Working capital management and board diversity towards firm performances in Indonesia's LQ45

Saarce Elsye Hatane, Jennie Winoto and Josua Tarigan
Accounting Department, Universitas Kristen Petra, Surabaya, Indonesia, and
Ferry Jie
School of Business and Law, Edith Cowan University, Perth, Australia

Received 25 November 2018
Revised 30 December 2019
15 August 2020
29 November 2020
1 February 2021
7 June 2021
31 December 2021
6 March 2022
Accepted 31 March 2022

Abstract

Purpose – This study examines the effect of working capital management and board diversity on firm profitability and firm value for a sample of Indonesian firms listed in the LQ45 index. The interaction of board diversity components with working capital management adds a comprehensive discussion to enhancing working capital management efficiency.

Design/methodology/approach – This study engages a panel multiple regression method. Data from a sample of LQ45 companies from 2010 to 2016 are analysed using a fixed and a common effect model. Board diversity is further analysed in interaction variables, whether it holds the moderating role in the relationship of working capital and firm performances. This study operates return on capital employed (ROCE) as the proxy of profitability performance and EVA-Spread for the firm's value performance. The simultaneous effect test is used for the robustness test.

Findings – The results indicate that working capital management and board diversity have no significant impact towards profitability. However, they significantly positively impact firm value, meaning that the market is attracted by effective working capital management and board diversity. However, the interaction variable analysis shows that gender diversity and education level diversity weaken the impact of working capital management towards firm value.

Research limitations/implications – This study is not limited to one industry; therefore, future studies may focus on one industry and detect the pattern of working capital components in the particular industry. This study focuses on quantitative numbers to explain board diversity's interaction in working capital management to maximise shareholders' wealth. Future studies may consider a qualitative discussion to describe the quality of women's presence on the board, education level and educational background of board members.

Originality/value – Unlike most studies in which authors relate working capital and board diversity to firm performances separately, this study combines both components and analyses whether board diversity can act as a moderator effect. As part of corporate governance, it is expected that board diversity can enhance working capital management efficiency.

Keywords Working capital, Board diversity, Gender diversity, Education diversity, Profitability, Firm value, LQ45

Paper type Research paper

1. Introduction

In recent years, there has been increasing growth in the Indonesian economy. Several shreds of evidence could be found, for instance, through the 22.6% increase of market capitalisation in the Indonesian Stock Exchange (IDX) in 2017 (IDX, 2018). As the competition in the market is getting stronger, companies are striving to attract new investors and satisfy current shareholders by elevating their performance. In light of this, it is becoming crucial to determine what basis could help a company boost its performance. Existing studies recognised the critical role played by capital structure (external, long-term financing) and working capital (internal, short-term financing) in explaining a firm's performance (Vo and Ellis, 2016; Altaf and Shah, 2017; Kusuma and Bachtiar, 2018; Setianto and Pratiwi, 2019; Amponsah-Kwatiah and Asiamah, 2020; Kayani *et al.*, 2020).

In mid-2017, World Bank and IFC launched the Joint Capital Markets Program (J-CAP), intending to support the development of local capital markets. Indonesia is one of the targeted

Journal of Accounting in Emerging Economies

2042-1168
DOI 10.1108/JAEE-11-2018-0130

countries. As the capital market improves, the intangible factors become more critical. The soft factors include the quality of human capital, the culture of trading and risk-taking and the appreciation of transparency (Demekas and Nerlich, 2020). Therefore, this study is interested in discussing the role of corporate governance, particularly the diversity of board characteristics, in enhancing the firm performance that can develop Indonesia's capital market. The specification of board characteristics is narrowed to gender diversity, education level and education background. Purkayastha *et al.* (2021) argue that education level and background are valuable resources so then positively associated with firm performance.

Meanwhile, a common condition that often occurs in developing countries is the high dependence of companies to rely on banks as a source of funding, because in addition to high volatility of capital flow, capital markets in developing countries have not fully developed (Estwick, 2016; Demekas and Nerlich, 2020). The primary issue in an emerging country like Indonesia is the increasing restriction on external financing, igniting the importance of working capital management as short-term financing for many companies. Companies in emerging markets could not follow the optimal working capital management policy due to future uncertainties in emerging countries (Chauhan and Banerjee, 2018).

Because the discussion continues to develop, working capital management is still interesting to discuss in Indonesia as a country included in the emerging market. Various measurements can be used as a proxy for working capital, and quite a few studies in Indonesia have used the cash conversion cycle. This study develops a discussion of working capital management in Indonesia with several novelties. The novelties shown in this study are the measurement of working capital with the ratio to total assets and measuring company performance through return on capital employed and Eva-Spread.

Working capital management (WCM) is a measure of liquidity that can identify the company's short-term condition, that is, to see whether the company can fund its day-to-day operation. Higher interest rates, greater political instability and an underdeveloped financial market are the characteristic of emerging economies. Those characteristics lead to working capital management's necessity to face liberalisation and rapid globalisation (Chauhan and Banerjee, 2018). Efficient working capital management would help the company quickly respond to unexpected changes in the market, like volatility in the interest rate and prices, and, therefore, to gain competitive advantages against its competitors (Abuzayed, 2012; Kusuma and Bachtiar, 2018; Gołaś, 2020). The exhaustive studies on this topic could be concluded that many factors affect working capital management and firm performances, including corporate governance. Separation of control (managers) and ownership (shareholders) creates an agency problem within the firms (Siagian *et al.*, 2013). An arrangement of governance instruments can be implemented to minimise this problem, in which a supervisory board to be put in place to monitor the agents (directors).

To be more effective in performing their roles, the board of directors should comprise a team of individuals who can incorporate their skills and capabilities. However, board characteristic, such as board diversity, is one factor that essential in supporting the role of board in achieving the goals of company (Ujunwa, 2012). According to the resource dependence theory, companies can enhance their performance by having board diversity (Fidanoski *et al.*, 2014; Purkayastha *et al.*, 2021). While most studies in board diversity have only focused on the gender diversity issue, such expositions are unsatisfactory because many diversity factors could be brought into analysis, such as the educational and intellectual capital on board. So far, however, there has been little discussion about the educational background diversity on the board.

As this study's scope is Indonesian companies, the LQ45 index is chosen as the research subject. Leading stocks in Indonesia, known as LQ45 stocks, are 45 blue-chip stocks companies that are well known and have good performance in terms of market capitalisation

emerald PUBLISHING

Journal of Accounting in Emerging Ecor

Working capital management and board diversity toward firm performance in Indonesia's LQ45

Journal:	*Journal of Accounting in Emerging Economies*
Manuscript ID	JAEE-11-2018-0130.R7
Manuscript Type:	Research Paper
Keywords:	LQ45, Profitability, Education Diversity, Gender Diversity, Board Diversity, Working Capital

Working capital management and board diversity towards firm performances in Indonesia's LQ45

Abstract

Purpose – This study examines the effect of working capital management and board diversity on firm profitability and firm value for a sample of Indonesian firms listed in the LQ45 index. The interaction of board diversity components with working capital management adds a comprehensive discussion to enhancing working capital management efficiency.

Design/methodology/approach – The study engages a panel data regression method. Data from a sample of LQ45 companies from 2010 to 2016 are analysed using a fixed and a common effect model. Board diversity is further analysed in interaction variables, whether it holds the moderating role in the relationship of working capital and firm performances. This study operates Return on Capital Employed (ROCE) as the proxy of profitability performance and EVA-Spread for the firm's value performance. The simultaneous effect test is used for the robustness test.

Findings – The results indicate that working capital management and board diversity have no significant impact towards profitability. However, they significantly positively impact firm value, meaning that the market is attracted by effective working capital management and board diversity. However, the interaction variable analysis shows that gender diversity and education level diversity weaken the impact of working capital management towards firm value.

Research limitations/implications– This study is not limited to one industry; therefore, future studies may focus on one industry and detect the pattern of working capital components in the particular industry. This study focuses on quantitative numbers to explain board diversity's interaction in working capital management to maximise shareholders' wealth. Future studies may consider a qualitative discussion to describe the quality of women's presence on the board, education level, and educational background of board members.

Originality/value – Unlike most studies in which authors relate working capital and board diversity to firm performances separately, this study combines both components and analyses whether board diversity can act as a moderator effect. As part of corporate governance, it is expected that board diversity can enhance working capital management efficiency.

Keywords Working Capital, Board Diversity, Gender Diversity, Education Diversity, Profitability, Firm Value, LQ45

Paper type Research paper

1. Introduction

In recent years, there has been increasing growth in the Indonesian economy. Several shreds of evidence could be found, for instance, through the 22.6% increase of market capitalisation in the Indonesian Stock Exchange (IDX) in 2017 (IDX, 2018). As the competition in the market is getting stronger, companies are striving to attract new investors and satisfy current shareholders by elevating their performance. In light of this, it is becoming crucial to determine what basis could help a company boost its performance. Existing studies recognised the critical role played by capital structure (external, long-term financing) and working capital (internal, short-term financing) in explaining a firm's performance (Vo & Ellis, 2016; Altaf & Shah, 2017; Kusuma & Bachtiar, 2018; Setianto & Pratiwi, 2019; Amponsah-Kwatiah &Asiamah, 2020; Kayani et al., 2020).

In mid-2017, World Bank and IFC launched the Joint Capital Markets Program (J-CAP), intending to support the development of local capital markets. Indonesia is one of the targeted countries. As the capital market improves, the intangible factors become more critical. The soft factors include the quality of human capital, the culture of trading and risk-taking, and the appreciation of transparency (Demekas and Nerlich, 2020). Therefore, this study is interested in discussing the role of corporate governance, particularly the diversity of board characteristics, in enhancing the firm performance that can develop Indonesia's capital market. The specification of board characteristics is narrowed to gender diversity, education level, and education background. Purkayastha et al. (2021) argue that education level and background are valuable resources so then positively associated with firm performance.

Meanwhile, a common condition that often occurs in developing countries is the high dependence of companies to rely on banks as a source of funding, because in addition to high volatility of capital flow, capital markets in developing countries have not fully developed (Estwick, 2016; Demekas and Nerlich, 2020). The primary issue in an emerging country like Indonesia is the increasing restriction on external financing, igniting the importance of working capital management as short-term financing for many companies. Companies in emerging markets could not follow the optimal working capital management policy due to future uncertainties in emerging countries (Chauhan and Banerjee, 2017).

