

# DIRECTOR'S EXPERTISE, EXECUTIVE'S EXPERTISE, AND FIRM LEVERAGE IN MANUFACTURING INDUSTRY: EVIDENCE FROM TWO-TIER BOARD SYSTEM IN INDONESIA

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**Abstract:** This empirical research analyzes the director's and executive's expertise on the leverage of Indonesian manufacturing companies listed on the Indonesia Stock Exchange from 2014 to 2018. Ordinary Least Squares were used to answer the research problems and test the hypotheses. The leverage was measured using Total Short-Term Debt (STD), Total Long-Term Debt (LTD), and Total Debt in Book Value (TDBV). At the same time, the director's and executive's expertise is proxied by postgraduate and professional degrees in finance or accounting. This study finds that a director's professional degree in finance or accounting influences leverage by LTD but does not significantly affect leverage proxied by TDBV and STD. Then, an executive's postgraduate degree significantly impacts leverage proxied by TDBV and STD but does not significantly influence leverage proxied by LTD. Furthermore, the director's postgraduate degree and executive's professional degree in finance and accounting do not affect leverage in all proxies. In control variables, significant influences were found in the effects of firm size on LTD and STD, profitability proxied by ROA on LTD, profitability proxied by ROE on STD, and growth on LTD. Meanwhile, firm age, Non-Debt Tax Shield (NDTS), Earnings Volatility (EVO), and Tangibility (Tang) do not affect leverage in all proxies.

**Keywords:** Director Expertise, Executive Expertise, Leverage

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The most concerning matter for business organization leaders is capital structure. The correct capital structure decision can help improve the company's performance, while the wrong decision can

create financial pressure for the organization. The board of directors and executives play an essential role in corporate strategic decisions (Naseem et al., 2020), one of which is financial strategy. The scandals at Enron, Tyco International, Adelphia, Peregrine Systems, WorldCom, Lehman Brothers, and several economic crises in 1998, 2007, and 2008

are examples of failed governance and poor financial decision-making. The lack of financial expertise of board members was the main cause of the crisis (Kirkpatrick, 2009; Walker, 2009). A more independent financial expert on the board will reduce the risk of bad decisions and mitigate the company's collapse during the financial crisis (Minton et al., 2014). The board's expertise is one of the frameworks for corporate governance. A better corporate governance framework benefits firms through greater access to finance, lower cost of capital, better performance, and more favorable treatment for all stakeholders (Claessens et al., 2000). Corporate governance is correlated with financing decisions and corporate capital structure (Abor, 2007; Graham and Harvey, 2001; Litov, 2005). The ability and expertise of the executive are needed in capital selection. Companies that employ CEOs with business education backgrounds tend to have good financial performance (Bertrand and Schoar, 2003). These decisions affect investment behavior that can improve the company's finances healthily (Naseem et al., 2020).

In Indonesia, companies hire CEOs based on their expertise, experience, and ability to create shareholder value (Harymawan et al., 2019). According to the Indonesian Corporate Governance Manual, which is part of the implementation of the "governance roadmap" based on regulation number 21/POJK.04/2015 and circular letter number 32/SEOJK.04/2015 issued by OJK (Indonesia's Financial Service Authority) in June 2018, companies need to disclose and demonstrate the skills, knowledge, and experience necessary for boards of directors and executives to function effectively. In particular, companies need to ensure that executives responsible for accounting and finance have the knowledge or expertise in these areas. It ensures that executives and commissioners have the knowledge and ability to manage company finances. The suggestions in the governance roadmap are not yet mandatory. Still, they should be seen as an effort to improve corporate governance in protecting stakeholders and helping to shape a better investment climate.

