influences company profits (Ranajee & Pathak, 2019). The company has minimal liquidity and is experiencing conditions of uncertainty, so suddenly needing funds in a short time impacts on the company's operations. A company's ability to carry out infrastructure projects must consider the balance between cost and time (Hosseinpour et al., 2023). This condition resulted in the company needing more cash or cash equivalents available. The condition of the company's lack of cash funds has an impact on difficulties in paying short-term debt obligations that are approaching maturity. The company's inability to have cash balances and equivalents available impacts its operations. This condition creates a big problem for the company, so it has an impact on the company's sustainability in the short term, which affects the company's financial performance. A conservative cash policy is the right choice for companies (Ranajee & Pathak, 2019). The company's external conditions, especially credit lending to financial institutions, are more selective in choosing its customers. The condition of a company experiencing difficulties will impact external partners who provide loans because it carries considerable risk. Management's ability to manage cash and good financial performance certainly has the potential to make it easier to apply for credit loans at increasingly cheaper costs. Such conditions can affect the company's financial performance (Ranajee & Pathak, 2019)

The balance of cash and cash equivalents available to a company is said to be cash holding (Wellalage et al., 2023). Companies always try to manage stable financial conditions to overcome external changes (O'Callaghan et al., 2022). Cash holding comes from cash and cash equivalents, one of a company's most liquid assets (Asante-Darko et al., 2018). Determining cash holdings at the optimal point is very necessary because cash is the working capital element that the company most needs to fulfill the company's operational activities (Yilmaz & Samour, 2024). Both holding excess cash holdings and holding cash shortfalls have consequences for the company and shareholders. Companies need to be precise in managing their finances, one of which is determining the size of the company's cash holdings (Ashhari & Faizal, 2018). With cash holding, the company can use it as a precaution so that it does not need to sell assets to use as capital to make investments that benefit the company. The existence of cash holdings in a company can be used to distribute dividends, pay debts, invest, or save for future company needs (Xu & Li, 2018). The higher the cash holding level, the more excess cash the company can have, which causes opportunity costs that reduce the company's operational performance (Poti et al., 2020). The higher the cash holding, the more the liquidity problem is resolved, and the company can finance its operational activities so that investors assess it positively, and the company's financial performance can increase, and vice versa (Aslam et al., 2019; Ranajee & Pathak, 2019). Cash holding influences financial performance, where if there is an increase in cash and cash equivalents in the company, the total assets will also increase. If an increase does not follow the increase in cash and assets in performance, it will reduce the company's value. (Ashhari & Faizal, 2018). Cash holding in companies has an impact on increasing the company's financial performance in terms of return on assets and equity in 536 non-financial firms for 2006–2020 from 11 Middle East and North Africa region countries (Yilmaz & Samour, 2024).

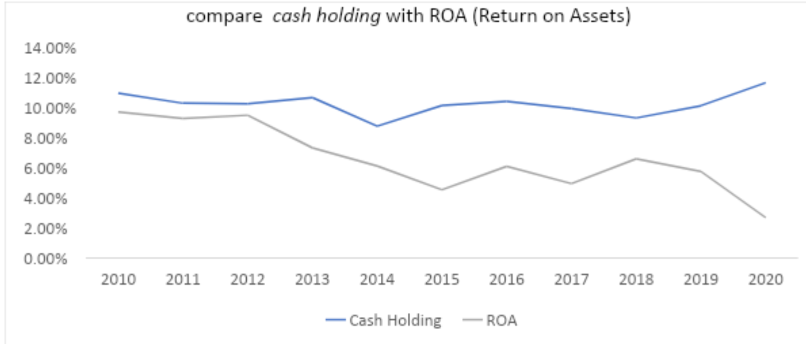

Fig. 1. Comparison cash holding and Return on Assets (ROA) manufacturing industrial companies listed on the Indonesia Stock Exchange in 2010-2020

Investors who are interested in buying shares in a company can look at the company's value in terms of cash holdings (Yun et al., 2021). The company always strives to minimize external funding costs. With large amounts of cash, you can first finance it from internal funding; if this is insufficient, external funding can be used. Sufficient internal funds supported by the company in high external financing can eliminate investment opportunities, thereby reducing company value and shareholder wealth. Apart from cash holding, corporate governance is another variable that can influence a company's financial performance (Aslam et al., 2019). Cash holding companies on listed Ghana exchange negatively impact firm value (Asante-Darko et al., 2018). Cash holding is important for companies and contributes to firm performance and value, with a positive coefficient of 9.93% in 306 non-financial companies listed on the Vietnam stock exchange market period of 2008–2017 (Thanh, 2019). The company's cash holding needs to be controlled to be optimal, so corporate governance is needed (Asante-Darko et al., 2018; Thanh, 2019; Yun et al., 2021). Corporate Governance provides a system of rules and regulations for companies that relate to the company board, management, shareholders, and stakeholders (Mayur & Saravanan, 2017). Corporate governance in a company has a very important function in influencing the company's financial performance and generating profits. Good governance will create efficient performance in the company and reduce the possibility of agency problems occurring. (Yun et al., 2021). Corporate governance is a system that regulates and controls a company, which is expected to provide and increase company value to shareholders (Haider & Fang, 2016). Management in a company can directly influence reported profits and make operational decisions (Tejedo-Romero & Araujo, 2022). Companies with poor corporate governance may carry out non-transparent actions such as manipulating reported profits, corruption, making subjective decisions, or other actions that can affect the company's financial performance (O'Callaghan et al., 2022). In every industry, governance needs to be carried out well to create better company financial performance, especially in the manufacturing industry because of the importance of this sector, governance also needs to be paid attention to, but not all companies in this sector have good governance. Hamid (2019) stated that a manufacturing company that is the main supporter of construction, such as PT Krakatau Steel Tbk (KRAS), was determined to have a bribery case against one of its directors in 2019 and in 2021, allegations of corruption were discovered in the company. This is reflected in the fact that the construction of a large factory worth $850 million was not completed; it was even declared a failure in 2019; this case meant the company had to bear a high debt burden of up to $2 billion (Hamid, 2019). Cases like this show that poor corporate governance can cause company losses because management makes decisions subjectively to fulfill their interests and can reduce company performance. The role of corporate governance is reflected in managerial ownership, board size, board skills, and independent directors. Potharla and Amirishetty (2021) stated that board size board skills correlate with board independence in increasing the financial performance of listed non-financial firms in the Indian market from the year 2011–2018. The board's role of directors is to have control over roles by paying attention to legal duties, and services roles are the process of providing advice and counsel to managers (Ishak et al., 2016). A board size that has skills is a company's board of directors, which plays a direct role in the company's operational performance (Ali, 2020). Board size with skills that describe the abilities possessed by the board of directors in running the company is a critical factor in determining company performance because it can make the company efficient at the level of complex decision-making (Kumar & Singh, 2013). Board members with skills correlated positively with firm performance adjusted to the level of company needs (Ozbek & Boyd, 2020), such as the company needs level the education of the board of directors is estimated to be capable of having the ability to make decisions (Mayur & Saravanan, 2017). Apart from skills, a company's board size impacts the company's financial performance in Australian listed companies during 2005-2015 (Shan, 2019). Board size is positively correlated with firm performance in increasing return on assets (ROA) in 29 Indian listed banks for the period 2009-2016 (Shukla et al., 2020).