Because the discussion continues to develop, working capital management is still interesting to discuss in Indonesia as a country included in the emerging market. Various measurements can be used as a proxy for working capital, and quite a few studies in Indonesia have used the cash conversion cycle. This study develops a discussion of working capital management in Indonesia with several novelties. The novelties shown in this study are the measurement of working capital with the ratio to total assets and measuring company performance through return on capital employed and Eva-Spread.

Working capital management (WCM) is a measure of liquidity that can identify the company's short-term condition, that is, to see whether the company can fund its day-to-day operation. Higher interest rates, greater political instability, and an underdeveloped financial market are the characteristic of emerging economies. Those characteristics lead to working capital management's necessity to face liberalisation and rapid globalisation (Chauhan and Banerjee, 2017). Efficient working capital management would help the company quickly respond to unexpected changes in the market, like volatility in the interest rate and prices, and, therefore, to gain competitive advantages against its competitors (Abuzayed, 2012; Kusuma & Bachtiar, 2018; Gołaś, 2020). The exhaustive studies on this topic could be concluded that many factors affect working capital management and firm performances, including corporate governance. Separation of control (managers) and ownership (shareholders) creates an agency problem within the firms (Siagian *et al.*, 2013). An arrangement of governance instruments can be implemented to minimise this problem, in which a supervisory board to be put in place to monitor the agents (directors).

To perform the roles effectively, the supervisory board should consist of a team of individuals who can combine their skills and competencies. However, the extent to which the board would be helpful in performing its roles depends on another factor, namely specific board characteristics, such as board diversity (Ujunwa, 2012). According to the resource dependence theory, companies can enhance their performance by having board diversity (Fidanoski *et al.*, 2014; Purkayastha et al., 2021). While most studies

in board diversity have only focused on the gender diversity issue, such expositions are unsatisfactory because many diversity factors could be brought into analysis, such as the educational and intellectual capital on board. So far, however, there has been little discussion about the educational background diversity on the board.

As this study's scope is Indonesian companies, the LQ45 index is chosen as the research subject. Leading stocks in Indonesia, known as LQ45 stocks, are 45 blue-chip stocks companies that are well known and have good performance in terms of market capitalisation and market liquidity. Andriansyah (2017) found that liquidity affects the level of information. As the stock is getting more liquid, the price will be more informative, and thus the stock prices will be more relevant in investment decisions. The index covers at least 70% of the stock market capitalisation and transaction values in IDX, which could be fit to represent the whole market. Larger market capitalisation companies lead to greater market efficiency; thereby, the LQ45 index companies attain higher market efficiency than the Indonesia composite index companies (Yang & Pangastuti, 2015; Kusuma & Bachtiar, 2018). Therefore, every company included in the list between 2010 and 2016 will be categorised as the population in this study. There is no intention to analyse the influence of different industrial sectors in LQ45 since this study focuses on companies' ability to maintain their liquidity. This study only excludes the financing sectors from the observation. The ability of companies in LQ45 to manage cash liquidity performance in improving their financial performance remains an exciting concern because it is an attraction for investors; thus, it keeps the company's shares liquid on the stock exchange. Most previous studies analyse board diversity and working capital management's direct effect on firm performance. This study selects board gender, board education level, and board education background as the board diversity components that moderate the working capital management in effect on firm performance and value. As part of an excellent corporate governance act, the board diversity components are expected to be moderating variables that can either enhance or weaken the impact of efficient working capital management on firm performance and firm value. Combining these elements is vital as the primary goal of corporate governance is to maximise the shareholder's wealth.

The rest of this study is structured as follows: literature review and development of hypotheses in Section 2. Section 3 presents the data and research methodology adopted in this study. Results, discussion, and practical implications are presented in Section 4 and finally closed by concluding remarks and limitations and suggestions for future research in Section 5.

2. Literature review and hypotheses development

2.1 Theoretical Background of WCM

Working capital is considered the life-giving force of an economic entity (Wasiuzzaman, 2015). Inefficient handling of working capital can deteriorate the entity (Singhania & Mehta, 2017); therefore, it is desired to maintain a balanced working capital, which can elevate a company's liquidity rating as well as accelerate the growth of shareholders' value. However, the underlying question has always been what kind of working capital management is considered excellent. Working capital management has two main objectives: liquidity and profitability (Ashworth, 2017). Several studies have argued that companies must maintain a low level of working capital (Abuzayed, 2012; Vural *et al.*, 2012), which means liquidity is at risk, but

profitability can be enhanced. Other authors found that a high working capital level is better (Singhania & Mehta, 2017), which means liquidity is sufficient. However, profitability is at risk since the money is tied up inside the working capital. Several empirical studies regarding working capital management have been done in emerging markets, as listed in Table 1.

Table 1 The empirical studies of working capital management in emerging markets

The Authors	Results
Chuan-guo et al. (2014)	The study argues that the net-working capital ratio reveals a company's financial strategy. The results explained that the influence of strategic choice on working capital would impact profitability. The study was done in China.
De Almeida & Eid (2014)	The working capital ratio was found positively on the company's market return in Brazilian public listed companies.
Jamil et al. (2015)	Cash conversion cycle (CCC), current assets turnover, current ratio, and net working capital ratio (NWCR) were the proxies for working capital management efficiency. The results disclosed that only NWCR that net operating profit and profit before interest and tax. The study was done in the industrial companies in Oman.
Wasiuzzaman (2015)	For financially constrained firms in Malaysia, the firm value was significantly increased by improving working capital management. As a result, the firm value was measured by economic value-added, while working capital was proxied by net working capital ratio.
Singhania & Mehta (2017)	Non-linear relationship between profitability and working capital management existed in the companies from emerging Asian countries. The cash conversion cycle and return on assets (ROA) measured working capital and profitability.
Altaf & Shah (2017)	There is an inverted U-shape relationship between working capital management and firm performance in India's companies. Working capital management metrics were CCC, CCC^2, inventory days, receivable days, and payable days. The firm performance was measured by ROA and Tobin'sQ
Kusuma & Bachtiar (2018)	Working capital management representations were CCC, inventory turnover ratio, payment period, current ratio, net working capital ratio, and collection period. In addition, ROA was used to measure firm performance. Inventory turnover and working capital ratio were favourable for the firm's performance of Indonesia's manufacturing companies listed in LQ45.
Setianto & Pratiwi (2019)	The net working capital was unfavourable to a firm's performance. However, the higher investment in working capital leads to a lower firm's risk. The study was conducted in Indonesia's manufacturing companies.
Laghari and Chengang (2019)	There was a U-shaped association between working capital and corporate performance. High investment in working capital management increases the corporate values in the Chinese listed non-financial firms. The net trade cycle was the proxy for working capital, while ROA and Tobins'Q measured the firm performance.
Amponsah-Kwatiah &Asiamah (2020)	Working capital management is proxied by inventory management, account receivables, account payables, cash conversion cycle, current assets, and current ratios. Those indicators were favourable for the profitability (ROA and ROE) of manufacturing firms in Ghana.
Gołaś (2020)	Working capital management is measured by inventory days, sales outstanding days, payable outstanding days, and the cash conversion cycle (CCC). Each indicator had a different influence on the ROA of companies in the Polish dairy industry.
Kayani et al. (2020)	Working capital management metrics were CCC, inventory conversion cycle, average collection period, and average payment period. CCC was found to be positive for financial performance in Australasian and New Zealand firms. However, other metrics influences were found to vary on the financial performance in both countries.

Table 1 displays that there are many proxies used to measure working capital management. The most famous tool is the cash conversion cycle (CCC), the time needed to collect the cash from selling the inventories. CCC is beneficial for small companies that are usually operated using few financial resources, in contrast to larger companies with better access to both money and capital markets (Baños-Caballero et al., 2019). Nevertheless, CCC is an absolute measure that is incapable of being used as a comparison metric for companies of different sizes (Ryan, 2018). Chuan-guo et al. (2014) define the working capital ratio as current assets minus current liabilities ratio to total current assets. The study argues that the index reveals the financial strategy of a company. The net working capital ratio is also useful for measuring working capital efficiency as it indicates the percentage of total assets in carrying the net working capital (Jamil, et al., 2015). That study finds that only CCC and NWCR positively impact net operating profit. Ba˜nos-Caballero et al. (2019) deploy NWCR to compare the working capital efficiency among thirty countries. The results imply that shareholders appreciate firms' NWC in developed countries.

The different methods in measuring working capital management and firm performance lead to different empiric results. The gap provided in Table 1 is why this study chose Net Working Capital Ratio (NWCR) as the proxy for working capital management. NWCR is defined as the proportion of the company's networking capital compared to its total assets. Altman initially used it in 1968 as part of Altman's Z score calculation (Bei & Wijewardana, 2012). They stated that NWCR is statistically proven to be the most valuable compared with other liquidity measurements. The formula is as follows (Bei & Wijewardana, 2012):

$$NWCR = \frac{Account\ Receivables + Inventory - Account\ Payables}{Total\ Assets} \quad (1)$$

The efficiency of WCM is crucial to meet both liquidity and profitability. It also takes planning and control to mitigate the risk of inability to service short-term obligations (Jamil et al., 2015). Acquiring trade credit has several advantages; companies do not have to take short-term debt or overdraft as well as if the payment period is long enough, then the cash could be used for other needs. In addition, paying the account payables on time will improve the company's image; therefore, it will likely get a longer future credit limit or period and avoid any contract breach. Occasionally, the company might benefit from early settlement discounts if it pays account payables early.

The novelty in this study is to present working capital management and board diversities as the main variables that affect profit performance and firm value. Working capital is a resource for companies to achieve their goals, namely increasing the welfare of shareholders. On the other hand, board diversity is also a resource to face the challenges of a dynamic business environment. Diversity within the board shows that the supervisory function carried out can represent various interests to reduce information asymmetry between management and shareholders. Moreover, this study displays board diversity components as moderating variables in the relationship of working capital with profitability and firm value. This study examines the diversity in board members' educational level and background, which are rarely discussed as part of corporate governance in working capital management. This study provides a different view from

Kusuma & Bachtiar (2018) and Setianto & Pratiwi (2019), limited to the manufacturing industry in Indonesia's working capital management scope. This current study does not limit the scope to specific industries; it only excludes the financial sector.