Indonesia is a country with a unique and exciting market because it adopts the two-tier system, in which companies must have both boards of supervisors and board of management as required by the regulation of OJK number 33 /POJK.04/2014. Indonesian companies have both boards of directors and the board of executives. The board of commissioners in Indonesia has the same function as the board of executives in other countries. In contrast, the board of executives in Indonesia has the same function as the top management in other countries. The shareholders elect the members of these two boards. The board of commissioners performs advisory and supervisory roles on the board of directors, which consists of non-independent and independent members and is led by a president commissioner who is comparable to the chairman of the board in the context of a unified board structure. The board of executives performs day-to-day management activities. This board is relatively similar to the top management team in a country that adheres to a "one-tier system," and an executive president heads it (starting now referred to as the "CEO"). To maintain consistency with the terminology used in the one-tier system countries, for the remainder of this paper board of directors here will be referred to as the board of executives, and the board of directors will be referred to as the executive, following the research conducted by Harymawan et al. (2019).

Previous research frequently used agency theory in building the relationship between the board of executives and companies' financial structure. The theory explains how the power possessed by board members affects companies' financial structure and that the board discipline the management by leading them to maintain lower cash ratios and higher leverage (Jensen, 1986). Even so, there are still other studies with different findings. They base their argument on precautionary theory, which emphasizes that board members with expertise in business, finance, and accounting are considered to have better knowledge so that they will be more careful in making strategic decisions, especially in capital structure decisions. The precautionary principle is

the principle that was first used in environmental law, which states that all impacts on the environment and human health need to be avoided as early as possible. This principle is often incorporated into various environmental protection and preservation agreements. This principle was elaborated on in public policy statements and was usually included in many international agreements (Ellis, 2006). This principle developed along with the rapid enhancement of technology and the dynamic conditions of the environment. Our activities often have an unexpected negative (harmful) impact on society and the environment. Considering the potential large-scale hazards to public health and the environment due to technological developments and human activities, as mentioned above, public policymakers need caution, especially in their decisions that widely affect companies as a whole, for example. If business decisions, in this case, capital structure decisions, are taken using this principle, companies will likely avoid the risk of financial problems.

Many researchers studied the board's expertise, one of which is Jeanjean and Stolowy (2009). They asserted that financial expertise is negatively related to the type of boards (either two-tier or one-tier) and growth opportunities and is positively related to the board's independence, ownership concentration, and institutional ownership. In addition, Minton et al. (2014) examined the relationship between the financial expertise of board members and riskier investment decision-making. Swift (2018), Helmers et al. (2017), Gittelman and Kogut (2003), and Chuluun et al. (2017) found that board members with postgraduate degrees influence capital structure through RandD spending on valuable innovations. Those studies have also shown more the added value of precautionary theory, an approach that is contrary to that which has been frequently used, i.e., the approach used by Jensen (1986) in which board members with managerial discipline will be directed to maintain high leverage and low cash ratio. Studies conducted in countries using a two-tier board system are those conducted by Darmadi (2013) and Steinbrecher (2015). They used education and professional experience as the proxy for

the board's expertise and linked it to company performance and efficiency.

This research is indeed based on the research of Darmadi (2013), Iyer et al. (2020), and Minton et al. (2014). However, it is different in that this research uses a board of executives and board of directors' expertise, which in combination are called board's expertise, whose impacts on capital structure decisions are to be observed. Second, this study adds professional degrees in business, finance, or accounting as another proxy for the board's expertise and includes Short-Term Debt (STD) and Long-Term Debt (LTD) as other proxies for capital structure decisions. Third, in contrast to the research mentioned earlier, this study was conducted in a developing country whose Human Development Index (HDI) is relatively lower than in developed countries. Fourth, this study takes its samples from the manufacturing industry, a major industrial sector that has not been widely studied. Fifth, this research was conducted in a country that uses a two-tier board system so that it can differently discuss the background expertise of the board of commissioners and board of executives' members as well as CEOs. Sixth, this research uses precautionary theory, which is considered capable of explaining the relationship between the said variables. This study aims to examine the impact of board members' specific skills, i.e., in business, finance, or accounting, on capital structure decisions – either Short-or Long-Term Debt as they have different risks – in manufacturing companies listed on the IDX from 2014 to 2018 using precautionary theory as the approach. This research is expected to provide additional information for investors and company owners to select directors and executives by considering their business, finance, and accounting expertise.