Managerial ownership represents direct ownership of shares by directors and commissioners so that a higher percentage of ownership indicates confidence in the company's financial performance (Asante-Darko et al., 2018; Knyazeva et al., 2013; Tejedo-Romero & Araujo, 2022). Managerial ownership in Australian listed companies from 2005 to 2015 negatively impacted the firm financial performance (Shan, 2019). The research results show that the ownership structure of companies listed on the Ghana Exchange has an impact on increasing company value (Asante-Darko et al., 2018). Managerial ownership is essential for companies in improving company performance because directors and commissioners also own shares in the company, so they try to work well to increase company value. (Berke-Berga et al., 2017). Ownership in the private sector in India is mastered by the family more than 50%, and with its own uniqueness, namely many director positions (Wellalage et al., 2023). Managerial ownership in companies needs to be regulated to contribute to improving company performance and optimizing cash holding. Board ownership and board size determined market value in US corporate spin-offs between 2000 and 2014 (Ozbek & Boyd, 2020).

The existence of an independent director can reduce the possibility of agency problems because this director is objective and does not side with anyone in decisions, so the presence of an independent director can improve company performance (Gunawan et al., 2019; Tejedo-Romero & Araujo, 2022; Haider & Fang, 2016). Independent boards in Australian listed companies from 2005 to 2015 had a impact negative on firm performance negative and significant (Shan, 2019). The independent director is tasked with determining company policies and strategies and monitoring the use of company finances (Knyazeva et al., 2013). The independent director also monitors and resolves conflict of interest issues at the management level in use assets companies (Dube & Pakhira, 2013). Independent directors and female directors impact company performance in 344 companies listed on the Indonesian Stock Exchange (Gunawan et al., 2019). Based on the explanation above, the research objectives can be determined in general, namely, managerial ownership influences cash holding. Board skill and financial firm performance. Second, board skill influences cash holding and financial firm performance. Third, cash holding affects financial firm performance. Finally, the fourth, namely the independent director, acts as a moderator between cash holding, managerial ownership, board skill and financial firm performance.

2. Literature Review

2.1. Company Financial Performance

Company financial performance is the company's financial condition at a certain time, which can be used to show its success in using its resources (Kumar & Singh, 2013). The company's financial performance can increase when the company's efficiency and effectiveness can run well (Shan, 2019; Thanh, 2019). The company's financial performance can describe the extent to which the company achieves certain results over time, and the level of performance can be seen easily (Thanh, 2019). Operational performance and market value determine a company's financial performance (Aslam et al., 2019). Profitability is a ratio that measures the level of profit compared to sales or assets liquidity. A ratio that shows the company's liquidity capability in the short term by looking at the company's current assets against debt smoothly (Potharla & Amirishetty, 2021). Activity ratio measures and determines the level of activity of an asset in a company at a certain level of activity (Wellalage et al., 2023); low activity at a certain level of sales causes more funds to be invested in that asset.

Profitability ratios are one of the most important ratios to use because the goal of all businesses is to make a profit, and profitability ratios can provide data that can be used to determine company performance (Berke-Berga et al., 2017). Manufacturing companies have more fixed assets than other assets to help with the production process (Gunawan et al., 2019). Therefore, the profitability ratio return on assets is a very important financial ratio for the manufacturing sector. Return on assets is a ratio that describes a company's profitability by measuring its operational ability to generate profits using all the assets it owns (Shan, 2019; Poti et al., 2020). The greater the ratio results, the better the level of efficiency, meaning that the company can utilize its assets to make profits as maximally and efficiently as possible and vice versa (Yilmaz & Samour, 2024). Company-based operations are needed for a more objective assessment and are free from management manipulation, namely through market-based (Aslam et al., 2019). Market-based measurements can represent investors' assessments of a company's capability to generate profits in the future (Tejedo-Romero & Araujo, 2022). Company value is the most suitable measurement to show market assessment in this sector because it can represent the company's financial performance and, in its calculations, contains a combination of the company's market value and book value. (Berke-Berga et al., 2017). Market value is a ratio that describes the company's value as part of the overall combination of assets owned by the company (Thanh, 2019). Company performance is shown by increasing company value, which is shown by increasing return on assets (Wellalage et al., 2023; Thanh, 2019) and Tobin Q (Berke-Berga et al., 2017).