Furthermore, this study operates Return on Capital Employed (ROCE) as a proxy for profit performance. Besides, this study applies EVA-spread as a proxy for firm value. EVA directly shows how much the company has created value for shareholders and debtholders as a measure of performance.

2.2 Theoretical background of corporate governance

Many theories ground corporate governance mechanisms in organisations. For this research, two related theories are explained here: agency theory and resources dependency theory.

Agency Theory. Public limited companies' arrangement consists of a separate control (managers) and ownership (shareholders), which creates a problem within the firms (Siagian *et al.*, 2013). Managers may make decisions that are not beneficial to the shareholders. As the shareholders generally consist of many groups or individuals, they cannot directly monitor and control its management. In the end, firm performance can be harmed. According to Fama & Jensen (1983), the separation between ownership and control creates the need for an agency relationship, a contract between shareholders as principals and management as agents (cited in Fidanoski *et al.*, 2014). This theory has encouraged the implementation of numerous corporate governance principles and codes in some countries. These principles and codes' common traits suggest that an independent board is the core tactic for this conflict of interest between principals and agents (Fidanoski *et al.*, 2014; Purkayastha et al., 2021). Thus, agency theory suggests that the board has independent or outside board members to supervise directors or management and guide the company towards shareholders' interest. They are also expected not to conspire with directors to threaten shareholder interests because directors have incentives to build reputations as expert monitors.

Resource Dependency Theory (RDT). Companies operate in an open system and therefore need to trade and acquire resources to survive, which creates a dependency between firms and external units (Kılıç & Kuzey, 2016). There are four significant benefits of external connection as a source of resources: expertise and information, communication channels with an essential principle of the firm; commitments for support from relevant organisations or groups; legitimacy for the firm in the external environment. RDT stated that the board is a vital link between the company and the external resources that a company needs to maximise its performance (Fidanoski *et al.*, 2014). Theorists broadened the claim by stating that board members with diverse backgrounds, such as different skills, cultural backgrounds, and gender, will play strategic resources to the company, resulting in enhanced performance (Purkayastha et al., 2021). Trade credit is an essential resource of working capital as receivables' level directly influences inventory and cash (Paul et al., 2018). A company with high cash levels tends to reduce its accounts receivable levels. However, a company tends to increase its receivable level when the inventory levels rise (Paul et al., 2018).

Based on these theories, board diversity is usually seen as a positive trait for a company and a booster for higher firm performance. Therefore, in this research, three characteristics of board diversity are observed. The first is gender diversity. Gender diversity on board has been an increasingly prevalent issue attracting much attention from numerous parties, such as academicians, corporations, governments, and the

public. It has been preserved as a high public profile issue because of press reports, shareholder proposals, and investors' statements (Kılıç & Kuzey, 2016). According to PwC's 2016 Annual Corporate Directors Survey, the percentage of directors regarding gender diversity as an essential attribute increased from 2014 to 2015. The second is education level diversity. Companies face a challenge in the dynamic business environment where intellectual capital becomes an increasing need to enhance firm performance (Purkayastha et al., 2021). Educational and intellectual skills on the board, measured by the presence of executives with Ph.D. or equivalent degrees, are linked with a reduction in risk-taking (Fidanoski *et al.*, 2014).

Moreover, qualified board members with Ph.D. titles can be deemed the respected companies' most valuable strategic resources. These executives would ensure a functional board with high experience levels, reliability of judgment, intellectual ability, and integrity. Better qualifications of board members can increase firm performance and competitive advantage through professional expertise and advice.

The third is education background diversity. After many accounting scandals occurred, regulators have emphasised the need for more financial experts on board, as they can oversee accounting controls and reporting, thus preventing possibilities of failures (García-Sánchez *et al.*, 2017). It is expected that firms with more finance or business expertise on the Board of Commissioners will be more profitable than others who have less. Executives with accounting/finance expertise may be more sensitive to financial issues and can readily communicate their opinions to directors with similar work experience (Purkayastha et al., 2021). Therefore, it is expected that the board could mitigate any financial issues and improve its performance. In addition, the presence of financial and accounting experts on the board members could boost the board's monitoring role in order to recognise accounting and risk problems (García-Sánchez *et al.*, 2017). Among other board members, these executives can best distinguish between accounting policies' good or bad practices.

2.3 Corporate Governance in Indonesia

Sinnadurai (2018) revealed that the quality of corporate governance in several ASEAN countries, including Indonesia, Malaysia, the Philippines, and Thailand, operationalised corporate governance quality in the form of a board of directors' characteristics. Some very often used characters include board size, board independence, board education, and the number of committee meetings. The Jokowi government, since 2014, has implemented deregulation packages intending to boost private sector investment, but on the other side, it raised restrictions on foreign investment in particular industries. Public infrastructure development also involves the participation of private sector investment. This condition will undoubtedly affect government policies related to corporate governance. Product market competition is getting higher, so agency problems in companies are also getting higher. The high level of foreign ownership in Indonesia allows foreign shareholders to bring corporate governance practices in their country to Indonesia so that the quality of CG practices can differ from Indonesian government-owned companies. This study does not discuss ownership structure as an indicator of CG. Nevertheless, all companies that have been listed in the LQ45 index have a portion of foreign ownership. Hence, the companies that become the sample in this study can have good corporate governance practices.

Indonesia's Corporate Governance Code mainly requires limited liability companies in Indonesia to adopt two board systems: Board of Commissioners and Board of Directors. The Board of Commissioners' primary responsibilities supervise the management policy and advise the Board of Directors. Board of Commissioners is prohibited from participating in any operational decision-making. Their focus is on protecting the shareholders' rights and watching over the Board of Directors. On the other hand, the Board of Directors is fully responsible for the management and operation (IFC & OJK, 2014). In Indonesia, board terms in CG measurement refer to the Board of Commissioner (BOC). IFC Advisory Services in Indonesia (2014) formulates the article to set the qualification criteria for commissioners. Three of the qualifications are the professional expertise and education needed to be effective; international business experience, knowledge of the market, products, and competitors, and the ability to translate knowledge and experience into solutions. In addition, at least one member must know and have experience running finance and accounting in the listed companies. Centre for Governance, Institutions and Organisations NUS Business School (2012) reveals that in 2012 the percentage of female board members in Indonesia was 11.6%. It was favourably compared with other emerging markets, with an average of 7.2% women on their boards. Despite the highest level in the region, 40% of the IDX-listed companies did not have a single woman on the board. In 2017, the number of female BOC members in Indonesia reached 14.9% (IFC, 2018). In 2017, 40 companies had at least one woman on the board, and 31 companies had at least 30% female board members (IFC, 2018).

2.4 Firm Performances

In today's business competition, the main aim of companies is to enhance their performance. There are two dimensions of a firm's performance; accounting profitability and firm market value (Vural *et al.*, 2012). Accounting profitability has a historical and inward-looking focus that the companies use to track their internal concerns. Accounting profitability is created as part of the reporting mechanism, therefore, "distortable." Nevertheless, many authors still use it, and consequently, this research adopts accounting profitability. On the other hand, firm market value is the forward-looking indicator, and it is the value placed on the company by the market. Therefore, this value is objective in the sense that the company cannot distort it.

While there are many firm performance measures, especially profitability, this research uses Return on Capital Employed (ROCE). It is directly related to the management's ability to efficiently utilise the company's capital, which ultimately belongs to the shareholders (Ujunwa, 2012). The formula used is (ACCA F7, 2016):

$$ROCE = \frac{ProfitBeforeInterest\&Tax}{Capital\ Employed} \quad (2)$$

ROCE is a measure of management's efficiency in using the company's funds or resources in a given time. It is measured by comparing the firm's profits with the capital employed in making the profit and set as a percentage or fraction (Dalayeen, 2017). Profit Before Interest and Tax (PBIT) measures the company's profit, including all expenses except interest and income tax expenses. Creditors usually use

PBIT in order to measure a company's earning and paying capacity. On the other hand, capital employed can be derived by subtracting current liabilities from total assets. It is the total amount of capital used to acquire profits and the value of all the assets employed in a business. Generally, the higher the ROCE figure, the better it is for investors. It should be compared with returns on offer to investors on alternative investments of similar risk. ROCE has not been a popular proxy in existing research of working capital management and corporate governance (board diversity) despite its advantages. Some empirical studies use ROCE as the profitability tool, such as Dalayeen (2017) for the working capital topic, also Singh (2015) for corporate governance. Singh (2015) found a positive correlation between board diversity and ROCE in non-financial Indian companies.

The other category of firm performance, firm value, is measured using Economic Value Added (EVA) spread as it looks at the company's value left after making the required return. This metric can be used to assess the performance of the company's directors. The idea is that the directors will be motivated to improve EVA by investing in areas where the return is higher than the capital cost (Ryan, 2018). Compared to the other measures of performance that are based only on the concept of accounting profits, EVA spread acquires a new significance because it takes into account the cost of invested capital as shown in the following formulation (Anderson et al., 2011):

$$EVA\ Spread = \frac{NOPAT}{IC} - WACC \quad (3)$$

The first component of EVA Spread is the Net Operating Profit After Tax (NOPAT) is the PBIT adjusted for the income taxes. It measures the profit after excluding the costs and tax benefits of debt financing. The second one, Invested Capital (IC), has the same concept as Capital Employed. It is the funds invested in a business by shareholders, bondholders, and lenders. The last component, Weighted Average Cost of Capital (WACC), is the average rate of return expected by the investors measured in the market value instead of book value. The weights are the fraction of each financing source in the company's capital structure.

$$WACC = \frac{E}{D+E}R_e + \frac{D}{D+E}(1-\tau)R_d \quad (4)$$

Where D is the total debt, E is total equity, and R_d, R_e, dan τ are cost of debt before tax, cost of equity, and tax, respectively. The cost of equity (R_e) is measured in the capital asset pricing model (CAPM) by employing this formula:

$$R_e = R_f + \beta(Expected\ Return - R_f) \quad (5)$$

Where Expected Return - R_f is the Risk Equity Premium; R_f is Risk-Free Rate (Government's Treasury bills); and β is the firm's risk factor.