## HYPOTHESIS DEVELOPMENT

This research discusses how precautionary theory influences the effects of the specific expertise of board members, in both boards of directors and board of executives, in business, finance, and accounting on capital structure decisions, either short- or long-term debt decisions.

### Expertise In Forms of Postgraduate Degrees Held by Directors and Executives

Capital structure, Sheikh and Wang (2011) describe a company's funding decisions, i.e., the mix between debt and equity, to be used in maximizing firm value. Each funding decision requires the financial manager to weigh the benefits and the costs of the selected funding sources: the optimal combination of debt and equity. According to Weston and Brigham (2004), the optimal capital structure is the one that optimizes the balance between risk and returns to maximize stock prices. The research of Fama and French (2002); Jensen and Meckling (1976); Modigliani and Miller (1963); Myers (1984); Modigliani and Miller (1958); Myers (1977); Myers (2001) has provided frameworks derived from a different point of view in explaining capital structure. This point of view can be categorized into three main popular theoretical approaches to capital structure: trade-off theory, pecking order theory, and agency cost theory.

Farang and Mallin (2018) showed a very significant and positive association between highly educated CEOs, estimated by CEOs with degrees such as MBA, M.Sc., and Ph.D., and corporate risk-taking. Francis et al. (2015) stated that companies in the United States generally choose professors to sit on their board of directors. It is no different from Indonesia. Several companies have placed academics on their boards of commissioners in recent years. They argued that commissioners and directors with an academic background are more independent in acting and making decisions. Executives and commissioners with educational backgrounds are also considered to have better analytical skills because they have a broader knowledge network. They are more careful in their actions and decisions thanks to logical thinking with scientific approaches. Executives with academic backgrounds can add different perspectives and increase the board's diversity. Academics, in general, are perceived to have higher ethical and social standards, which are essential factors to positively influence company performance (Cho et al., 2017). Based on the explanation above, the following hypotheses were proposed.

**Hypothesis 1a:** Director's expertise (postgraduate degree) negatively affects financial leverage

**Hypothesis 1b:** Executive's expertise (postgraduate degree) negatively affects financial leverage

### Expertise In Forms of Professional Degrees Held by Directors and Executives

Most previous studies used agency theory in explaining the relationship between corporate governance and capital structure decisions. The approach taken through this theory uses the supervisory principle, i.e., by encouraging agents to increase their leverage. The agents are indirectly forced to work more efficiently so that the company can pay its obligations by choosing the best and most profitable investment. The opposite approach to this is precautionary theory. This approach uses carefulness principles. Iyer et al. (2020) found that executives with higher skills tend to be more cautious. It is indicated by the company's leverage which tends to be lower. Executives prefer internal financing to debt because the company's plans for valuable innovation projects and investments will be visible in their RandD budget plan. However, it is dangerous for companies in an industrial environment to rely on innovation as a tool for competition. In particular, expertise in business and finance helps complete tasks in the field of financial management and choosing the right investment. Managers and CEOs with an MBA degree perform significantly better than those without it (Bhagat et al., 2010; Golec, 1996). Therefore, the board's expertise harms financial leverage. It is supported by Christy et al. (2010), who found a negative relationship between the proportion of board members with a degree in finance and equity market risk in Australia. Based on the explanation above, the following hypotheses were proposed.

**Hypothesis 2a:** Director's expertise (professional degree) negatively affects financial leverage

**Hypothesis 2b:** Executive's expertise (professional degree) negatively affects financial leverage

## METHOD

This study uses data from manufacturing companies listed on the Indonesia Stock Exchange (IDX) from 2014-2018. The annual reports of these companies were manually collected to acquire the necessary information for this research. The sample was selected using purposive sampling. The data consists of panel data that combines time-series and

cross-sectional data for five years. There are 283 companies listed on the IDX during the 2014-2018 period. The sample criteria are manufacturing companies that publish annual reports and financial reports in the 2014-2018 period, the data must contain variables to be studied, and the sample companies must not be delisted during the observation period.