2.2. Cash Holding

Cash holding is the proportion of cash and cash equivalents owned by the company (Yun et al., 2021). Cash holdings are cash needed to meet the needs of daily operational activities. They can also be used for several things: distribution to shareholders, cash, buying back shares when needed, and other urgent needs (Ashhari & Faizal, 2018). Cash holding can help finance company activities without additional costs. Free cash flow is an adjustment of cash from the company's operational activities in carrying out company funding and investment. Free cash flow comes from excess operating cash flow, investment cash flow, and financing cash flow activities. Cash and cash equivalents are one of the most liquid assets owned by the company (Xu & Li, 2018). High cash holdings reflect management's inability to manage company assets properly, so the company misses the opportunity to obtain results from idle funds in the company's cash (Poti et al., 2020). Optimal cash holding can help company efficiency with a threshold of 9.93% on 306 non-financial companies listed on the Vietnam stock exchange market (Thanh, 2019). Cash and cash equivalents available in the company can be used at any time to purchase assets, and investments can be distributed to investors and others (Tejedo-Romero & Araujo, 2022). The company maintains a stock of cash and cash equivalents for precautionary purposes, speculating and carrying out necessary transactions. The corporate governance mechanism determines the company's cash holding by carrying out activities that can reduce the company's cash reserves rather than investing (Asante-Darko et al., 2018). The company determines cash holdings in the right conditions because cash is the working capital element that the company needs most to fulfill its operational activities. Companies need to manage optimal cash levels to have an impact on company operations so as not to hold large amounts of cash that do not result in increased value or hold small amounts of cash because it determines the sustainability of the company's operations. Cash holdings in the National Stock Exchange and Bombay Stock Exchange companies for 2001–2015 are expressed by the ratio of cash to total assets net of cash and cash equivalents (Ranajee & Pathak, 2019). Cash holding is measured by comparing or dividing cash and cash equivalents into total assets (Thanh, 2019; Xu & Li, 2018).

2.3. Corporate governance

Corporate governance is a system that controls the relationship between stakeholders in a company (Gunawan et al., 2019). Corporate governance helps companies establish rules, practices, and processes to control and direct corporate affairs (Asante-Darko et al., 2018). Good governance can align with a shared culture, existing systems, and applicable regulations (Hamid, 2019). It is believed that good corporate governance can provide optimal performance so that the company can provide good value to stakeholders (Yun et al., 2021; Al-Marsomi & Al-Zwainy, 2023). Good corporate governance, which manages and controls the relationship between all components of the company, can work in synergy (Ali, 2020). Good corporate governance aims to make business management transparent to foster a business environment that aligns with stakeholders' interests (Gunawan et al., 2019). Managers in companies try to increase company value by maximizing shareholder investment (Wellalage et al., 2023). Good financial performance and recognition by investors are very important for all companies (Haider & Fang, 2016). The management capabilities of companies that have a bad reputation for good corporate governance tend to be or are more often avoided by investors. Investors pay high attention to companies with good corporate governance and high corporate financial performance (Mayur & Saravanan, 2017). Investors believe that companies that implement good corporate governance can provide little risk and high benefits (Tejedo-Romero & Araujo, 2022). Investors try to make the right decisions to gain benefits for themselves, especially for the majority shareholder (Kumar & Singh, 2013). Investors also pay attention to the company's performance, which has increased, and can also be more focused or smooth when realizing the company's goals. The company maintains good corporate governance by creating stakeholder synergy (Ozbek & Boyd, 2020). To support corporate governance, roles in governing an organization are needed. Stakeholders in the company need to organize and manage the company so that it provides high value. The roles in governing an organization consist of managerial ownership and independent directors. An important role in corporate governance is the board size determined by the company (Haider & Fang, 2016). Board ownership and board size positively influenced market value in US corporate spin-offs between 2000 and 2014 (Ozbek & Boyd, 2020). Managerial ownership is the proportion of share ownership in a company by management, namely the company's directors and commissioners (Knyazeva et al., 2013). Managerial ownership indirectly reduces the level of possibility of agency conflict because management shares ownership with the interests of shareholders, which is in line with the idea of making the company's performance as good as possible (Shan, 2019). The higher share ownership from management makes management work harder to improve the company's performance because it directly benefits shareholders (Berke-Berga et al., 2017). The determined managerial ownership is measured by share ownership for those owned by managers compared to the total shares outstanding (Shan, 2019). Managerial ownership is (Berke-Berga et al., 2017).

Board size is the number of individuals appointed to be part of the company's board of directors (Shan, 2019; Knyazeva et al., 2013; Ali, 2020). Board size is important in the composition of the board in a company (Ozbek & Boyd, 2020). The thinking of the company's board of directors is more critical in monitoring, providing advice, and making decisions regarding resources within the company (Abang'a et al., 2022). The board of directors and commissioners must carry out their duties and responsibilities in good faith, with full responsibility and prudence, and evaluate the committee's performance (Ali, 2020). The board of directors in a small to medium-sized company has a board size of between 2-3 members, while for medium-sized companies, it exceeds five people (Ali & Ayoko, 2020). The board's role can represent several corporate governance principles, namely accountability and responsibility (Tejedo-Romero & Araujo, 2022). Board size, which has an increasing number, is correlated with a decrease in firm future risk (Haider & Fang, 2016). Board size is the number of directors on the board (Shan, 2019; Ali, 2020). The board size with skills determined in this research is the percentage of directors with doctoral graduates compared to the total board of directors (Abang'a et al., 2022). Realizing good corporate governance (GCG) requires independent commissioners and several parties, one of which is the independent director (Gunawan et al., 2019). Independent directors are directors who are not from within the company and are not affiliated with the company. The task of the Independent Director is to ensure that management carries out their respective roles (Dube & Pakhira, 2013). Independent director is a variable that can increase efficiency in decision-making. So, the greater the number on the company board, the greater the influence on capital structure decisions (Potharla & Amirishetty, 2021). The existence of an independent director can reduce agency problems because this director is objective and does not side with anyone in decisions, unlike management, whose decisions can be motivated by the desire to satisfy themselves (Haider & Fang, 2016). Independent directors are not included in the category of company executives, nor are they professional advisors to the company and are not suppliers/customers of the company (Dube & Pakhira, 2013).