2.5 Working Capital Management and Firm Performance

According to the conservative approach of working capital investment, which refers to high working capital, companies that apply this approach will allow their customers longer payment terms to stimulate demand, which creates a large account receivable balance (ACCA F9, 2016). Inventory reserves are always

high to ensure customers' availability and minimise the risk of running out of material. It is hoped that the manufacturing process will run smoothly without any downtime. On the other hand, suppliers are paid on time to guarantee goodwill and relationship with them so that the risk of running out of materials will be minimised. As a result, it will establish a low balance of account payables.

Higher working capital indicates the increased inventories that can reduce the production breakdown and loss of demand. Moreover, increased receivables might increase sales because customers are given more time to pay. Therefore, accounting profitability can be improved. On the other hand, having a higher level of working capital means that the company is more liquid, thus seen as a lower risk investment by the market, and eventually increases its market value. Several authors have proved this theory. Wasiuzzaman (2015) found that improvements in NWCR significantly increase the firm value for financially constrained firms. Abuzayed (2012) and Dalayeen (2017) found a positive impact of working capital management towards firm performance. Mosazadeh *et al.* (2015) observed 127 Iran companies in 2009-2012 and discovered that working capital has a significant positive impact on EVA. In Indonesia, as displayed in Table 1, Setianto and Pratiwi (2019) studied the NWC in Indonesian manufacturing companies in 2010-2014, showing that the NWC's excess leads to lower company performance. Kusuma and Bachtiar (2018) studied the five proxies of working capital management of LQ45's manufacturing companies. The results indicated that inventory turnover and net working capital turnover are the best models in explaining the increase in firms' profitability. Charitou et al. (2012) examined companies from various industries in emerging ASIAN countries in 1998-2010, finding that after the global financial crisis, NWC could increase company profitability. This is because the company can utilise its resources efficiently, including working capital, thereby increasing its value. Hence, the hypotheses for the relationship between working capital and firm performance are postulated below:

H_1: NWCR has a positive impact towards firm performance

2.6 Board Diversity and Firm Performance

2.6.1 Gender Diversity

Female directors are believed to be much more likely to improve company performance and board effectiveness (PwC, 2016). Discussions about board diversity, and the demand for diversity in the board of directors, especially gender diversity, have been increasing since the 2000s (Oakley, 2000; Vinnicombe et al., 2013; Chapple and Humphrey, 2014). Opportunities for women to be nominated in board positions increase when they gain public trust through their education and experience (Hillman et al., 2002). A study revealed that female directors in large companies were chosen because of their international experience and postgraduate qualifications (Singh et al., 2008). Research at JSE Top 40 South African companies shows that gender diversity is a significant criterion in selecting directors. A policy that requires companies to have female directors represents 30% of the total number of directors (Mans-Kemp and Viviers, 2019).

The topic of gender diversity on boards in Indonesia is still interesting because of the patriarchal culture that assumes that men are more decent to place essential positions in companies (Yuliana and Kholilah, 2019). This patriarchal culture places men in a higher dignity and substantial control, not only in the community and the family but also in the scope of work. Family controls some of the listed companies

in Indonesia; hence, there is a high possibility that women's existence on the board is driven by family relationships (Darmadi, 2010). The study argued the negative influence of female boards on all listed companies' market performance in Indonesia. Pasaribu et al. (2019) mentioned that female directors' composition in the 100 biggest Indonesian listed companies remained the same from 2012 to 2014 at 11% - 12%. The study found that even though females on board can positively impact firm profit, women's participation on the board is still low. It might be due to females lacking practice, proficiency, and connection. Moreover, it might be because of the gender bias in the boards.

Fidanoski *et al.* (2014) found that the higher the number of female directors on board, the better the profitability and firm value. Kılıç & Kuzey (2016) discussed that gender diversity on the board positively impacts firm performance. Anderson *et al.* (2011) also argued that more women on board would enhance firm performance. Some literature stated that women are usually risk-averse than men to choose better investment decisions. In other words, males and females perceive the world differently; thus, they can find opportunities and utilise them differently (Fidanoski *et al.*, 2014). As they interpret information differently, they will make other choices.

Nguyen (2020) argued that women directors are associated with a lower cost of equity; thus, women's existence on the board can increase the company's value. Therefore, the gender diversity variable is calculated as the proportion of women on the management board. In this research, the figure is found by dividing the number of female commissioners by the Board of Commissioners' total size. Hence, the hypotheses for the relationship between gender diversity and firm performance are postulated below:

H_2: Gender Diversity has a positive impact towards firm performance

2.6.2 Education Level Diversity

The executives with PhD titles make board decisions more moderate because they rely increasingly on appropriate evidence, preventing excessive risk-taking. Ujunwa (2012) found that board education level diversity positively impacts financial performance. Fidanoski *et al.* (2014) discovered that education level diversity is favourable for profitability and firm value. Suhardjanto et al. (2017) argued that education level is vital to maximising the board of commissioners' role in Indonesia. They explained that the higher education level (doctoral level) makes the board members more rational in responding to the information. Darmadi (2013) proves that board members' educational qualifications in Indonesia enhance the company's profitability and values. The level of education describes board members' intellectual abilities, strengthening managerial skills to take risks and make business decisions.

To respond to Darmadi (2013) suggestion, the education level diversity variable in this study focuses on one educational qualification, the doctoral level. Therefore, the education level diversity is calculated as how many commissioners possess a PhD, doctoral, or equivalent degree. This research finds the figure by dividing the number of commissioners who have the degree by the board's total size. The hypotheses for the relationship between education diversity and firm performance are postulated below:

H_5: Education Level Diversity has a positive impact towards firm performance

2.6.3 Education Background Diversity

García-Sánchez *et al.* (2017) showed that education background diversity affects accounting quality positively. Purkayastha et al. (2021) argued that board education and professional experience are significant factors in firm performance. The education background diversity variable is calculated as how many commissioners possess financial/accounting/business education backgrounds. The figure is found by dividing the number of commissioners who has studied in those backgrounds with a supervisory board's total size. Thus, the hypotheses for the relationship between education diversity and firm performance are postulated below:

H_4: Education Background Diversity has a positive impact towards firm performance

2.6.4 The moderating effect of Board Diversity

The previous studies discussed in hypotheses two until four have shown the significant impact of board diversity on firm performance. The gender diversity, represented by the proportion of women on the board, was significant in enhancing the firm performance (Fidanoski et al., 2014; Kılıç & Kuzey, 2016; and Nguyen, 2020). Moreover, as Kagzi & Guha (2018) mentioned, the board with a higher number of females can approach a more diverse customer base and closer relationship with stakeholders. Eventually, this will enable the company to market in the broader market share with lower reliance on a small number of suppliers. Companies can also get more access to higher-quality resources to provide better product value. Purkayastha et al. (2021) explained that companies with high education levels and professional experience imply that they have productive strategic resources, resulting in effective monitoring roles to reduce agency costs. Due to the positive relation of board diversity in gender and education on firm performance, this research believes that these board characteristics can play their moderating role in the relationship of working capital and firm performance. Therefore, the hypotheses postulated below:

H5: Board diversities have a moderating impact on the relationship of working capital and firm performance

3. Data and methodology

3.1 Source of data and Sample

This research uses quantitative data, sourcing from mainly Bloomberg Terminal and the company's annual reports. The population includes 95 companies in the LQ45 Indonesia index between 2010 and 2016. Several pre-determined criteria are used to choose the sample:

Table 2 Observation Details

Sampling Criteria	Number of Observations
Number of companies included in LQ45 index between 2010 and 2016	95
Number of companies that are listed after 2010	(8)
Number of financial companies	(8)
Companies that did not publish a complete annual report in the required period	(3)
Number of companies that fulfil the criteria	76
Total samples used (76 companies x 7 years)	532

3.2 Empirical Models

This paper attempts to see the link between working capital, board diversity, and firm performance. Board diversity is expected to be the moderator in the relationship between working capital and firm performance. The board's expertise is one of the keys to efficient working capital management. The firm performance is separated into two forms, ROCE and EVA. ROCE is the accounting performance measure is deployed as the proxy of firm profitability. EVA is used as the proxy of firm performance to measure investors' financial performance. The firm's profitability is compared to the cost of capital measured from market value. When the EVA is higher than 0, the investors gain additional values from the profit. The results of previous studies, which have been discussed in terms of the relationship between variables, have provided evidence of the influence of gender diversity, educational levels, and educational backgrounds on company performance and value. Therefore, this study opens new ideas to assess the three diversity's role as moderating variables. This interaction is tested to prove board diversity's ability to increase working capital management efficiency to generate profits and increase firm value.