**Table 1. Definition of Variables and Their Measurements**

Firm-Specific Variables	Definition
<b>Dependent Variables: (Leverage)</b>	
1. Total Debt in Book Value (TDBV)	Total Debt in Book Value/(Total Equity in BV + Total Debt BV)
2. Long-Term Debt ratio (LTD)	Long-term Debt/ (Total Equity in BV + Total Debt BV)
3. Short-Term Debt ratio (STD)	Total Debt - Long-term Debt/ (Total Equity in Book Value + Total Debt BV)
<b>Independent Variables:</b>	
1. Director's Expertise (Dir_Exp)	
Dir_Degree	The proportion of the members of the board of directors with a post-graduate degree (master and doctoral)
Dir_Fin.	The proportion of the members of the board of directors with a professional degree in finance, accounting, or business
2. Executive's expertise (Ex_Exp)	
Ex_Degree	The proportion of the members of the board of executives with a post-graduate degree (master and doctoral)
Ex_Fin	The proportion of the members of the board of executives with a professional degree in finance, accounting, or business
<b>Control Variables:</b>	
1. Firm Size	The natural logarithm of total assets.
2. Firm Age	The natural logarithm of the number of years since the firm was listed.
3. Profitability	ROA: Net income / Total assets ROE: Net income / Total equity
4. Growth Opportunity (GROWTH)	(Sales at time T - Sales at time T-1)/ Sales at Time T-1
5. NDTs (Non-Debt Tax Shield)	Depreciation plus amortization (plus investment tax credits and tax loss carryforwards 0 (scaled)
6. EVO (Earnings volatility)	The standard deviation of Earnings before interest and taxes, return on assets, respectively)
7. Tangibility (TANG)	Tangible Asset/ Total Asset

## Definition of Variables

The dependent variable of this study is firm leverage, as used in earlier studies, with the proxies of Short-Term Debt ratio (STD), Long-Term Debt

ratio (LTD), and Total Debt in Book Value (TDBV). This measurement is also used in the research of Rajan and Zingales (1995), Céspedes et al. (2010), Harris and Raviv (2008), Kayo and Kimura (2011),

Pandey (2005), and Chakraborty (2010). In addition, the debt ratio is distinguished by using book value and market value (Frank and Goyal, 2009). First, the total debt (book value) ratio (TDBV) is calculated as total liabilities divided by the book value of equity and total liabilities. Second, the long-term debt (book value) ratio (LTD) is calculated as long-term liabilities divided by the book value of equity and total long-term liabilities. The last one, the short-term debt (book value) ratio (STD), is calculated as total debt minus total short-term debt obligations divided by total long-term liabilities and the book value of equity.

The independent variables of this research are the director's and the executive's expertise. Director's expertise is measured using the proportion of the members of the board of directors with postgraduate degrees (master's and doctoral) (Dir\_Exp) and the proportion of the members of the board of directors with professional degrees in finance, accounting, or business (Dir\_Fin). Executive's expertise is measured using the proportion of the members of the board of executives with a postgraduate degree (master's and doctoral) (Ex\_Degree) and the proportion of the members of the board of executives with professional degrees in finance, accounting, or business (Ex\_Fin). This measurement is in line with previous research conducted by Darmadi (2013) and Iyer et al. (2020).

This study used the same control variable as that of Detthamrong et al. (2017) and Frank and Goyal (2009). They reduce concerns arising from omitting variables that might affect firm performance and financial leverage. The control variables for firm performance are the return of industry (RETIND) for industrial level, firm size, firm age, capital investment (CAINV), current ratio (CR), Market-to-Book ratio (MBV), Cash Flow-to- Total Assets Ratio (NCFOTA), and Fixed Asset Ratio (FAR), for corporate level. Five variables are used to control the effect of the board's expertise on leverage, based on Rajan and Zingales (1995). Those are firm size, profitability, asset tangibility, growth opportunities, and non-debt tax shield. It is supported by Frank and Goyal (2009) by adding volatility as another variable.