The term of office of independent commissioners and independent directors of listed companies states that there must be at least two people on the board of directors elected by small to medium-sized companies (Ali & Ayoko, 2020). Independent directors have duties that focus more on executive performance and function to reduce divisions between the interests of shareholders and management and have three main tasks, namely supervising company management on behalf of shareholders, preparing strategic plans, and gathering all kinds of resources (Ishak et al., 2016). Members of the board of directors, namely the independent board, do not have any ties to the company owner, either financially or otherwise. The company's board of directors is subject to the supervision and guidance of an impartial board of commissioners. With the duties and roles of independent directors, the distinction of independent directors can represent several corporate governance principles, namely independence and fairness (Dube & Pakhira, 2013). An independent director is appointed to assess and direct a company, so it must be free from business or other interests and matters deemed unrelated to the company's business (Ishak et al., 2016). Independent directors are the percentage of the number of independent directors on the company's board of directors (Shan, 2019; Knyazeva et al., 2013; Gunawan et al., 2019; Tejedo-Romero & Araujo, 2022).

2.4. Relationship Between Concepts

2.4.1. The effect of cash holding on company financial performance

Cash holding is one of the most liquid assets in a company (Thanh, 2019). Cash holding influences financial performance, where the higher the cash and cash equivalents in a company, the higher its total assets (Yilmaz & Samour, 2024). The increase in assets that occurs if an increase does not follow it in performance can reduce company value (Xu & Li, 2018). An increase in cash inventory in a company can cause much cash to be idle and cause an increase in opportunity costs, resulting in a decline in the company's financial performance. This condition is different from the company's liquidity risk, which is decreasing and allows the company to meet its operational needs to get appreciation from investors for its value. The difference is that if the company's cash inventory is lower, it will tend to have greater risks on liquidity even though it can provide greater profits (Ashhari & Faizal, 2018; Aslam et al., 2019).

Previous research conducted in Malaysia on small and medium companies found that cash holding had a significant and positive effect on the company's financial performance, as indicated by the value of return on assets (Ashhari & Faizal, 2018). Companies must have more cash holdings to improve company performance (Poti et al., 2020). Small companies apparently need more cash than large companies because of limited access to external financing. Aslam et al. (2019) stated that the influence of cash holding on financial performance has a negative effect because companies lose opportunities to gain profits. Aslam et al. (2019) found a positive influence of cash holding on company value. Cash holdings held on the Ghana stock exchange have a negative impact on company performance (Asante-Darko et al., 2018). Cash holding in a company has an impact on firm performance by increasing the value of return on assets (Yun et al., 2021; Wellalage et al., 2023). Cash holding in 306 non-financial companies listed on the Vietnam stock exchange market significantly impacts firm performance and value (Thanh, 2019).

2.4.2. The relationship of corporate governance to company financial performance

Corporate governance is a regulation that regulates the relationship between the company board, management, shareholders, and stakeholders (Wellalage et al., 2023). The quality of corporate governance can be a moderator between cash holding and firm performance (Yun et al., 2021). Corporate governance suggests that more independent directors can lead to more excellent monitoring by the board so that decision-making can be more objective. Objective decision-making can reduce the possibility of making decisions that are detrimental to the company or making subjective decisions that benefit only one party (O'Callaghan et al., 2022) so that having an independent director can safeguard the interests of shareholders and stakeholders and increase value and performance of the company. Companies that do not manage their finances with good corporate governance tend to invest more cash and use up available cash more quickly. Characteristics that influence the performance of the board of directors are independent directors, board size, board skills, and director experience (Dube & Pakhira, 2013).

Characteristics of the board use of board skills illustrate high competence to increase critical thinking in monitoring, providing advice, and making decisions on resources within the company (Abang'a et al., 2021). Meanwhile, management's share ownership will also affect the company's financial performance; the greater the ownership, the more careful the company board will make decisions. This is different from large shareholders, so the size of the board of directors is irrelevant because large shareholders can encourage managers to make risky decisions to maximize their profits because they have the power to determine the board of directors (Haider & Fang, 2016). Understanding the influence of the characteristics of directors on the company's financial performance is important. The board of directors is the core of corporate governance and has an important function in the company.

The board size owned by Australian listed companies from 2005-2015 positively impacted managerial ownership in determining company performance (Shan, 2019). Managerial ownership in a company determines the number of board sizes determined by considering the existing composition of the company (Tejedo-Romero & Araujo, 2022). Ownership concentration is not a moderating variable between board size and a firm's future risk (Haider & Fang, 2016). Managerial ownership by a company can moderate the relationship between board size and human capital disclosure listed in the Ibex35 index Spanish stock exchanges (Tejedo-Romero & Araujo, 2022).

The board size determined by the company has no relationship with firm value (Asante-Darko et al., 2018). The composition of a company's board size can have an impact on human capital disclosure listed in the Ibex35 index Spanish stock exchanges (Tejedo-Romero & Araujo, 2022). Board skills are a characteristic that contributes to the efficiency of the way of working to provide adequate cash holding (Haider & Fang, 2016).