Hence, two linear regressions models can be constructed:

$$ROCE_{it} = \alpha_0 + \beta_1 NWCR_{it} + \beta_2 BGENDER_{it} + \beta_3 BLEVEL_{it} + \beta_4 BBACK_{it} + \beta_5 (NWCR * BGENDER)_{it} + \beta_6 (NWCR * BLEVEL)_{it} + \beta_7 (NWCR * BBACK)_{it} + \beta_8 SIZE_{it} + \beta_9 AGE_{it} + \varepsilon_{it} \quad \text{(model 1)}$$

$$EVA_{it} = \alpha_0 + \beta_1 NWCR_{it} + \beta_2 BGENDER_{it} + \beta_3 BLEVEL_{it} + \beta_4 BBACK_{it} + \beta_5 (NWCR * BGENDER)_{it} + \beta_6 (NWCR * BLEVEL)_{it} + \beta_7 (NWCR * BBACK)_{it} + \beta_8 SIZE_{it} + \beta_9 AGE_{it} + \varepsilon_{it} \quad \text{(model 2)}$$

Where:

$ROCE_{it}$	= Return on Capital Employed of *i* company in *t* period
EVA_{it}	= Economic Value-Added Spread of *i* company in *t* period
$NWCR_{it}$	= Net Working Capital of *i* company in *t* period
$BGENDER_{it}$	= Gender diversity in Board of Commissioners of *i* company in *t* period
$BLEVEL_{it}$	= Education level diversity in Board of Commissioners of *i* company in *t* period
$BBACK_{it}$	= Education background diversity in Board of Commissioners of *i* company in *t* period
$NWCR*BGENDER_{it}$	= NWCR times BGENDER of *i* company in *t* period
$NWCR*BLEVEL_{it}$	= NWCR times BLEVEL of *i* company in *t* period
$NWCR*BBACK_{it}$	= NWCR times BBACK of *i* company in *t* period
$SIZE_{it}$	= Firm size of *i* company in *t* period
AGE_{it}	= Firm age of *i* company in *t* period
α_0	= Constant of the regression
ε_{it}	= Error
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9$	= Regression coefficient of each variable

Firm size and firm age are the control variables deployed in this study, as those variables are also used in Ujunwa (2012), and Kılıç & Kuzey (2016). Firm size is a common determinant of firm performance (Kılıç & Kuzey, 2016). It is a relevant control variable in this research since many shreds of evidence stated that its size could influence its ability to make a profit. Firm size represents the scope of the company, which is measured from the logarithm of total assets. As time goes by, companies discover their strengths and weaknesses. They find more efficient and more effective ways to operate the company, reducing costs, improving quality, and improving the overall business process. Studies have shown that firms go through the financial growth cycle, and their capital structures vary with their ages (Ujunwa, 2012). Firm ages represent the years' company listed in the stock exchange market (Kılıç & Kuzey, 2016).

4. Research results and discussion

4.1 Descriptive Statistics

The descriptive statistics summarise all sample data's average, standard deviation, maximum, and minimum.

Table 3 Descriptive Statistics

Variable	Mean	S.D.	Min	Max
ROCE	0.169	0.328	-3.321	2.33
EVA	-0.032	0.551	-8.398	1.16
NWCR	0.127	0.172	-0.358	0.702
BGENDER	0.076	0.121	0	0.6
BLEVEL	0.167	0.187	0	0.833
BBACK	0.514	0.243	0	1
SIZE	13.125	0.483	11.125	14.418
AGE	15.852	17	8.2	1

Table 3 above shows that the dependent variable ROCE has a minimum score of -3.321, which is obtained from BNBR in 2014, and a maximum score of 2.33 from company LPPF in 2014. The negative ROCE indicates that some companies have negative profits. The second dependent variable, EVA spread, has a minimum score of -8.398, which belongs to company LPPF in 2011, and a maximum score of 1.16 belongs to LPPF in 2013. It has an average of -0.032, which means some companies were not generating value from the business's capitals invested. The independent variable, the negative NWCR showed in the minimum score of -0.358, is due to the company's negative working capital in 2012. On average, the sample companies' level of working capital is 12.7% of their total assets. The first moderating variable, BGENDER, which stands for female commissioners' ratio on total members of commissioners, has a minimum value of 0, indicating there are no female executives on board and a maximum value of 60%, which is obtained from MAPI in 2010 to 2013. The second moderating variable, BLEVEL, stands for the ratio of commissioners with a Ph.D. degree on the total members of commissioners , has a minimum value of 0, which belongs to quite many companies and a maximum of 0.833, which belongs to ANTM in 2012 and PGAS from 2015

to 2016. There are 16.7% of Ph.D. degree holders in the sample average. The last one, BBACK, which stands for the percentage of commissioners with financial or accounting education background in the total members of commissioners, has a minimum value of 0 and a maximum value of 1, which both belong to various companies. The maximum of 1 indicates that all board of commissioner members have financial or accounting background. The control variables, SIZE, representing the company's size, have a minimum value of 11.125, obtained from MYRX in 2010, and a maximum weight of 14.418, obtained from ASII in 2016. AGE represents the company's age, with a minimum value of 1 year and the maximum value of 40 years by SMCB in 2016.

4.2 Panel Data Model Estimation Method

In assessing panel data, the first thing to determine the estimation model is to choose the best one. After plotting with the OLS method, the best panel data model could be estimated using the Gretl software using the F Test, Breusch-Pagan Test, and Hausman Test. As there are two regressions, the tests are run twice. Below are the detailed results for each test:

Table 4 Summary of Panel Effect Tests

Dependent Variables	ROCE p-values	EVA p-values
Fixed Effects Estimator	6.926E-51	0.0313964
(A low p-value counts against the null hypothesis that the pooled OLS model is adequate, in favor of the fixed effects alternative)		
Result	Fixed Effect	Fixed Effect
Random Effects Estimator:		
Breusch-Pagan test statistic:	1.9162E-73	0.0924615
(A low p-value counts against the null hypothesis that the pooled OLS model is adequate, in favor of the random effects alternative)		
Result	Random Effect	Pooled OLS
Hausman test statistic:	0.000106987	0.854648
(A low p-value counts against the null hypothesis that the random-effects model is consistent, in favor of the fixed effects model)		
Result	Fixed Effect	Random Effect
Heteroskedasticity Test	Test statistic: TR^2 = 64.528050, with p-value = P(Chi-square(48) > 64.528050) = 0.055793 (> 0.05, Model has no heterokedasticity problem)	Test statistic: TR^2 = 154.450097, with p-value = P(Chi-square(48) > 154.450097) = 0.000 (< 0.05, Model has heterokedasticity problem)

These multiple regression models have met the normality, collinearity, and heteroscedasticity tests. However, EVA spread model, which contains a heteroscedasticity problem. Therefore, the panel effect model test is required to determine each model's panel effect. The results are presented in Table 4, which shows the variance results of the panel data effect.

Table 5 Comparison of Models in EVA spread model

	Fixed Effect	Random Effect	Heteroskedasticity Corrected	*Collinearity (VIF < 10,0)*
Constant	0.6054	−1.3827*	0.3401	
NWCR	0.1063	0.4421	0.3104***	5.220
BGENDER	0.1491	0.3372	0.1130*	2.085
BLEVEL	0.3537	0.3080*	0.1415**	1.762
BBACK	−0.3511	−0.1714	0.0089	1.546
NWCR*BGENDER	−0.8873	−1.5798	−0.6022	2.940
NWCR*BLEVEL	−2.2647	−1.3978	−0.7617**	2.022
NWCR*BBACK	1.1789*	0.5413	0.0100***	4.131
SIZE	−0.0595	0.1042*	−0.0307	1.216
AGE	0.0139	−0.0031	−0.0002*	1.171
Adjusted R-squared	0.0200	0.0368	0.0307	There is no collinearity problem
P-value(F)	0.0077	0.0621	0.0026	

*** Significant at the level 1%; ** significant at the level 5%; * significant at the level 10%.

In terms of ROCE as the dependent variable, a fixed-effect model is more appropriate to be applied. The regression model of EVA spread has three possibilities: fixed effect pooled OLS, or random effect. Due to the heteroskedasticity problem, the Pooled OLS model must be treated as a Heteroskedasticity Corrected model. Table 6 shows that the heteroscedasticity model is the most appropriate in EVA spread. The p-value of the F-test in this model is the smallest one compared to other models. Table 5 depicts the result of the fixed-effect model in the ROCE model.

Tables 5 and 6 indicate that in terms of the determinant coefficient test, regression with EVA spread as a dependent variable and regression with ROCE as a dependent variable has R^2 of 3.07% and 4.175%, respectively. It means that ROCE can be explained by the independent and moderating variables as much as 4.175%. In comparison, the rest of 95.825% is explained by other factors apart from the independent and moderating variables. The same thing for EVA can only be explained by independent and moderating variables as much as 3.073%, while factors outside this research explain the rest of 96.927%.

Table 6 Fixed Effect Model of ROCE

	Coefficient	*Std. Error*	*p-value*
Constant	1.6642**	0.7611	0.0293
NWCR	−0.3918	0.2649	0.1398
BGENDER	0.0969	0.2030	0.6333
BLEVEL	−0.1152	0.1004	0.2518
BBACK	−0.1541	0.0940	0.1017
NWCR*BGENDER	0.4137	0.8560	0.6292
NWCR*BLEVEL	0.6284	0.5164	0.2242
NWCR*BBACK	0.1050	0.4248	0.805
SIZE	−0.0940	0.0609	0.1234
AGE	−0.0092*	0.0054	0.0914

Within R-squared	0.04175
P-value(F)	9.63E-58

Note: *** Significant at the level 1%; ** significant at the level 5%; * significant at the level 10%.

4.3 Hypothesis Test

Table 7 depicts the coefficients and t-test's p-value of each variable. Firstly, the independent variable, NWCR has an insignificant influence on ROCE. However, NWCR has a significant positive impact on EVA.

Table 7 Regression Results Summary

Variable	ROCE		EVA	
	Coefficient	p-value	Coefficient	p-value
Constanta	1.6642**	0.0293	0.3401	0.1462
NWCR	−0.3918	0.1398	0.3104***	0.0008
BGENDER	0.0969	0.6333	0.1130*	0.0940
BLEVEL	−0.1152	0.2518	0.1415**	0.0161
BBACK	−0.1541	0.1017	0.0089	0.8358
NWCR*BGENDER	0.4136	0.6292	−0.6022**	0.0377
NWCR*BLEVEL	0.6284	0.2242	−0.7617***	0.0061
NWCR*BBACK	0.1050	0.8050	0.0100	0.9364
SIZE	−0.0940	0.1234	−0.0307*	0.0928
AGE	−0.0092*	0.0914	−0.0002	0.8737

Note: *** Significant at the level 1%; ** significant at the level 5%; * significant at the level 10%.

Next is the influence of the moderating variables towards dependent variables. All board diversity variables are insignificant to ROCE as the p-values are higher than the significance level. On the contrary, there is a significant positive impact on EVA from BGENDER (0.0940) and BLEVEL (0.0161). On the other hand, BBACK is insignificant towards EVA.

Similarly, the impact of interaction variables with the dependent variables follows a similar pattern with the moderating ones. All interaction variables are discovered to have no significant effect on ROCE. Both NWCR*BGENDER and NWCR*BLEVEL have a negative impact on EVA, while the NWCR*BBACK has an insignificant impact on EVA. Therefore, from this interaction, it can be concluded that only BGENDER and BLEVE moderate the relationship of NWCR towards EVA. SIZE as the control variable is found to have an insignificant impact on ROCE, but a significant negative towards EVA. On the contrary, AGE has a significant negative effect on ROCE, but a negligible impact on EVA.

