

# Do high costs in the capital structure contribute to the nexus between board gender and financial performance?

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**Abstract.** This study examines the relationship between board diversity and financial performance. Additionally, the capital structure serves as a moderating variable. BOD diversity includes gender, nationality, and age, while capital structure is measured by leverage. Previous studies have not considered the moderating role of capital structure, even though leverage is a trade-off between benefits and costs. Data were collected from 162 firms listed on the Indonesia Stock Exchange from 2017 to 2020, and panel data was analyzed. Directors are more likely to be homogeneous. Specifically, female directors did not impact return on assets (ROA) and equity (ROE), even when their numbers continually increased. Surprisingly, when female directors were moderated by leverage, profitability became negative and significant. Moreover, before and after moderation, old directors did not differ negatively or significantly. In addition, foreign directors initially increased ROA and ROE, but the empirical results were reversed when it was moderated by leverage. The number of female directors chosen by companies should be corrected not as a result of a positive image but based on their competence. Additionally, it is necessary to reduce the role of the old director. To reiterate, the level of debt becomes a significantly stressful cost signal.

**Keywords:** board diversity, financial performance, capital structure

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## Introduction

Based on Purnamasari's (2015) research, profitability comprises two words: profit and capability. Profitability can be interpreted as the ability of an investment (company) to get returns from its users. This edifies that the company's goal is to earn profits in return for capital owners, and making profits is very important for the company's survival and growth in the long term. Further, after the collapse of WorldCom and Enron, companies paid increased attention to corporate governance, transparency, and the level of disclosure, and here the board of directors (BOD) played an essential role in overseeing management and as the right hand of shareholders (Akpan & Amran, 2014). The BOD is an essential mechanism in determining corporate strategy and aligning the interests of insiders, leading to supporting minority shareholders (Darmadi, 2011). A poor corporate governance system can negatively affect the performance of a company as well as the shareholder value (Ujunwa, 2012). Informed by the above, the research question lies in the heterogeneity of BOD beneficial to companies operating in the context of developing countries such as Indonesia. Akpan & Amran (2014) and Ali et al., (2014) studied corporate governance and company performance but did not consider nationality, whereas Alshirah et al., (2022) did not consider the age and nationality of BOD.

According to Alshirah et al., (2022) in their research, gender equality is one of the most critical issues in corporate governance today. Several essential and interdependent principles are highlighted, including equal opportunities for men and women to obtain employment opportunities. In several studies, it has been demonstrated that the presence of women on the boardrooms improves the company's performance (Adams & Ferreira, 2009; Ali et al., 2014; Huynh et al., 2022). Additionally, Adams & Ferreira (2009) reported that according to their study, 24% of women hold top positions in developed countries and that this proportion is expected to increase to 30% in other countries, including Spain, Italy, and France, as a result of their company laws. In the meantime, Indonesian regulations have not yet been regulated, so this is an opportunity to reexamine them in the context of a developing country such as Indonesia.

Further, Frijns et al., (2016) suggest that foreign directors can be detrimental to a company's performance due to the complex monitoring process and higher costs. Similarly, a study conducted by

Darmadi (2011) states that foreign directors have no impact on market performance that can influence profitability, so it can be concluded that this issue is not relevant to company performance. On the other hand, the results of a study conducted by Ujunwa (2012) in Nigeria indicate a significant positive effect on the performance of firms. Because of the regression results, most foreign board members in Nigeria have the mandate to represent investments that will benefit the organization in the long term.

Further, a limited number of studies have examined the relationship between director age and firm performance. Age diversity and firm performance are reported in different ways. Several studies, such as Kang et al., (2007) and Fernández-Temprano & Tejerina-Gaite (2020), stated that young directors significantly improve company performance, this is because young directors have a positive effect, which is supported by science and new technology. The findings of his research Darmadi (2011) support the statement that 47% of the young directors are under 50 years of age, while the other are older. Based on his research, it was determined that the BOD's age positively influenced market performance.