2.4.3. Connection board skill on the company's financial performance

Board members and the appointee should have individual knowledge and abilities or have competent skills to be part of the board of directors and ensure the company has increasingly better financial performance and makes effective decisions (Kumar & Singh, 2013). Members of the board of directors have an important function in the company, where they are directly involved in the control and supervision of company operations to ensure that they are in line with the wishes of shareholders and management. (Ishak et al., 2016). The abilities and knowledge of directors need to be considered, along with the high level of competence and capability needed to carry out their functions as a board to improve the company's financial performance (Abang'a et al., 2021). Ujunwa (2012) states that good board skills influence the financial performance of companies in Nigeria. The determined board size does not have an impact on operating revenue in manufacturing companies with 288 medium and large organizations listed on the Australian Securities Exchange (Ali, 2020). Board size with skills competent those determined by good composition are positively correlated with return on assets as an indication of the firm performance of 29 Indian listed banks for 2009-2016 (Shukla et al., 2020). Board size correlates with the financial performance of listed non-financial firms in the Indian market from 2011–2018 (Potharla & Amirishetty, 2021). High education from the board (board skill) is of good value for the company, as they think more critically and have high innovation in dealing with problems faced by the company. Board size can improve work efficiency, leading to a firm's continued performance and corporate risk (Haider & Fang, 2016). Board size negatively correlates with firm value in 176 Indian firms listed on the Bombay Stock Exchange (Kumar & Singh, 2013). The company's board size impacts the company's financial performance (Asante-Darko et al., 2018). Board size with increased skills in the company is negatively correlated with bank performance listed on the Bombay Stock Exchange (BSE) and/or the National Stock Exchange (NSE) of India (Mayur & Saravanan, 2017)

2.4.4. The influence of managerial ownership on company financial performance

Managerial ownership can also influence the company's financial performance (Shan, 2019). Managerial ownership describes company management's percentage of share ownership (Berke-Berga et al., 2017). Increasing managerial ownership influences decreasing conflict in the company so that it can influence the company's financial performance. The Ghana Stock Exchange found that managerial ownership influences increasing company value (Asante-Darko et al., 2018). The percentage of managerial ownership does not affect the return on assets of Compustat firms in the 1996–2006 period in the S&P 1500 (Knyazeva et al., 2013). Managerial ownership is getting lower, with a low percentage of company share ownership by managers influencing company value. Managerial ownership influences financial performance, while it influences decreasing company value. Managerial ownership influences the company's financial performance and has no influence on increasing the company's cash holdings (Berke-Berga et al., 2017). Badjuri (2012) states that managerial ownership hurts financial performance. This condition shows that management is more focused on increasing profits obtained from dividends rather than working harder to improve the company's financial performance. Managerial ownership in financial reports of companies listed on the Baltic stock exchanges impacts the company's financial performance regarding return on assets. However, it does not impact firm market performance (Berke-Berga et al., 2017). Family and concentration ownership can act as moderators by weakening the relationship between cash holding and firm performance (Yun et al., 2021).

2.4.5. The role of the independent director as a moderator between board size, managerial ownership, and cash holding on the company's financial performance

Independent directors can also influence the company's financial performance (Gunawan et al., 2019). An independent director is an independent director or director who is not affiliated with the company. Independent directors play a role in supervising the policies of the board of directors in carrying out company management activities and do not have a role in making operational decisions so that they can speed up or even slow down decision-making due to strict control measures over determining strategic decisions related to the percentage of board members in managerial ownership, determining the qualifications of board members related to the level of formal education (board skill) including determining the number of board members in the company board size and policies regarding cash holding so that it has an impact on improving company performance. Independent directors can protect minority shareholders when the supervisory power is determined to be enough to provide certainty to all shareholders in producing company performance (Shan, 2019). Independent commissioners are expected to be able to increase supervision of business activities from fraudulent practices so that, ultimately, they can increase company value by making practical, precise, and fast decisions and acting independently (Tejedo-Romero & Araujo, 2022). Potharla & Amirishetty (2021) state that board independence is correlated with board size and financial performance of listed non-financial firms in the Indian market from the year 2011–2018 The greater the proportion of independent directors in the company, the better monitoring and more objective decision-making will be, and the possibility of conflicts of interest will be reduced. Previous research conducted in Pakistani companies found that independent directors had a negative effect on the company's financial performance (Aslam et al., 2019). The ability of stakeholders to determine directors who have skills and with an optimal number can have an impact on improving financial performance. The board's inability is due to a lack of knowledge about company operations and large numbers, making it less efficient and impacting performance. Research from Bangladesh found the influence of independent directors on company financial performance (Rouf, 2012). The percentage of independent directors positively and significantly impacted the return on assets of Compustat firms in the 1996–2006 period in the S&P 1500 (Knyazeva et al., 2013). The role of the independent director in the company is to balance and focus on increasing the company's financial performance and company value (Gunawan et al., 2019). The company's independent board can impact human capital disclosure with a moderating variable, namely managerial ownership, listed in the Ibex35 index Spanish stock exchanges (Tejedo-Romero & Araujo, 2022).

Based on the explanation above, a research model can be determined (Fig. 1).