4.4 Discussion and Theory Analysis

Based on the regression result, it was found that NWCR does not significantly influence ROCE. This result is consistent with Nobanee *et al.* (2011) and Thuvarakan (2014), which implies that the efficiency of working capital management does not play a significant role in enhancing the company's profitability. In this particular research, as the companies observed are listed firms from different industries, they might have various working capital management strategies, so the pattern could not be clearly seen. Moreover, as these companies have been included in the LQ45 index, they are large and have liquid shares. In turn, it

will give them more access to external financing so that they might not give enough attention to the working capital. They are supported by the fact that the sample's NWCR average is only 12.7%, with a 17.2% standard deviation. It means that, on average, only 12.7% of the company's total assets are working capital. The low working capital level might indicate two possibilities. First, the company is having cash flow difficulty, as its account payables are high. Secondly, the high account payables might be caused by favourable payment terms. The reason seems to be the latter for LQ45 companies considering their size and reputation. Nevertheless, it is apparent from the regression result that their level of working capital does not hold any meaning towards firm profitability.

Singhania & Mehta (2017) mention that working capital management will not affect the firms' profitability when the government grants credit facilities to the industries. When the government provides credit facilities to the industry, working capital management will not affect the company's profitability. 2014 and 2015 were the transition years for a presidential change in Indonesia. President Jokowi's administration, in the middle of 2014, has been trying to reduce Bank Indonesia's credit interest rates, even to the 1-digit level in 2016 (Hill & Negara, 2019). This policy was carried out to strengthen the economic growth stimulus. Financing provision by non-financial firms, known as trade finance, is an essential source of finance for companies in emerging markets (Huang et al., 2019; Wang et al., 2019; and Devalkar & Krishnan, 2019). In the low growth of financial competition, such as Indonesia, trade credit financing strongly impacts firm sustainability growth (Huang et al., 2019).

On the other side, NWCR has a significant positive impact on EVA spread. It is consistent with Wasiuzzaman (2015) and Mosazadeh *et al.* (2015), implying that a higher working capital level will increase firm value. It suggests that the market values liquidity. The shift in the economies into market-oriented ones should be noted, directly impacting the enterprise's management (Wolski & Bolek, 2016). Investors are looking at the return; the higher the risk, the higher the return expected. As the NWC increases, the company's liquidity will also increase, which creates a lower risk for investors. Therefore, the expected return rate will be lower, and EVA can increase as the cost of capital (WACC) drops. Alternatively, trade financing can be a source of working capital financing (Paul & Boden, 2014; Devalkar & Krishnan, 2019). It has been proved that high liquid companies that utilise the trade financing, can increase their investment in accounts receivable, thus can enhance their firm performance (Paul et al., 2012; Abuhommous, 2017; Huang et al., 2019; and Pattnaik et al., 2020)

The regression results show no significant influence of gender diversity on ROCE, which means that the number of female commissioners will not impact the company's accounting profitability. This might be caused by the low number of women on board. Julizaerma & Sori (2012) argued that only a few females are not enough to be taken seriously, but the company can benefit from women's talents with higher numbers. As seen from the descriptive statistics, the percentage of women on board in LQ45 companies is only 7.6% on average, which is lower than that of Asia's average figure of 14 (Groysberg *et al.*, 2017). Srivastava et al. (2018) mentioned that the number of female directors insignificantly towards firms' profitability is patriarchal. Indonesia has that kind of nature, which puts men on the top. Female members' influence brings multiple social outcomes rather than accounting performance (Hoobler et al., 2016). Suhardjanto et al. (2017) found that women members on the board of commissioners of Indonesia's mining

companies are insignificant in the firm's profit. Compared to other emerging countries, Suhardjanto et al. (2017) also found the same result for mining companies in Pakistan. Women on the board of commissioners can only be a company effort to comply with government regulations. However, the patriarchal culture is still quite strong in companies in Indonesia and perhaps in other emerging countries with the patriarchal culture. Therefore, the role of female directors in the company is not vital enough compared to men.

The regression shows a positive and significant influence of gender diversity on EVA Spread. It is consistent with Fidanoski *et al.* (2014) and Anderson *et al.* (2011). A woman is likely to be more risk-averse than man (García-Sánchez *et al.*, 2017). Francis et al. (2014) found that the risk aversion of female executives is linked with lower equity-based compensation and less risk (cited in García-Sánchez *et al.*, 2017). Nguyen (2020) mentioned that women on board provide more excellent monitoring, thus persuading investor confidence and leading to a lower cost of equity. Syamsudin et al. (2017) claimed that the higher the percentage of women in the commissioner board in Indonesia's manufacturing companies, the more diverse the board and the more successful the company. Critical Mass Theory mentions that it takes at least three or more women to make a fundamental difference, a distinctive perspective, competencies, and better financial performance (Strydom et al., 2016; Catalyst, 2013). Based on the data result, this research also showed a similar pattern. As the BGENDER goes up, the level of equity (W_e) decreases, and the level of debt (W_d) increases. As the cost of equity is higher than the cost of debt, female executives choose to use debt as the risk is lower than equity. Therefore, WACC decreases, and in turn, EVA will increase.

Research findings show no influence from education level diversity towards ROCE. Either having more or fewer executives with Ph.D. degree will not impact profitability. It is often found that high-performing companies are led by not highly educated people (Darmadi, 2013). Unobservable characteristics, for instance, entrepreneurial and leadership skills, may also play a significant role. Hiring board members with high education qualification are costly. Therefore, the effect of profitability increases by having Ph.D. level executives might be offset with the cost of hiring them, and in the end, there is no financial impact.

On the contrary, education level diversity was favourable for EVA. The result is consistent with Fidanoski *et al.* (2014), which means that when the number of executives on board with a Ph. D. degree increases, the firm value will also increase. Furthermore, educational and intellectual skill on board, measured by the presence of executives with Ph.D. or equivalent degrees, is linked with a reduction in risk-taking (Fidanoski *et al.*, 2014). It is proven in this research, as the BLEVEL increases, risk aversion increases, as could be observed through the declining pattern of equity level (W_e), so that WACC decreases and EVA increases.

This study failed to find the significant impact of education background diversity on ROCE and EVA. It is in line with Gottesman & Morey (2010), which means that having more or fewer executives with a financial background does not hold any meaning towards firm performance. Syamsudin et al. (2017) also argued that the commissioner board's education background has no impact on firm value. The possible explanation for this occurrence is that the supervisory board's task is only for monitoring purposes, and they have no right to make any operational decision (IFC & OJK, 2014).

4.5 Managerial implications

The regression showed varied results. In most cases (i.e., for NWCR, BGENDER, and BLEVEL), these variables show no significant effects towards ROCE, while their influence towards EVA showed significant results. In BBACK case, it showed no impact on both ROCE and EVA.

As the interaction results of NWCR*BGENDER and NWCR*BLEVEL toward EVA showed adverse effects, management cannot just increase the numbers as they will weaken the impact of working capital firm value. On the other hand, as the influence of BGENDER and BLEVEL as independent variables towards EVA is also positive, it means the company should have more females and more Ph.D. holders on board to enhance firm value. It implies a double-edged sword for the company. Therefore, it backs again to the company's working capital strategy, whether they want to have a high level of liquidity or rather invest in other areas. If they prefer increased working capital, it is better to have fewer female and Ph.D. holders. However, if they choose a low level of working capital, having more females and Ph. D. holders can boost firm value.

Moreover, both females and Ph.D. degree holders might prefer an aggressive working capital policy where they want the working capital level to be lower. They might want to cut the inventories, shorten the collection period from customers, and postpone payments to suppliers. While this might bring a positive impact towards profitability, the liquidity of the company is at risk. In turn, it might not be suitable for the company's value as it is determined by the market, depending on how the public perceives the company.

Thus, this research shows that the number does not always seem to be the case. There might be another component, such as quality, enhancing firm performance. For instance, instead of increasing the number of female commissioners, it might be better to hire a small number of females with a good reputation for their leadership ability or maybe with lots of experience. Therefore, the company maintains a low number of female executives. However, this small group of the minority has a higher power to influence the whole board or, even better, monitor the management.

As for the education level diversity, where the number of Ph.D. degree holders is in question, the company can have the option to look at the quality of the degree itself. Some criteria can be applied, such as the institution's reputation where the executives received the degree or the major of the education, whether it is in line with the company's business. These traits may enhance the company's value without increasing the number of commissioners. Another possible implication is that companies might want to combine all the characteristics. For example, companies have female executives with a Ph.D. degree and accounting background. The implication of firm performance might be different. Further analysis needs to be conducted to determine whether these combinations impact firm performance is better than only one characteristic. Nevertheless, while numbers are valuable, the quality that can create a multiplier effect is also crucial.

The education level of board members used in this study is limited to the doctoral level. The results showed that not many companies had board members with Ph.D. These results imply that business practitioners' interest to increase their education level to the highest level is still low. It is possible that in Indonesia and developing countries in general, the level of education is considered irrelevant to the ability

to manage a business. However, along with technological developments and market openness, formal education is necessary for developing countries. The selection of board members can be limited to the level of education. However, a high level of formal education can imply a person's maturity in leading and considering risks in making decisions. The results of this study are beneficial for companies and businesspeople and provide insights for higher education providers. State universities dominate the quality of higher education in Indonesia; on the other hand, Indonesia needs to increase its competitiveness globally (WENR, 2019). Therefore, it is an investment opportunity for the private sector in the education business.

Table 8 The Mean Difference (Group I – Group J)

Groups	NWCR * Board Gender (i)	NWCR * Board Education Level (i)
NOPAT (j)	-0.0684***	-0.0606**
WACC (j)	-0.0948***	-0.0870***

*** Significant at the level 1%; ** significant at the level 5%; * significant at 10%.

The moderation effect provided by the gender board and board education level on NWCR and EVA's relationship proved to be significantly negative. However, if observed in more detail, as shown in Table 8, gender diversity and the level of education of the Ph.D. are more influential in increasing the cost of capital (WACC) than an increase in net operating profit after taxes (NOPAT). In addition, it shows that both types of diversity in board structure have a moderate risk-taking effect.