Having debt can be either a threat or an opportunity because of its "double-edged sword". Depending on the situation, debt can be used to finance activities and investments that can generate returns that cover the debt's cost (Haugen & Senbet, 2015). Simply put, borrowing money to invest can be very advantageous as long as the risk of the investment is evaluated, and the returns are more significant than the cost of the debt. However, the debt must be managed carefully, as it can bring severe financial instability if not appropriately managed. Therefore, the debt must be carefully evaluated to determine if it is a valuable tool or a risk to be managed (Haugen & Senbet, 2015). In fact, corporate governance is responsible for the level of leverage as it reflects their behavior in managing the risks and benefits associated with leverage. Good corporate governance can lead to better decision-making and more efficient use of debt. This, in turn, can lead to higher returns for investors and greater stability for the company. Nonetheless, corporate governance practices that employ haphazard to manage debt can adversely affect profitability due to the focus on paying the interest on the debt. When debt is managed haphazardly, the company can be forced to divert resources away from other activities, such as research and development, which can reduce the potential high profitability. Additionally, if the company is unable to service its debt, then its credit rating can be impacted, leading to higher borrowing

costs in the future and possibly even bankruptcy. Unfortunately, most previous studies (Pratheepkanth, 2011; Narsaiah, 2020; Shibanda & Damianus, 2015) have not explored leverage as a moderating factor between boards and profitability. Therefore, this study fills a gap by examining how leverage moderates the relationship between board diversity and profitability.

## Literature Review and Hypotheses

### *Resource Dependency and Trade-Off Theory*

Brahma et al., (2021) argue that Resource Dependence Theory (RDT) states that companies need board members who possess the necessary profiles of resources who can offer advice and counsel, as well as channels of communication and legitimacy. In this regard, companies should form boards with individuals with a wide range of experience across relevant demographics, which adds legitimacy and prestige to the organization and may also provide economic benefits for the company (Hafsi & Turgut, 2013). In addition, the BOD is a significant tool for allocating external resources and maintaining relationships with external organizations. This makes the image, expertise, background, reputation, capabilities, and external relations with other companies perform tasks more efficiently (Ramon-Llorens et al., 2021). The authors of Fernández-Temprano & Tejerina-Gaite (2020) argue that diversity on boards can result in more informed decision-making, which may result in a greater likelihood of a company's performance (Ali et al., 2014).

The capital structure of a company refers to its method of financing its assets in a combination (or trade-off) of liabilities and equity (Mardianto & Budiarsyah, 2021). This behaviour may indicate how well companies utilize funding sources to generate profits (Mohammad et al., 2019). In the left tail, if the company is financed entirely by equity, then the funding source is free from the financial risks posed by debt. At the same time, all funding comes from capital, implying that the financial industry is difficult to trust. In the right tail, corporate financing from debt allows companies to face lower agency costs. Meanwhile, debt also creates costs, namely the payment of the principal of the debt, its interest, and its penalty. Hence, trade-off theory provides an overview of how directors behave, namely assessing debt as a source of business expansion or a business obstacle.

### *Board Gender and Profitability*

Based on Arnaboldi et al., (2020) findings, the presence of female directors enhances the effectiveness of control. This is due to the more stringent and trustworthy nature of female directors. Furthermore, women are more knowledgeable about the market and consumer behaviour (Arfken et al., 2004). In some developed countries such as Norway and Spain, there are laws imposing gender quotas on corporate board (Teigen, 2012) as female directors contribute a unique perspective, actively ask questions during meetings, and make better decisions (Adams & Ferreira, 2009; Ramon-Llorens et al., 2021). Women's representation in the boardroom can have a positive impact on return on assets and this effect becomes even stronger when there are more than three women on the boardroom (Brahma et al., 2021; Huynh et al., 2022). On the other hand, Kang et al., (2007) reported that 33% of companies did not have any women directors and 51% had only one woman in their boardroom. Due to the common belief that women are less competent than men, they are often forced to work harder (Brown & Harris, 2022). Other than that, they are only considered to maintain the company's image and have no effect on ROE (Akpan & Amran, 2014). In addition, empirical evidence shows that the small number of female directors does not affect firm performance because they cannot influence company decisions (Kagzi & Guha, 2018). Further, according to Alshirah et al., (2022), diversity does not increase a company's return on equity. The findings of Darmadi (2011) and Gregory-Smith et al., (2012) indicated that female directors have a negative impact on ROA, while the study of Mínguez-Vera & Martin (2011) found a negative impact on ROE. Since this study adopts RDT, which indicates that higher board diversity results in higher human resources and profitability, the author has proposed the following hypothesis.