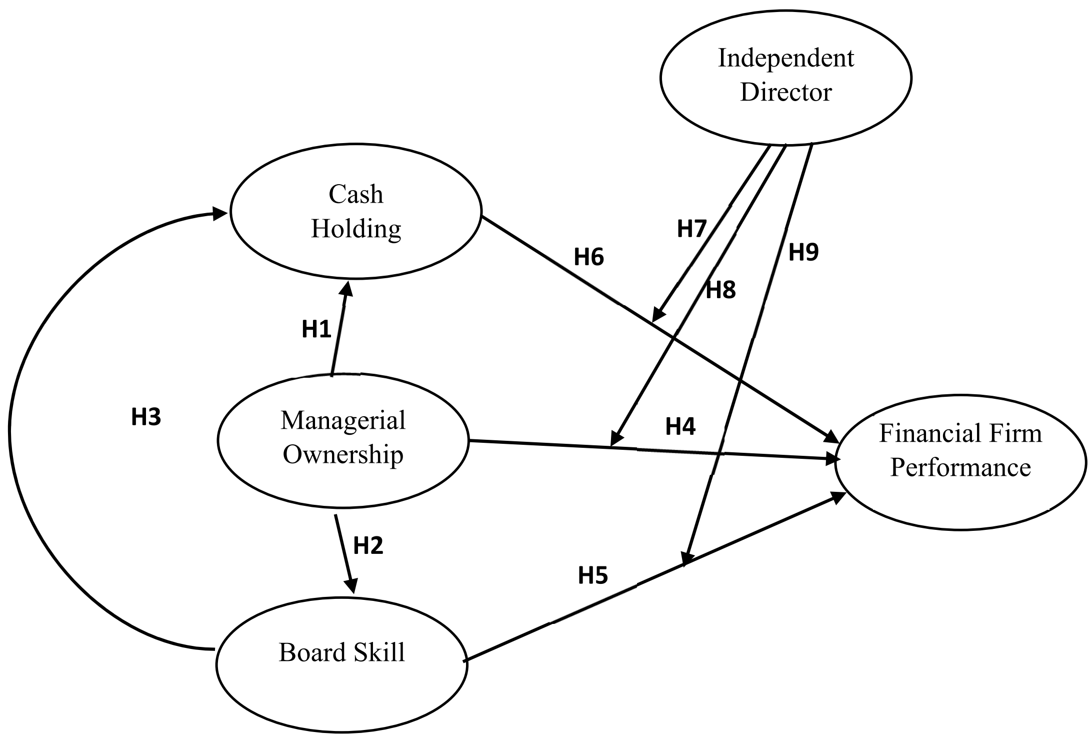

Fig. 1. Research Model for Determining Cash Holding on Financial Performance

Based on the research model, the research hypothesis can be determined as follows:

H$_1$: *Managerial ownership influences cash holding*.
H$_2$: *Managerial ownership influences board skills.*
H$_3$: *Board skill influences cash holding.*
H$_4$: *Managerial ownership influences financial firm performance.*
H$_5$: *Board skills influence financial firm performance.*
H$_6$: *Cash holding influences financial firm performance*.
H$_7$: *Independent directors act as moderators between cash holding and financial firm performance*.
H$_8$: *Independent directors act as moderators between managerial ownership and financial firm performance.*
H$_9$: *Independent directors act as moderators between board skills and financial firm performance.*

3. Research Methods

This type of research is quantitative research that uses numerical data on certain populations and samples and is processed using statistical models to determine the results of the influence between variables through hypothesis testing. This research examines the correlation between corporate governance (managerial ownership, board skill, and independent director) and cash holding on the company's financial performance. The population used in this research is industries related to the needs of building construction projects, namely steel manufacturing, iron manufacturing, metal manufacturing, building manufacturing, and other companies listed on the Indonesia Stock Exchange. The sample was determined using a judgmental sampling technique, with the first criterion being manufacturing companies that support infrastructure development. The second criterion is manufacturing companies that have never been delisted in the 2010-2020 period. The third sample criterion is that the company publishes complete financial reports that can be accessed via www.idx.com or the company's website in the 2010-2020 period. The fourth criterion is that the company uses the IDR currency in recording its financial reports.

The research obtained data from overall company documents, such as financial reports and annual reports of manufacturing companies listed on the Indonesian Stock Exchange in the 2010-2020 period, obtained through print media or company websites. The research variable is determined by financial performance with increasing company value as indicated by an increase in return on assets (Wellalage et al., 2023; Thanh, 2019; Berke-Berga et al., 2017; Yun et al., 2021; Shukla et al., 2020; Knyazeva et al., 2013; Shan, 2019; Poti et al., 2020). Cash holding (CH) is determined by comparing or dividing cash and cash equivalents by total assets (Tejedo-Romero & Araujo, 2022; Yun et al., 2021; Thanh, 2019; Xu & Li, 2018). The corporate governance dimension determined by the managerial ownership (MO) variable is determined by the proportion of share ownership of a company by management, namely the company's directors and commissioners (Knyazeva et al., 2013; Berķe-Berga et al., 2017; Shan, 2019; Ozbek & Boyd, 2020). Board skill (BS) is defined by the percentage of the number of directors (Shan, 2019; Knyazeva et al., 2013; Ali, 2020; Ozbek & Boyd, 2020), but in research, it is seen from competency with the number of doctoral graduates compared to the total board of directors (Abang'a et al., 2022). Finally, the moderator variable, namely the independent director, is the percentage of the number of independent directors on the company's board of directors (Shan, 2019; Knyazeva et al., 2013; Gunawan et al., 2019; Tejedo-Romero & Araujo, 2022).

Data processing was carried out using the Eviews application with the panel data regression analysis method as data analysis. Panel data is used because panel data combines time series and cross-section observations that provide more information, variety, and smaller collinearity between variables, more degrees of freedom, and more efficiency. Panel data can explicitly consider the heterogeneity of individual data in a period. Panel data regression analysis. Regression analysis is useful for determining the effect of independent variables on dependent variables in research. Panel data regression analysis is a type of regression analysis that analyzes combined data from time series and cross-sections. The benefit of using panel data is that it increases the number of observations, there is little collinearity between variables, so the possibility of multicollinearity is very small.

In panel data regression analysis, three approaches can be used to estimate the appropriate model: common effect or pooled least squares, fixed effect model, and random effect model (REM). The common effect model is the most straightforward approach, combining all cross-section and time series data before making a regression. The next stage uses the ordinary least squares method to estimate the model on the combined data. The fixed effect model has a different intercept for each subject with a cross-section. The random effect model is a model that assumes all errors have no correlation (Cross section and time series) and autocorrelation. The advantage of the random effect model is that it eliminates heteroscedasticity.