In line with previous research, i.e., Chen et al. (2005), Detthamrong et al. (2017), Field and Mkrtchyan (2017), García-Meca et al. (2015), and Harymawan and Nowland (2016), firm size is measured using the natural logarithm of total assets. Firm age is calculated using the natural logarithm of the years since the firm was listed. It is used as an indicator of the company's experience in running its business. Older companies tend to have good organizational structures, processes, and systems, while younger ones tend to be less rigid in their organizational structures. Capital investment (CAINV) is the ratio of capital expenditure to one-period lagged total assets. Market-to-Book ratio (MBV) is the ratio of the market value of common equity to the book value of common equity used to capture the company's investment opportunities. The current ratio (CR) is the ratio of existing assets to current liabilities. It measures the extent to which a company has sufficient liquid assets to pay its short-term debt obligations. Firms with adequate cash are better equipped to absorb liquidity shocks. Cash holdings are controlled using the Cash Flow to Total Assets Ratio (NCFOTA), measured as the net cash flow ratio from operation to total assets. Keefe and Yaghoubi (2016) found that cash flow fluctuations negatively affect financial leverage. Like Margaritis and Psillaki (2010), the Fixed Assets Ratio (FAR) is the net property, plant, and equipment ratio to total assets. Profitability is calculated using two proxies: ROA and ROE. ROE is calculated by net income divided by total equity, and ROA is calculated using net income divided by total assets. Growth Opportunity (GROWTH) is obtained from Sales at time T minus Sales at time T-1 divided by Sales at time T-1. NDTs (Non-Debt Tax Shield) is derived from depreciation plus amortization (plus investment tax credits and tax loss carryforwards (scaled). EVO (Earnings volatility) is calculated from the standard deviation of return on assets, respectively, earnings before interest and taxes, and Tangibility (TANG) is calculated through tangible assets divided by total assets.

This study uses Ordinary Least Square (OLS) to answer the research questions and to test the

hypothesis. The first model links leverage with directors and executives with academic degrees, and the second links leverage with directors and executives with professional degrees in finance, accounting, or business. This study uses SPSS to analyze the data. The following is the equation to be used.

- a. To test hypotheses 1a and 1b (Director's expertise and executive's expertise with academic degree as the proxy influence *financial leverage*)

$$LEV_i = \beta_0 + \beta_1 Dir\_Degree_i + \beta_1 Ex\_Degree_i + \sum_h \beta_h Control_i$$

- b. To test hypotheses 2a and 2b (Director's expertise and executive's expertise with professional degree as the proxy influence *financial leverage*)

$$LEV_{it} = \beta_0 + \beta_1 Dir\_Finit_i + \beta_2 Ex\_Finit_i + \sum_h \beta_h Control_i$$

Note:

Dir\_Exp : Director's expertise (Dir\_Degree and Dir\_Fin)

Ex\_Exp : Executive's expertise (Ex\_Degree and Ex\_Fin)

LEV : Financial leverage (TDBV, LTD, and TDMV)

Control : Control variables

## RESULTS

### Descriptive Statistical Test

Based on the result of the descriptive statistical test presented in Table 2, the dependent variable, i.e., namely leverage, which consists of Total Short-Term Debt (STD), Total Long-Term Debt (LTD), and Total Debt in Book Value (TDBV), has the same minimum value, which is 0.00. Similarly, the independent variables, i.e., the board's expertise, which consists of the director's expertise and the executive's expertise based on their postgraduate degree and a professional degree in finance, business, or accounting, have a minimum score of 0.00. However, their maximum values are different. For the dependent variable, the one with the highest value is Total Debt in Book Value (TDBV), i.e., 1.00. For the independent variable, the highest score is on the postgraduate degree of director's expertise (Dir\_Degree).