H1: The diversity of board gender positively affects profitability.

### *Board Nationality and Profitability*

Research conducted by Marimuthu & Kolandaisamy (2009) indicates that having foreign directors bring unique and complex aspects to imitate, which are not owned by local directors (Katmon et al., 2019). Foreign directors bring culture and knowledge that significantly affect strategic decisions, financial performance, and decision-making (Fernández-

Temprano & Tejerina-Gaite, 2020; Zainal et al., 2013). In a competitive international market, international investors are more likely to invest in companies that are managed in a professional, transparent, accountable, and reputable manner (Oxelheim & Randøy, 2003). Based on his research, Ujunwa (2012) found a positive and significant relationship between foreign directors and high monitoring quality. It should be noted, however, that the presence of different foreign directors can also present problems with cross-cultural communication, and limitations on attendance at meetings cannot improve the performance of a company (Frijns et al., 2016). The findings of Masulis et al., (2012), which indicate that 25% of foreign directors do not attend meetings, support this conclusion. Therefore, the author proposes the following hypothesis.

H2: BOD foreign diversity positively affects profitability

#### *Board Age and Profitability*

Throughout this paper, board age means the diversity of directors over young and old directors who represent experience and risk (Herrmann & Datta, 2005) so it has implications for capabilities and competencies (I. Khan et al., 2019). The older directors have a greater level of experience and productivity in decision-making (Ali et al., 2014). On the other hand, young directors bring new perspectives and care more about stakeholders (Ibrahim & Hanefah, 2016; Webb, 2004). Furthermore, they also tend to be highly educated, master new technologies, and be creative and innovative (Bonn et al., 2004), so they can accept new ideas for implementing expansion strategies (Cheng et al., 2010). The implication is that boards with age diversity increase the board's effectiveness (Ali et al., 2014) and therefore improve firm performance (Kang et al., 2007; Mahadeo et al., 2012). However, age differences can trigger conflict because there is no consensus in making decisions (Hafsi & Turgut, 2013). Consistent, Akpan et al., (2014) also revealed that board age does not affect company performance. It is more uneconomical, however, to have a diverse age group on the board as this creates more work pressure and lower performance as a result (Johnson et al., 1993). However, young and old directors complement one another, sharing expertise on diverse characters, improving asset management and the implementation of strategic plans. As a result, the return on assets (ROA) increases significantly (Fernández-Temprano

& Tejerina-Gaite, 2020). Therefore, the author proposes the following hypothesis.

H3: The diversity of board age positively affects profitability

#### *Capital Structure and Profitability*

Pratheepkanth (2011) has documented that the results of his research indicate that capital structure and financial performance are negatively correlated. Similar to Narsaiah (2020) there is a negative correlation between capital structure and return on equity. Long-term debt and total debt reduce financial performance, whereas short-term debt enables improved financial performance. Meanwhile, Khan et al., (2013) found that it had a positive effect on stock returns. This study has been supported by Shibanda & Damianus (2015), who demonstrate that financial leverage, as measured by the debt-to-equity ratio, affects financial performance variables. Additionally, the trade-off theory describes the manager as considering the costs arising from the trade-off between equity and debt.