4. Analysis and Discussion

The data in this research comes from annual reports or financial reports of all manufacturing industrial companies listed on the Indonesia Stock Exchange (BEI). The population in this research is manufacturing industrial companies listed on the Indonesia Stock Exchange in the 2010-2020 period. The sample in this study was taken using a purposive sampling technique. The manufacturing companies selected are manufacturing industrial companies that are listed on the Indonesian Stock Exchange and have never been delisted in the 2010-2020 period. 195 companies. The results show that 112 companies are not correlated in the main support for infrastructure development, so we get 83 companies over 11 years for 913 observations. The results of data processing using descriptive analysis are shown in Table 1.

Table 1
Descriptive analysis of Model 1 research data

Variable	Obs	Mean	Std. Dev	Min	Max
CH	913	0.1045	0.1215	0.00002	0.7597
MO	913	0.0374	0.1063	0	0.8944
BS	913	0.0146	0.0534	0	0.5000
FP (LONG)	913	0.0606	0.1468	-2.6410	0.9210
ID	913	0.0928	0.1342	0	0.6667

Table 1 shows that the largest mean value is cost holding (CH), with an average value of 0.1045 and a standard deviation of 1.1215, followed by the mean for an independent director with a mean value of 0.0928, financial performance (ROA) of 0.0606, managerial ownership (MO) the average is 0.0374. The lowest is board skill (BS), with an average of 0.0146 and a standard deviation of 0.0534. The minimum value obtained for managerial ownership (MO) is 0, meaning that some company managers do not own shares because the board owner still owns them skill minimum value is 0, so many companies do not have doctoral education for the board and independent directors with a value of 0, so many companies do not have it. Research data processing was carried out in three ways to answer the nine hypotheses in the research model. The research equation was carried out using a panel data regression equation. The first analysis was carried out using the first model with cash holding as the dependent variable to be able to answer the first hypothesis (H1) and the third hypothesis (H3). The first model is obtained with the equation:

$$Y_{CH} = \alpha + \beta_{MO}X_{MO} + B_{BS}X_{BS} + \varepsilon \quad (1)$$

where α are constants, and ε is an error

Table 2

Hypothesis testing with cash holding as the dependent variable

CH	Coefficient	Std. err.	z	P>|z|	[95% conf. internal]	
MO	.1624928	.0298154	5.45	0.000	.1040558	.2209299
BS	-.0171136	.0548497	-0.31	0.755	-.1246171	.0903898
_cons	.0986848	.0112296	8.97	0.000	.0766752	.1206944
sigma_u	.09956174					
sigma_e	.06435239					
rho	.70532958	(fraction of variance due to u_i)				

Based on the processing results in Table 2 above, MO (Managerial Ownership) has an impact on CH (Cash Holding) amounting to 0.1625 with a p-value of 0.000, so it can be said that the first hypothesis can be accepted. These results show that the greater the shares owned by management, the company is in optimal cash holding so that it can have an impact on company performance. The research results support research that states that managerial ownership influences increasing cash holding optimization (Asante-Darko et al., 2018; Haider & Fang, 2016; Yun et al., 2021), which is different from research conducted by Knyazeva et al. (2013) which states that managerial ownership does not affect cash holding. The third hypothesis determined by board skills having a significant effect on cash holding was obtained with a p-value of 0.755 (>0.05), so the third hypothesis was rejected. This shows that the board skills possessed by companies with doctoral education do not increase cost-holding optimization. Board members with doctoral education do not significantly influence the level of cash reserves necessary for the company to achieve strong financial performance. The research results differ from the results of research conducted by Abang'a et al. (2022) which states that board skill with a doctor's degree can play a role in cash holding. The second model is used to answer the hypothesis of board skill as a dependent variable, namely the second hypothesis that managerial ownership influences board skill, with the equation.

$$Y_{BS} = \alpha + \beta_{MO}X_{MO} + \varepsilon \quad (2)$$

Table 3

Hypothesis testing with board skill as the dependent variable

BS	Coefficient	Std. err.	z	P>|z|	[95% conf. internal]	
MO	-.0097361	.0178145	-0.55	0.585	-.0446519	.0251796
_cons	.0149367	.0041462	3.60	0.000	.0068103	.023063
sigma_u	.03525642					
sigma_e	.04009921					
rho	.43599855					
		(fraction of variance due to u_i)				

The processing results in Table 3 above show that MO (Managerial Ownership) has an impact on CH (Cost Holding) with a p-value of 0.585 (>0.05), so it can be said that the second hypothesis is rejected. This shows that the board skills owned by the company, with an indication of doctoral education, did not impact the increasing managerial share ownership of manufacturing companies that are supporters of national infrastructure projects and have board skills. Doctoral education does not provide additional managerial benefits when owning company shares. The research results differ from those conducted by Abang'a et al. (2022), which states that board skills and a doctorate can play a role in financial performance. Processing with the third model to answer the financial performance hypothesis as a dependent variable, namely the fourth to ninth hypotheses, which relate to financial performance with the equation:

$$Y_{FPROA} = \alpha + \beta_{CH} X_{CH} + \beta_{MO}X_{MO} + \beta_{BS}X_{BS} + B_{CH \times ID} X_{CH \times ID} + B_{MO \times ID} X_{MO \times ID} + B_{BS \times ID} X_{BS \times ID} + \varepsilon \quad (3)$$

The processing results in Table 4 show the hypothesis test value with financial performance as the dependent variable. The fourth hypothesis, namely that managerial ownership influences financial firm performance, obtained a p-value of 0.824 (>0.05), so the hypothesis is rejected. These results indicate that managerial ownership has little financial firm performance for manufacturing companies supporting infrastructure projects in Indonesia. The research results differ from research results which state that managerial ownership influences financial firm performance (Shan, 2019; Asante-Darko et al., 2018; Yun et al., 2021) but are by the research results of Berke-Berga et al. (2017) and Badjuri (2012).