**Table 2. Result of Descriptive Statistical Test**

Statistic	Minimum	Maximum	Mean	Std. Deviation
Leverage_TDBV	0.00	1.00	0.3958	0.23051
Leverage_LTD	0.00	0.89	0.1415	0.16263
Leverage_STD	0.00	0.99	0.3189	0.20082
Dir_Degree	0.00	1.00	0.3627	0.26923
Dir_Fin	0.00	0.80	0.2487	0.22753
Ex_Degree	0.00	0.83	0.2680	0.24639
Ex_Fin	0.00	0.83	0.2335	0.23021
Firm_Size	1.24	25.03	4.7456	4.84025
Firm_Age	1.00	1.02	1.0106	0.00451
Profitability_ROA	-0.24	18.92	0.4010	1.57680
Profitability_ROE	-79.30	143.53	11.6314	23.71547
Growth	-1.62	9.59	0.1591	1.08133
NDTS	-1.03	5.31	0.2659	0.45522
EVO	0.00	0.33	0.0418	0.04105
Tang	0.00	1.00	0.7244	0.35342

Source: processed data, 2022

Regarding control variables, negative minimum values are found in profitability (ROA and ROE), growth, and Non-Debt Tax Shield (NDTS). Even so, these variables have very high maximum values, for example, profitability (ROE) with a maximum value of 143.53. Finally, for all variables, there are highly heterogeneous data in which the standard deviation value is higher than the average value. The dependent variable consists of leverage in TDBV and LTD. All independent and control variables are firm age, earnings volatility (EVO), and tangibility (Tang).

### Pearson's Correlation Test

Pearson's correlation test found different results for each proxy of leverage. Table 3 presents the Pearson's correlation for Total Debt in Book Value (TDBV). Here director's expertise, which consists of a postgraduate degree and professional degree in finance, accounting, and business, has a

significant correlation, i.e., 0.128 and 0.144 at the significance level of 0.05. This result was not found in the executive's expertise in both postgraduate degrees and a professional degree in finance, accounting, and business. Then, significant results were not found for all control variables.

Table 4 shows the Pearson's correlation for Long-Term Debt. There is a significant correlation between the postgraduate degree of executive's expertise, i.e., -0.119 at the significance level of 0.05. However, significant correlations for the professional degree in finance, accounting, and business of executive's expertise and director's expertise were not found in all proxies. Further, there is a significant correlation between firm size and profitability (ROA) for 0.246 and 0.267 at the significance level of 0.01. However, there were no significant results on firm age, profitability (ROE), growth, Non-Debt Tax Shield (NDTS), earnings volatility (EVO), and tangibility (Tang).

**Table 3. Pearson's Correlation for TDBV**

	1	2	3	4	5	6	7	8	9	10	11	12	13
Leverage_TDBV	1												
Dir_Degree	.128*	1											
Dir_Fin	.144*	.753**	1										
Ex_Degree	-0.063	.390**	.192**	1									
Ex_Fin	-0.022	.413**	.186**	.938**	1								
Firm_Size	-0.079	-0.045	0.008	-.141*	-.163**	1							
Firm_Age	0.081	.126*	.133*	.163**	0.110	0.108	1						
Profitability_ROA	-0.018	-0.032	-0.010	-0.024	-0.010	.177**	0.045	1					
Profitability_ROE	0.073	0.113	0.019	.280**	.249**	-0.078	.291**	0.059	1				
Growth	-0.033	0.108	.139*	0.070	0.044	.181**	-0.031	.160**	0.036	1			
NDTS	-0.008	-0.033	0.038	-0.053	-0.109	.298**	0.040	0.100	-0.069	.370**	1		
EVO	0.008	-0.056	-0.058	.190**	.189**	-0.009	0.094	-0.006	.482**	0.011	0.062	1	
Tang	0.091	-0.046	-0.014	0.007	0.039	-.565**	-0.099	-0.065	-0.013	-0.061	-0.003	-0.021	1

**Notes:** TDBV, Total Debt in Book Value; Dir\_Degree, the postgraduate degree of director's expertise; Dir\_Fin, the professional degree in finance, accounting, and business of director's expertise; Ex\_Degree, the postgraduate degree of executive's expertise; Ex\_Fin, the professional degree in finance, accounting, and business of executive's expertise; Size, Firm size; FAGE, Firm age; ROA, Profitability/Return of assets; ROE, Profitability/Return of Earnings; Growth, Growth Opportunity; NDTS, Non-Debt Tax Shield; EVO, Earnings volatility; TANG, tangibility. \*\* Correlation is significant at the 0.01 level (2-tailed), \*Correlation is significant at the 0.05 level (2-tailed).