A benefit of debt is the ability to expand the business, open branch offices, and increase employee rewards in order to increase sales. All of these activities contribute to the profitability of the company. Furthermore, debt also reduces agency costs because it provides liquidation funds so that investors are slightly weakened. At the same time, companies that have a limited number of equity funds are more productive as they do not compete with investors. When dealing with debt, however, the manager is responsible for the payment of the debt principal, interest, penalty, and trust (Haugen & Senbet, 2015). Hence, debt offers the "double-edged sword", namely as a threat or an opportunity; the author proposes:

H4: Capital structure positively moderates the nexus between board diversity and profitability

#### **Research Method**

This research focuses on a company listed on the Indonesia Stock Exchange (IDX) for the period 2017 to 2020. The study population consisted of 777 firms during this period. This study employs two criteria in purposive sampling in order to reach the intended research sample. First, firms must consistently issue annual reports as well as financial reports that have been audited. Data regarding board members must be collected in annual reports, while data concerning

finance must be collected in financial reports. As a result, this step eliminates the 311 firms that do not have complete data. Additionally, this study excluded 304 firms in which board diversity, such as the age of board members, was not transparent. As a result, 162 companies were included in the final sample of this study, resulting in 648 data. In this study, regression analysis was conducted using panel data.

Firm performance is the dependent variable as measured by return on assets and return on equity. Board diversity as an independent variable includes gender, age, and foreigners. The capital structure as a moderating variable is measured by leverage. Finally, the control variables are board size, non-executive directors, and company size. The operational definitions of variables are thoroughly illustrated in Table 1. Finally, the regression formula is illustrated below.

$$ROA_{it}/ROE_{it} = \beta_0 + \beta_1WD1_1 + \beta_2WD2_2 + \beta_3WD3_3 + \beta_4FORG_4 + \beta_5AGED_5 + \beta_6BODSI_6 + \beta_7NEDIN_7 + \beta_8FSIZE_8 + \varepsilon \dots \dots (1)(2)$$

$$ROA_{it}/ROE_{it} = \beta_0 + \beta_1WD1_1 + \beta_2WD2_2 + \beta_3WD3_3 + \beta_4FORG_4 + \beta_5AGED_5 + \beta_6CAST_6 + \beta_7WD1CAST_7 + \beta_8WD2CAST_8 + \beta_9WD3CAST_9 + \beta_{10}FORGCAST_{10} + \beta_{11}AGEDCAST_{11} + \beta_{12}BODSI_{12} + \beta_{13}NEDIN_{13} + \beta_{14}FSIZE_{14} + \varepsilon \dots \dots (3)(4)$$

Table 1  
Variables measurement

Variables	Abbreviation	Measurement
Return on Asset	ROA	$\frac{Net\ Comprehensive\ Income}{Total\ Equity}$
Return on Equity	ROE	$\frac{Net\ Comprehensive\ Income}{Total\ Equity}$
Women Director 1	WD1	Dummy variable, 1 if the number of women is one, otherwise is zero.
Women Director 2	WD2	Dummy variable, 1 if the number of women is two, otherwise is zero.

Variables	Abbreviation	Measurement
Women Director 3	WD3	Dummy variable, 1 if the number of women is three and more, otherwise is zero.
BOD Nationality	FORG	Percentage of board of directors (BOD) members who their origin from foreign.
BOD Age	AGED	Average age of directors
Leverage	CAST	$\frac{Total\ Liabilities}{Total\ Assets}$
BOD Size	BODSI	Number of BOD members
Non-Executive directors' independence	NEDIN	Percentage of nonexecutives directors' independence
Firm Size	FSIZE	Log natural of total assets

**Result and Discussion**

*Descriptive Analysis*

Table 2 shows the average ROA is 0.0641 (or 6.41%) and ROE is 0.1200 (or 12%). This means that the company is very capable of managing assets to generate a net profit. Furthermore, WD1 presents the number of female directors as one, which amounts to 0.33 (or 33%). WD2 presents the number of female directors at two, which is 0.11 (or 11%). WD3 represents the number of female directors equal to or more than three, which amounts to 0.05 (or 5%). This means that the probability of having female directors is getting smaller. Furthermore, FORG presented the number of foreign directors, which amounted to 0.09 (or 9%). It means that their existence is very small. Finally, AGED represents the age of directors, where the value is 52.70. This means that the average age of directors is old because the young age limit is 50 years (Katmon et al., 2019). As a moderating variable, CAST, which represents the capital structure, is 0.4548 (or 45.58%). This means that almost half of the company's assets are financed by debt.