The fifth hypothesis is obtained from Table 4. Namely, board skill influences financial firm performance with a p-value of 0.023 (<0.05) so the hypothesis is accepted. These results indicate that the board skills possessed by manufacturing companies supporting infrastructure projects significantly affect financial firm performance by 0.2349. Companies with board skills demonstrated by doctoral education can influence company performance by increasing the value of return on assets, which is supported by research results from Abang'a et al. (2022). The sixth hypothesis is whether cash holding influences financial firm performance with a p-value of 0.000 (<0.05), so the hypothesis is accepted. Cash holdings formed in manufacturing companies supporting infrastructure projects in Indonesia can have an impact of 0.2261 on the return to assets as financial performance. The research results support the research results that state cash holding influences financial firm performance (Yilmaz & Samour, 2024; Ashhari & Faizal, 2018; Thanh, 2019; Yun et al., 2021; Wellalage et al., 2023) and is different from research results which state that cash holding has a negative effect on financial firm performance (Xu & Li, 2018; Aslam et al., 2019; Asante-Darko et al., 2018).

Table 4
Hypothesis testing with financial performance as the dependent variable

ROA	Coefficient	Std. err.	z	P>|z|	[95% conf. internal]	
CH	.2261329	.0604286	3.74	0.000	.1076949	.3445708
MO	.0213136	.0960471	0.22	0.824	-.1669352	.2095623
BS	.2349469	.1034998	2.27	0.023	.032091	.4378028
ID	-.0150026	.0490817	-0.31	0.760	-.111201	.0811958
CH×ID	-.1468837	.3285018	-0.45	0.655	-.7907354	.4969681
MO×ID	-.4078708	.384571	-1.06	0.289	-1.161616	.3458745
BS×ID	-.2398513	1.256607	-0.19	0.849	-2.702756	2.223053
_cons	.0379468	.0117612	3.23	0.001	.0148952	.0609984
sigma_u	.07002004					
sigma_e	.12159118					
rho	.24903494					
		(fraction of variance due to u_i)				

The hypothesis with the moderating variable is independent from the seventh hypothesis to the ninth hypothesis obtained in Table 4. The seventh hypothesis is that the independent director's role as a moderator between cash holding and financial firm performance is obtained with a p-value of 0.655 (> 0.05), so the seventh hypothesis is rejected. These results indicate that the role of independent directors in companies supporting infrastructure projects cannot strengthen the relationship between cash holdings and financial firms. This condition differs from the results of research conducted by Aslam et al. (2019) and Gunawan et al. (2019), which state that the role of the independent director can improve the financial performance of cost holding. The eighth hypothesis is indicated by the independent director acting as a moderator between managerial ownership and financial firm performance with a p-value of 0.289 (>0.05), so the eighth hypothesis is rejected. These results indicate that independent directors still need to carry out their roles and functions properly in share ownership for management. This condition can be seen in descriptive analysis, where many companies do not have independent directors, and managerial ownership does not exist. The results of eight studies differ from the research by Tejedo-Romero & Araujo (2022), which states that independent directors can protect minority share owners, resulting in company performance. The ninth hypothesis, which was determined by the independent director acting as a moderator between board skills and financial firm performance, was obtained with a value of 0.849 (>0.05), which stated that the hypothesis was rejected. These results indicate that the independent director does not play a role in the relationship between the board's skill and financial performance because many manufacturing companies supporting infrastructure projects need to accommodate the existence of independent directors. Manufacturing companies have not accommodated the existence of independent board members with existing regulations, but the implementation of the regulations that have been determined has yet to be relaxed. The research results on the seventh to ninth hypotheses show that the government as a regulator has yet to strictly maintain that independent directors' roles and functions are necessary for manufacturing companies. This condition shows the need for managerial applications to tighten control for companies and the need for regular audits. The research results contribute to companies that have been listed on the Indonesian stock exchange to see the important role of independent directors who have adequate competence and skills to maintain the sustainability of the company and minority share ownership. Practical contribution for the board to consider the importance of board size in managerial ownership to maintain a balance between company and management goals. The practical contribution of research can enrich the theory of good corporate governance, which is appropriate for maintaining increased financial performance and optimizing cash holding.

5. Conclusion

The company always strives to maintain financial performance and increase share value to satisfy shareholders. Companies on the Indonesian stock exchange always try to improve their performance while still following the regulations set by the government. The company is committed to implementing corporate governance to provide increased returns on assets and cash holding. Based on the results of data processing and data analysis, it was found that managerial ownership owned by manufacturing companies supporting infrastructure projects in Indonesia was able to have an impact on optimizing cash holdings. Managerial ownership in the company cannot significantly influence board skills for those with a doctorate degree because many companies still hold the dual role of board and owner. Board-skill Companies owned by a fixed number of people and those with doctoral degrees have yet to be able to impact increasing cash holdings. The company's managerial ownership has positively and significantly influenced increasing return on assets as a form of financial performance. Managers in manufacturing companies have been able to carry out their roles by increasing company value and performance, which can increase stakeholders' satisfaction. Board skills owned by a company with certain conditions do not significantly impact increasing financial performance. Managerial ownership in manufacturing companies supporting project infrastructure can impact increasing return on assets. The increasing management ownership by the company can impact improving financial performance. Share ownership for management can trigger them to try hard and smartly to generate company profits, which automatically has an impact on increasing financial performance. The hypothesis relating to the moderating variable is that independent directors do not play a role in increasing financial performance. Managerial ownership, board skill, and cash holding cannot be strengthened in financial performance by independent directors. This condition requires strong regulations and control from the government to ensure that all manufacturing companies have an Independent director as a balance between minority and majority shareholders. This research enables management and owners of manufacturing companies to determine adequate practices to have independent directors who possess good skills. The role of the independent director ensures that the company can safeguard the interests of employees, board, and owners well.

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