Source: processed data (2022)

Table 4. Pearson's Correlation for LTD

	1	2	3	4	5	6	7	8	9	10	11	12	13
Leverage_LTD	1												
Dir_Degree	-0.045	1											
Dir_Fin	0.061	.753**	1										
Ex_Degree	-.119*	.390**	.192**	1									
Ex_Fin	-0.095	.413**	.186**	.938**	1								
Firm_Size	.246**	-0.045	0.008	-.141*	-.163**	1							
Firm_Age	-0.031	.126*	.133*	.163**	0.110	0.108	1						
Profitability_ROA	.267**	-0.032	-0.010	-0.024	-0.010	.177**	0.045	1					
Profitability_ROE	-0.111	0.113	0.019	.280**	.249**	-0.078	.291**	0.059	1				
Growth	-0.061	0.108	.139*	0.070	0.044	.181**	-0.031	.160**	0.036	1			
NDTS	0.063	-0.033	0.038	-0.053	-0.109	.298**	0.040	0.100	-0.069	.370**	1		
EVO	-0.009	-0.056	-0.058	.190**	.189**	-0.009	0.094	-0.006	.482**	0.011	0.062	1	
Tang	-0.058	-0.046	-0.014	0.007	0.039	-.565**	-0.099	-0.065	-0.013	-0.061	-0.003	-0.021	1

**Notes:** LTD, Long-Term Debt ratio; Dir\_Degree, the postgraduate degree of director's expertise; Dir\_Fin, the professional degree in finance, accounting, and business of director's expertise; Ex\_Degree, the postgraduate degree of executive's expertise; Ex\_Fin, the professional degree in finance, accounting, and business of executive's expertise; Size, Firm size; FAGE, Firm age; ROA, Profitability/Return of assets; ROE, Profitability/Return of Earnings; Growth, Growth Opportunity; NDTS, Non-Debt Tax Shield; EVO, Earnings volatility; TANG, tangibility.\*\* Correlation is significant at the 0.01 level (2-tailed), \*Correlation is significant at the 0.05 level (2-tailed).

Source: processed data, 2022

Table 5 shows the Pearson's correlation for Short-Term Debt. There is no significant correlation in all variables of the board's expertise, i.e., the director's and the executive's expertise based on a postgraduate degree and a professional degree in finance, accounting, and business. Significant results were found in firm size and growth, i.e., 0.151 and 0.144 at the significance level of 0.05, and profitability (ROE), i.e., 0.172 at the significance level of 0.01. Firm age, profitability (ROA), growth, Non-Debt Tax Shield (NDTS), Earnings volatility (EVO), and tangibility (Tang) have no significant correlation.

### Hypothesis Testing

The multiple linear regression in this research uses the sig. level of 5%. According to table 6, not all variables of the board's expertise, i.e., director's expertise and executive's expertise based on postgraduate degree and a professional degree in finance, accounting, and business, affect leverage in Short-

Term Debt ratio (STD), Long-Term Debt ratio (LTD), and Total Debt in Book Value (TDBV). The effect of the board's expertise on capital structure (leverage) is as follows. First, the postgraduate degree of executive's expertise significantly affects leverage in Short-Term Debt (STD) and Total Debt in Book Value (TDBV) for 0.017 and 0.031 at the significance level of 0.05. Second, the director's expertise's professional degree in finance, accounting, and business significantly influences leverage in Long-Term Debt (LTD) for 0.029 at the significance level of 0.05. Third, the postgraduate degree in director's expertise and the professional degree in finance, accounting, and business of executive's expertise do not have any significant impact. Fourth, regarding control variables, firm size, profitability (ROA and ROE), and growth are significantly influential. Firm size substantially influences the Long-Term Debt ratio (LTD) and Short-Term Debt ratio (STD) for 0.000 and 0.006, but it does not affect Total Debt in Book Value (TDBV).