The BODSI control variable that represents the BOD Size value is 5.21. NEDIN, which represents the value of non-executive directors' independence, is 0.42 (or 42%). FSIZE, which represents the firm size value, is 29.3193.

Table 2  
Descriptive statistic

Variables	N	Max	Min	Mean	Std D
ROA	648	0,5600	0,0003	0,0641	0,0608
ROE	648	0,7313	0,0003	0,1200	0,0952
WD1	648	1,00	0,00	0,33	0,47
WD2	648	1,00	0,00	0,11	0,31
WD3	648	1,00	0,00	0,05	0,22
FORG	648	0,80	0,00	0,09	0,18
AGED	648	72,67	37,00	52,70	5,16
CAST	648	0,8897	0,0035	0,4548	0,2078
BODSI	648	12,00	2,00	5,21	1,93
NEDIN	648	0,50	0,00	0,38	0,09
FSIZE	648	33,5205	25,4703	29,3193	1,6333

Regression Results

Table 3 presents the results of the testing hypotheses. WD1, WD2, and WD3 did not significantly affect on ROA and ROE. It means that the token issue does not validate that the presence of minority women has a negative impact on performance. On the other hand, their presence, whether a little or a lot, does not mean anything. Furthermore, foreign directors have a positive and significant effect on ROA and ROE. It means that the more foreign BOD, the financial performance will increase. Finally, board age has a significant negative with ROA and ROE. In other words, the older the BOD, the financial performance will decrease. Those results only answer how board diversity affects financial performance. Aiming to shed light on the individual character of the board, the discussion section below offers deep analysis. The result and discussion are separate to deliver their original characters.

Table 3  
The relationship between board diversity and financial performance

Variables	ROA	ROE
WD1	0.00667 (0.00561)	-0.00609 (0.0108)
WD2	-0.00104 (0.00731)	-0.00813 (0.0165)

Variables	ROA	ROE
WD3	0.00334 (0.0121)	-0.0220 (0.0245)
FORG	0.0772*** (0.0175)	0.0713** (0.0305)
AGED	-0.000853** (0.000434)	-0.000971 (0.000971)
BODSI	0.00284* (0.00172)	0.00546 (0.00340)
NEDIN	0.20138889 (0.0247)	0.24166667 (0.0486)
FSIZE	-0.00464*** (0.00165)	-0.000595 (0.00421)
Constant	0.210*** (0.0481)	0,100* (0.122)
Observations	648	648
Number of code	162	162
R-squared	73.60	87.80

Notes: \*, \*\*, \*\*\* indicate significance at the 10%, 5%, and 1% levels

Analysis of Board Diversity and Financial Performance

Referring to Table 3, it was found that there was a relationship that had no effect from female directors on financial performances. WD1, WD2, and WD3 had no significant effect on ROA, constituting 0.00667, -0.00104, 0.00334, consecutively. Those findings are identical when WD1, WD2, and WD3 have no significant effect on ROE, accounting for -0.00609, -0.00813, -0.0220. Additionally, this study is contradictory to Brahma et al., (2021) and Huynh et al., (2022). Indeed, this study is more accurate since it investigates the critical mass of women. In other words, when the number of female directors increased from one to two, they had no impact on financial performance. Likewise, when the number of female directors increases from two to three, they still do not contribute. There are two possibilities. First, women may not use their unique characteristics to formulate strategies, such as understanding the market (Arfken et al., 2004). The first reason that leads to their capabilities. A second possibility is that they were appointed because of the company's destructive strategy to demonstrate alignment on gender issues

rather than because of their capabilities (Akpan et al., 2014).

Further, the results of the descriptive statistics in Table 2 show that foreign directors who sit on the BOD show a small number, namely 9%. Furthermore, referring to Table 3, foreign directors have a positive and significant effect on financial performance. Specifically, foreign directors affect ROA with a value of 0.0772 with a 1% error rate. Likewise, the influence of foreign directors on ROE with a value of 0.0713 with a 5% error rate. The more foreign directors, the ROA and ROE will increase. Foreign directors are considered to have values that are not owned by local directors. The details are that they have good quality monitoring so that investors are more convinced that there are strong corporate governance practices. They understand more about international markets, which paved the way for them to learn different sales strategies such as culture, price, and tastes of consumers. The readiness of this strategy makes the company more mature in acquiring the market, leading to improving the company's performance. This study shows the same results as Oxelheim & Randøy, (2003) and Ujunwa (2012).