For the robustness test, the simultaneous effect is conducted. Table 9 depicts that from the Breusch-pagan tests, there is no simultaneous effect from board gender to ROCE (p-value 0.4569 > 0.05) and also from board gender to EVA (p-value 0.8921 > 0.05). It supports the research models that assign board gender as the independent variable to influence firm profitability and firm value.

Table 9 The Simultaneous effect test

Variables	ROCE Coefficient	Bgender Coefficient	EVA Coefficient	Bgender Coefficient
Constanta	1.2108***	-0.1764	-1.3404*	-0.1895
NWCR	-0.0512	0.0949***	0.4357***	0.0951
ROCE		-0.0120		
EVA				0.0013
BGENDER	-0.0864		0.0271	
BLEVEL	0.1265	-0.0644**	0.1304	-0.0061**
BBACK	0.2241***	0.0099	-0.0309	0.0072
SIZE	-0.0990***	0.0169	0.9842*	0.0180
AGE	0.0085***	0.0016**	-0.0029	0.0015
Breusch-Pagan test for diagonal covariance matrix: Chi-square(1):	0.5536 [0.4569]		0.0184 [0.8921]	

*** Significant at the level 1%; ** significant at the level 5%; * significant at the level 10%.

5. Concluding remarks

5.1 Conclusion

This research aims to analyse the influence of working capital management and board diversity's influence on firm performance. In this case, board diversity acts as a moderating variable; therefore, this research also looks at the interaction between working capital management and board diversity in affecting firm performance. The research subjects used are derived from Indonesian listed companies included in the LQ45 index between 2010 and 2016. After applying several criteria to the population, the sample includes 76 non-financial companies, totalling 532 firm-year companies. The data are taken mainly from Bloomberg Terminal and the company's annual reports.

Two multiple regression models were developed for each dependent variable, ROCE, and EVA spread for this research. Based on the research results, it can be concluded that: NWCR is insignificant towards ROCE but positively significant towards EVA. Gender diversity is insignificant towards ROCE but positively significant towards EVA. Besides, education level diversity is insignificant towards ROCE, but positively significant towards EVA. Education background diversity is insignificant towards both ROCE and EVA spread. Based on the interaction variables results, only gender diversity and education level diversity toward EVA spread can act as moderating variables. NWC and board diversity indicators on financial performance appear to be more assertive in EVA Spread than in ROCE. EVA Spread can demonstrate the comprehensive ability of management to manage capital to produce returns. EVA Spread is the net return value after the company gives its obligations to investors through the cost of capital.

The gender and education level diversity in the board structure should be managed effectively; thus, it shows a favourable implication for firm value. The profitability is not impacted, but the main reason is that the number is too low to enjoy the benefits of having female executives and professional talent on board. Besides increasing the numbers, companies should be aware of the board's quality, such as the female commissioner's experience or the university's reputation where the commissioners get the Ph.D. degree. As board education background diversity does not affect firm performance, the regulators and business players can focus on other proxies that may enhance firm performance.

This study provides input for authorised parties in Indonesia to increase their role in helping increase company liquidity. The government can help improve people's purchasing power so that the company's working capital turnover can also be faster. Efficient working capital will increase the company's profitability and value, providing income for the country. Another factor that needs to be considered is the role of the government and the authorities in overseeing corporate governance, especially in terms of diversity. The lack of gender diversity in important positions in the company can also affect company performance.

5.2 Limitations and suggestions for future research

Below are some result limitations of this research that have been encountered during the conduct of the study. Hopefully, this can be a reference for improving future research. Second, this study is not specified

in one industry, as the primary trait for choosing the companies is those included in the LQ45 index. Even though this research result can also be used as Indonesia's representative condition, the result may not be accurate as each industry has a different environment and strategy. Therefore, future research can focus on one industry and detect the pattern in each one. Third, this study only observes the board diversity in terms of numbers, while quality is a more important aspect, i.e., quality. Future research might want to explore more about this topic, such as the implication of commissioner reputation, experience, and past background toward firm performance. Finally, future studies may consider a qualitative discussion to explain the quality of women's presence on the board, education level, and educational background of board members.

References

Abuzayed, B. (2012), "Working capital management and firms' performance in emerging markets: the case of Jordan", *International Journal of Managerial Finance*, Vol. 8 No. 2, pp. 155-179.

Abuhommous, A. A. A. A. (2017), "The impact of offering trade credit on firms' profitability", *Journal of Corporate Accounting & Finance*, Vol. 28 No. 6, pp. 29-40

ACCA F9. (2016). *ACCA Paper F9Financial Management* (9th ed.). London: BPP Learning Media Ltd.

Altaf, N., & Shah, F. (2017), "Working capital management, firm performance and financial constraints", *Asia-Pacific Journal of Business Administration*, Vol. 9 No. 3, pp. 206-219.

Amponsah-Kwatiah, K., & Asiamah, M. (2020), "Working capital management and profitability of listed manufacturing firms in Ghana", *International Journal of Productivity and Performance Management,* Vol. ahead-of-print No. ahead-of-print.

Anderson, R. C., Reeb, D., Upadhyay, A., & Zhao, W. (2011), "The Economic of Director Heterogeneity", *Financial Management*, Spring 2011, pp. 5-38.

Andriansyah, A. (2017), "The real effects of primary and secondary equity markets on firm performance", *International Journal of Managerial Finance*, Vol. 13 No. 4, pp. 397-418.

Ashworth, M. (2017), "Working capital management", Retrieved May 24, 2018 from http://www.accaglobal.com/gb/en/student/exam-support-resources/fundamentals-exams-study-resources/f9/technical-articles/wcm.html

Ba˜nos-Caballero, S., Garcia-Teruel, P. J., and Martinez-Solano, P. (2019), "Net operating working capital and firm value: A cross-country analysis, Business Research Quarterly, in press.

Bei, Z., & Wijewardana, W. (2012), "Working capital policy practice: Evidence from Sri Lankan companies", *Procedia - Social and Behavioral Sciences*, Vol. 40, pp. 695-700.

Catalyst (2013), Why Diversity Matters, Catalyst, New York, NY.

Centre for Governance, Institutions and Organisations NUS Business School (2012), "Indonesia boardroom diversity report 2012: Female footprints in IDX-listed companies. National University of Singapore.

Chapple, L., Humphrey, J. (2014), "Does board gender diversity have a financial impact? Evidence using stock prortfolio performance: *Journal of Business Ethics, Springer,* Vol. 122 No. 4, pp. 709-723.

Charitou, M., L. Petros, B. S. Halim. (2012), "The relationship between working capital management and firm's profitability: An empirical investigation for an emerging Asian country" *International Business and Economics Research Journal*, Vol. 11 No. 8, pp. 839 - 848.

Chauhan, G. and Banerjee, P. (2018), "Financial constraints and optimal working capital – evidence from an emerging market", *International Journal of Managerial Finance*, Vol. 14 No. 1, pp. 37-53.

Chuan-guo, L., Hui-min, D., Shou, C., and Yan, Y. (2014), "Working capital management, corporate performance, and strategic choices of the wholesale and retail industry in China", *The Scientific World Journal,* vol. 2014, Article ID 953945, 15 pages, 2014. https://doi.org/10.1155/2014/953945.

Dalayeen, B. (2017), "Working capital management and profitability of real estate industry in Jordan: An empirical study. *Journal of Applied Finance & Banking*, Vol. 7 No. 2, pp. 49-57.

Darmadi, S. (2010), "Board diversity and firm performance: the Indonesian evidence", *Corporate Ownership and Control*, 9. https://doi.org/10.22495/cocv8i2c4p4.

Darmadi, S. (2013), "Board members' education and firm performance: evidence from a developing economy", *International Journal of Commerce and Management*, Vol. 23 No. 2, pp. 113-135.

De Almeida, J.R., & Eid, W. (2014), "Access to finance, working capital management and company value: Evidences from Brazilian companies listed on BM & FBOVESPA", *Journal of Business Research*, Vol. 67 No. 5, pp. 924-934.

Demekas, D.G., Nerlich, A. (2020), "Creating domestic capital markets in developing countries: perspectives from market participants", EMCompass,no. 77; International Finance Corporation, Washington, DC. © International Finance Corporation. https://openknowledge.worldbank.org/handle/10986/33617 License: CC BY-NC-ND 3.0 IGO

Devalkar, S. K., & Krishnan, H. (2019), "The impact of working capital financing costs on the efficiency of trade credit", *Production and Operations Management*, Vol. 28 No. 4, pp. 878-889.

Estwick, S. (2016), "Principal–principal agency and financial flexibility in transition economies. *Journal of Business Inquiry*, Vol. 15 No. 1, pp. 33–54.

Fidanoski, F., Simeonovski, K., &Mateska, V. (2014), "The impact of board diversity on corporate performance: new evidence from Southeast Europe", *Corporate Governance in the US and Global Settings*, pp. 81-123.

García-Sánchez, I., Martínez-Ferrero, J., & García-Meca, E. (2017), Gender diversity, financial expertise and its effects on accounting quality", *Management Decision*, Vol. 55 No. 2, pp. 347-382.

Gołaś, Z. (2020), "Impact of working capital management on business profitability: Evidence from the polish dairy industry", *Agricultural Economics (Czech Republic)*, Vol. 66 No. 6, pp. 278-285.

Gottesman, A., & Morey, M. (2010), "CEO educational background and firm financial performance", *Journal of Applied Finance (Formerly Financial Practice and Education)*, Vol. 20 No. 2, pp. 70-82.

Groysberg, B., Bell, D., & Cheng, Y. (2017). *2016 Global Board of Directors Survey*. Spencer Stuart. Retrieved June 8, 2018, from https://www.spencerstuart.com/-/media/pdf%20files/research%20and%20insight%20pdfs/wcd-board-survey-2016_041416.pdf

Hill, H., and Negara, S. D. (2019), "The Indonesian Economu in Transition: Policy Challenges in the Jokowi Era and Beyond, *ISEAS – Yusof Ishak Institute,* pp. 132-135

Hoobler, J.M., Masterson, C.R., Nkomo, S.M. and Michel, E.J. (2016), "The business case of women leaders: meta-analysis, research critique, and path forward", *Journal of Management*, Vol. 4 No. 6, pp. 2473-2499.