The results of descriptive statistics show that the average age of Indonesian directors is 52 (Table 2). Referring to Katmon et al., (2019), this age is classified as old (see: more than 50 years). Not surprisingly, there is a similar to this study's hypothesis that board age, which is predominantly old, does not have a satisfactory impact in terms of performance. First evidence that board age has no impact on ROE with a value of 0.000971. The second piece of evidence, board age has a negative and significant effect on ROA with a value of 0.000434 with a 5% error rate. It means that old directors tend not to be able to increase ROE, even reduce the company's ROA. The old directors are considered to be incapable of following the digital era, even though today's business is inseparable from the internet, such as catalogues and ease of doing transactions via digital banking. Simply put, they do not meet the expectations of creativity and innovation in finding strategies. Alternatively, young directors may be required (Bonn et al., 2004). The reason is that they tend to be the opposite of their (Cheng et al., 2010).

#### *Analysis Nexus between Board Diversity and Financial Performance: The Moderating Role of Capital Structure*

This section is highly helpful in illustrating and also answering how diversity boards affect profitability when they have pressure to take (handle) the advantages (disadvantages) of capital structure. The result of the moderating effect of capital structure is depicted in Table 4.

Table 4  
Capital structure moderation on the relationship between board diversity and financial performance

Variables	ROA	ROE
WD1	0.00160 (0.0123)	0,14027778 (0.0185)
WD2	0,09166667 (0.0168)	0,25069444 (0.0246)
WD3	0.0718*** (0.0217)	0.105*** (0.0310)
FORG	0.116*** (0.0293)	0.184*** (0.0429)
AGED	-0.00204** (0.000921)	0.00168 (0.00185)
CAST	-0.227** (0.110)	0.424** (0.215)
WD1CAST	0.09514 (0.0232)	-0.0396 (0.0374)
WD2CAST	-0.0316 (0.0286)	-0.0871* (0.0503)
WD3CAST	-0.143*** (0.0364)	-0.252*** (0.0560)
FORGCAST	-0.114** (0.0539)	-0.199** (0.0933)
AGEDCAST	0.00262 (0.00200)	-0.00695* (0.00380)

Variables	ROA	ROE
BODSI	0.00326* (0.00167)	0.00482 (0.00314)
NEDIN	0.0526** (0.0226)	0.108*** (0.0413)
FSISE	0.000993 (0.00162)	0.000466 (0.00286)
Constant	0.137** (0.0604)	-0.0835 (0.111)
Observations	648	648
Number of CODE	0,13819444	0.084
R-squared	50.52	91.01

Notes: \*, \*\*, \*\*\* indicate significance at the 10%, 5%, and 1% levels

As mentioned earlier, female directors have no contribution to increasing profitability. Also, this study proposed earlier that there are two possibilities; namely, women do not use their capabilities to understand markets and consumers, or maybe they are appointed not because of their capabilities (Arfken et al., 2004), but are appointed to fulfil a good image to earn legitimacy (Akpan & Amran, 2014). More accurately, this study takes the lead to conclude that the latter notion is more credible than the initial. Evidence, WD1 and WD2 have no effect on ROA, but WD3 has a negative effect on ROA by -0.143 with a 1% error rate. The interpretation of these financings was when there was an increase in female directors, and they felt pressured by debt. As a result, debt pressure makes them even less understand how to solve the cost of debt plus being demanded to improve performance. This analysis is not excessive since there has been a significant change from WD2 to WD3. WD2 has a negative and significant effect on ROE by -0.0871 at 10% and more strength, while WD3 has a negative and significant effect on ROE by -0.252 at 1%. That means female directors tend to argue that debt has high cost, principle, interest, and potentially penalized, for instance.

Aiming to earn practical implications, there is a need to back up the level of debt where its value was 45.48% (Table 2). This value empirically has extreme pressure on female directors. They tend to focus more on its cost rather than its advantages (Mardianto & Budiarsyah, 2021). To repeat, firms need to fix two things. First, the recruitment system should be more stringent in looking for highly competent women and

eliminating assumptions to seek legitimacy (Akpan & Amran, 2014). Perhaps the director must not forget that return is a simple rule in business rather than legitimate. Second, firms also need to decrease the debt level since it has a detrimental effect on the contribution of directors to sales (Haugen & Senbet, 2015; Narsaiah, 2020; Pratheepkanth, 2011).

Again, this study stresses that the cost of debt may be more difficult to control, thereby eliminating the potential for profit (Haugen & Senbet, 2015). This notion is credible since foreign directors had their empirical influence reversed before being moderated. Previously, they had a positive and significant on ROA and ROE. Meanwhile, they have a negative and significant on ROA and ROE when they have been moderated by capital structure, evidenced by -0.114 at 5% and -0.199 at 5%, respectively. This means that foreign directors have difficulty controlling the cost of debt. Foreign directors who were hired with the intention of opening international markets had to share their concentration on resolving bad internal financial problems (see: the level of debt at 45.48% - Table 2). The high level of debt causes them to be unproductive in developing product differentiation strategies and mapping the market (Oxelheim & Randøy, 2003). To achieve a positive impact, the firm should have less debt when the firm plans to employ foreign directors.

Further, before and after being moderated by capital structure, board age has identical results. It was a negative effect on profitability. When the capital structure is employed as moderating, board age has no significant effect on ROA at 0.00262, but board age has a negative and significant effect on ROE, evidenced by -0.00695 at 10%. Similar to the previous judgment, the cost of debt has a higher pressure to attribute directors (Haugen & Senbet, 2015), including old directors (see: 52 years is categorized as old - Table 2). It may be true that they have experience and knowledge so that their leadership is more mature in solving business cases (Ali et al., 2014; Ibrahim & Hanefah, 2016; Webb, 2004). However, empirical evidence proves otherwise. They may not be more creative than young directors (Bonn et al., 2004; Cheng et al., 2010). The creativity gap becomes even more glaring when debt puts pressure on older directors. They seem to have difficulty creating how to finance sales programs and how to settle debts. Thus, heterogeneity in employing young directors may be more beneficial for finding solutions and increasing creativity (Fernández-Temprano & Tejerina-Gaite, 2020).



## Conclusion

This study investigates the nexus between board diversity and profitability. Board diversity consists of a critical mass that is one, two, and three female directors, aged and foreign. Plus, the capital structure is employed as a moderating role. Hypotheses results show that there is no effect whatsoever when female directors are added continuously. Foreign directors are able to increase profitability, while the old directors have a negative effect. More profoundly, the capital structure has an extremely cost and leads to worst. When the capital structure is moderated, the more female directors, the more it has a significant negative impact on strong profitability. In fact, foreign directors lost influence, and they actually became negatively significant. The same finding was found in old directors.

To predict a positive impact, practical implications are provided. Female directors should be appointed based on capability, not as a forum for gender issues and seeking legitimacy. Old directors have been shown to be cognitively and innovatively declining, thus requiring heterogeneity where young directors will be able to fill the gaps in the boardroom. Foreign directors have positive signs of increasing sales, but they cannot tackle the cost of debt. Also, the firms have a critical level of debt. It means that there must be a choice between lowering the level of debt or eliminating foreign directors. It could be credible the initial notion since when the capital structure is removed, more positive influences are found.

This research is not without weaknesses. This study does not distinguish financial and non-financial firms. Unlike their counterparts, the financial industry has a unique capital structure (Mardianto & Budiarsyah, 2021). As a source of capital structure, conventional banking does not only calculate the short term and long-term liabilities, but also calculates the deposits of customers. However, their counterpart does not possess the later figure. Perhaps future studies can separate the two to find the uniqueness of different types of industries. Also, the recruitment system also needs to confirm how capable the directors are appointed, whether on the basis of legitimacy or competence.

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