Huang, L., Ying, Q., Yang, S., & Hassan, H. (2019), "Trade credit financing and sustainable growth of firms: Empirical evidence from China", *Sustainability*, Vol. 11 No. 4, 1032.

IDX. (2018). *IDX Statistics 2017.* Retrieved April 13, 2018, from http://www.idx.co.id/media/1552/20180228_idx-annually-2017.pdf

IFC, & OJK. (2014). *The Indonesia Corporate Governance Manual* (1st ed.). International Finance Corporation. Retrieved May 26, 2018 from https://www.ifc.org/wps/wcm/connect/64185f0042cc3ab0b145fd384c61d9f7/Indonesia_CG_Manual_Feb2014.pdf?MOD=AJPERES

IFC. (2018), "Board diversity in ASEAN. Retrieved November 1, 2019 from https://www.ifc.org/wps/wcm/connect/21f19cfe-9cce-4089-bfc1-e4c38767394e/Board_Gender_Diversity_in_ASEAN.pdf?MOD=AJPERES&CVID=mM0qVBn

Jamil, S. A., Al Ani, M. K., and Alshubiri, F. (2015), "The effect of working capital management efficiency on the operating performance of the industrial companies in Oman", *International Journal of Ecinimics and Financial Issues*, Vol. 5 No. 4, pp. 897-904.

Julizaerma, M., & Sori, Z. (2012), "Gender diversity in the boardroom and firm performance of Malaysian public listed companies", *Procedia - Social And Behavioral Sciences*, Vol. 65, pp. 1077-1085.

Kagzi, M., & Guha, M. (2018), "Does board demographic diversity influence firm performance? Evidence from Indian-knowledge intensive firms", *Benchmarking: An International Journal*, Vol. 25 No. 3, pp. 1028-1058.

Kılıç, M., & Kuzey, C. (2016), "The effect of board gender diversity on firm performance: evidence from Turkey", *Gender in Management: An International Journal*, Vol. 31 No. 7, pp. 434-455.

Kusuma, H., & Bachtiar, A. D. (2018), "Working Capital Management and Corporate Performance: Evidence from Indonesia," *Journal of Management and Business Administration, Central Europe, Sciendo*, Vol. 26 No. 2, pp. 76-88,

Laghari, F. and Chengang, Y. (2019), "Investment in working capital and financial constraints: Empirical evidence on corporate performance", *International Journal of Managerial Finance*, Vol. 15 No. 2, pp. 164-190.

Lee, K. T., Hooy, C. W., & Hooy, G. K. (2012), "The value impact of international and industrial diversifications on public listed firms in Malaysia", *Emerging Market Review*, Vol. 13 No. 3, pp. 366–380.

Mans-Kemp, N. and Viviers, S. (2019), "The role of nomination committees in diversifying boards in an emerging market context", *Corporate Governance*, Vol. 19 No. 4, pp. 648-668.

Mosazadeh, A., Aslani, A., & Hassanzadeh, M. (2015), "The relationship between the measures of working capital and economic values added (EVA) a case study of companies listed on Tehran Stock Exchange", *International Journal of Humanities and Cultural Studies,* Vol. 2 No. 2, pp. 615-621.

Nguyen, P. (2020), "Board gender diversity and cost of equity", *Applied Economics Letters*, Vol. 27 No. 18, pp. 1522-1526

Nobanee, H., Abdullatif, M., & AlHajjar, M. (2011), "Cash conversion cycle and firm's performance of Japanese firms", *Asian Review of Accounting*, Vol. 19 No. 2, pp. 147-156.

Oakley, J. (2000), "Gender-based barriers to senior managementpositions: Understanding the scarcity of female CEOs", *Journal of Business Ethics*, Vol. 27 No. 4, pp. 321–334.

Passaribu, P., Masripah., & Minosa, B. (2019), "Does gender diversity in the boardroom improve firm performance? Evidence from Indonesia", *Economics and Finance in Indonesia,* Vol. 65 No. 1, pp. 1-19.

Pattnaik, D., Kumar, S., & Vashishtha, A. (2020), "Research on trade credit–a systematic review and bibliometric analysis", *Qualitative Research in Financial Markets*, Vol. 14 No. 4, pp. 367-390.

Paul, S., & Boden, R. (2014), "Trade credit: A literature review", *Research Report British Business Bank*, pp. 1-39.

Paul, S. Y., Devi, S. S., & Teh, C. G. (2012), "Impact of late payment on Firms' profitability: Empirical evidence from Malaysia", *Pacific-Basin Finance Journal*, Vol. 20 No. 5, pp. 777-792.

Paul, S.Y., Guermat, C. and Devi, S. (2018), "Why do firms invest in accounts receivable? An empirical investigation of the Malaysian manufacturing sector", *Journal of Accounting in Emerging Economies*, Vol. 8 No. 2, pp. 166-184.

Purkayastha, A., Karna, A., Sharma, S., and Bhadra, D. (2021), "Board's human capital resource and internationalisation of emerging market firms: Toward an integrated agency–resource dependence perspective", *Journal of Business Research,* Vol. 136 No. 2021, pp. 391-407.

PwC. (2016). *2016 Annual Corporate Directors Survey.* PwC. Retrieved May 26, 2018, from https://www.pwc.es/es/publicaciones/consejos-y-buen-gobierno/2016-annual-corporate-directors-survey.pdf

Ryan, N. (2018), "Economic value added versus profit-based measures of performance", Retrieved June 9, 2018, from http://www.accaglobal.com/us/en/student/exam-support-resources/professional-exams-study-resources/p5/technical-articles/economic-value-added-part2.html

Salim, M., & Yadav, R. (2012), "Capital structure and firm performance: evidence from Malaysian listed companies", *Procedia - Social and Behavioral Sciences*, Vol. 65, pp. 156-166.

Setianto, R. H., & Pratiwi, A. (2019), "Working Capital Management in Indonesia: An analysis on overinvestment and underinvestment firms", *Gadjah ada International Journal of Business*, Vol. 21 No. 1, pp. 1-18.

Siagian, F., Siregar, S., & Rahadian, Y. (2013), "Corporate governance, reporting quality, and firm value: evidence from Indonesia", *Journal of Accounting in Emerging Economies*, Vol. 3 No. 1, pp. 4-20.

Singh, A. (2015), "Corporate governance and its relationship with the roce and pbit: an empirical investigation in Indian scenario", *Asian Journal of Research in Business Economics and Management*, Vol. 5 No. 4, pp. 88-95.

Singh, V., Terjesen, S. and Vinnicombe, S. (2008), "Newly appointed directors in the boardroom: how do women and men differ?", *European Management Journal*, Vol. 26 No. 1, pp. 48-58

Singhania, M., & Mehta, P. (2017), "Working capital management and firms' profitability: evidence from emerging Asian countries", *South Asian Journal of Business Studies*, Vol. 6 No. 1, pp. 80-97.

Sinnadurai, P. (2018), "A Vision for Malaysian and other ASEAN researcher to contribute to internal agency - theory-based literature", *Asian Journal of Business Accounting*, Vol. 11 No. 2, pp. 1-54.

Strydom, M., Au Yong, H. and Rankin, M. (2016), "A few good (wo)men? Gender diversity on Australian boards", *Australian Journal of Management*, Vol. 42 No. 3, pp. 404-427.

Suhardjanto, D., Alwiyah., Utami, M. E., and Syarifuddin, M. (2017), "Board of commissioners diversity and financial performance: A comparative study of listed mining industry in Indonesia and Pakistan", *Review of Integrative Business and Economics Research*, Vol. 6 No. 1, pp. 131-142

Syamsudin, S., Setiany, E., and Sajidah, S. (2017), "Gender diversity and firm value: A study on boards of public manufacturing firms in Indonesia", *Problems and Perspectives in Management*, Vol. 15 No. 3, pp. 276-284.

Thuvarakan, S. (2014), "Impact of working capital management on profitability in UK manufacturing industry". *London South Bank University Press*.

Ujunwa, A. (2012), "Board characteristics and the financial performance of Nigerian quoted firms", *Corporate Governance: The International Journal of Business in Society*, Vol. 12 No. 5, pp. 656-674.

Vinnicombe, S., Burke, R.J., Blake-Beard, S. and Moore, L.L. (2013), Handbook of Research on Promoting Women's Careers, Edward Elgar Publishing, Cheltenham

Vo, X., & Ellis, C. (2016), "An empirical investigation of capital structure and firm value in Vietnam", *Finance Research Letters*, Vol. 22, pp. 90-94.

Vural, G., Sökmen, A. G., & Çetenak, E. H. (2012), "Effects of working capital management on firm's performance: evidence from Turkey", *International Journal of Economics and Financial Issues,* Vol. 2 No. 4, pp. 488-495.

Wang, X., Wu, W., Yin, C., & Zhou, S. (2019), "Trade credit, ownership and informal financing in China", *Pacific-Basin Finance Journal*, Vol. 57, 101177

Wasiuzzaman, S. (2015), "Working capital and firm value in an emerging market", *International Journal of Managerial Finance*, Vol. 11 No. 1, pp. 60-79.

WENR. (2019), "Education in Indonesia", retrieved from https://wenr.wes.org/2019/03/education-in-indonesia-2, Feb 2nd, 2021.

Wolski, R., & Bolek, M. (2016), "Liquidity – Profitability relationship analysed once again. The case of Poland", *European Scientific Journal*, Vol. 12 No. 7, pp. 33-46.

Yang, A.S., & Pangastuti, A. (2015), "Stock market efficiency and liquidity: The Indonesia Stock Exchange merger", *Research in International Business and Finance,* Vol. 36 No. 2016, pp. 28-40.

Yuliana, I., & Kholilah. (2019), "Investment decision, gender diversity and firm value: Is gender important in Indonesia?", *Jurnal Reviu Akuntansi dan Keuangan*, Vol. 9 No. 3, pp. 387-395.