Table 5. Pearson's Correlation for STD

	1	2	3	4	5	6	7	8	9	10	11	12	13
Leverage_STD	1												
Dir_Degree	0.077	1											
Dir_Fin	0.057	.753**	1										
Ex_Degree	-0.005	.390**	.192**	1									
Ex_Fin	0.027	.413**	.186**	.938**	1								
Firm_Size	.151*	-0.045	0.008	-.141*	-.163**	1							
Firm_Age	0.081	.126*	.133*	.163**	0.110	0.108	1						
Profitability_ROA	0.019	-0.032	-0.010	-0.024	-0.010	.177**	0.045	1					
Profitability_ROE	.172**	0.113	0.019	.280**	.249**	-0.078	.291**	0.059	1				
Growth	.144*	0.108	.139*	0.070	0.044	.181**	-0.031	.160**	0.036	1			
NDTS	0.102	-0.033	0.038	-0.053	-0.109	.298**	0.040	0.100	-0.069	.370**	1		
EVO	0.086	-0.056	-0.058	.190**	.189**	-0.009	0.094	-0.006	.482**	0.011	0.062	1	
Tang	-0.001	-0.046	-0.014	0.007	0.039	-.565**	-0.099	-0.065	-0.013	-0.061	-0.003	-0.021	1

**Notes:** STD, Short-Term Debt ratio; Dir\_Degree, the postgraduate degree of director's expertise; Dir\_Fin, the Professional degree in finance, accounting, and business yang of director's expertise; Ex\_Degree, the postgraduate degree of executive's expertise; Ex\_Fin, the professional degree in finance, accounting, and business of executive's expertise; Size, Firm size; FAGE, Firm age; ROA, Profitability/Return of assets; ROE, Profitability/Return of Earnings; Growth, Growth Opportunity; NDTS, Non-Debt Tax Shield; EVO, Earnings volatility; TANG, tangibility. \*\* Correlation is significant at the 0.01 level (2-tailed), \*Correlation is significant at the 0.05 level (2-tailed).

Source: processed data, 2022

Table 6. Table Hasil Uji Hypothesis

	TDBV			LTD			STD		
	Coef	Std Err	Sig	Coef	Std Err	Sig	Coef	Std Err	Sig
Dir_Degree	0.069	0.087	0.428	-0.076	0.058	0.192	0.057	0.074	0.446
Dir_Fin	0.105	0.095	0.267	0.139	0.063	0.029*	-0.012	0.081	0.881
Ex_Degree	-0.402	0.167	0.017*	-0.108	0.111	0.335	-0.310	0.143	0.031*
Ex_Fin	0.292	0.182	0.109	0.099	0.121	0.414	0.288	0.155	0.065
Firm_Size	-0.003	0.004	0.461	0.009	0.003	0.000***	0.009	0.003	0.006**
Firm_Age	4.088	3.281	0.214	-1.649	2.184	0.451	1.544	2.807	0.583
Profitability_ROA	-0.002	0.009	0.824	0.026	0.006	0.000***	-0.006	0.008	0.418
Profitability_ROE	0.001	0.001	0.223	-0.001	0.000	0.193	0.002	0.001	0.007**
Growth	-0.008	0.014	0.577	-0.023	0.009	0.015*	0.020	0.012	0.099
NDTS	0.018	0.035	0.605	0.000	0.023	0.991	0.015	0.030	0.613
EVO	-0.037	0.393	0.924	0.219	0.262	0.402	0.010	0.336	0.976
Tang	0.039	0.049	0.418	0.042	0.032	0.201	0.070	0.042	0.094

Note: Coef= Coefficient; Std Err= Standard error; Sig= significant level. \*P < 0.05 \*\*P < 0.01 \*\*\*P < 0.001

Source: processed data. 2022

Profitability (ROA) and growth significantly affect the Long-Term Debt ratio (LTD) of 0.000 and 0.015. Still, they do not significantly impact the Short-Term Debt ratio (STD) and Total Debt in Book Value (TDBV). Furthermore, profitability (ROE) influences the Short-Term Debt ratio (STD), but it does not affect the Long-Term Debt ratio (LTD) and Total Debt in Book Value (TDBV). Finally, the other control variables, namely firm age, Non-Debt Tax Shield (NDTS), earnings volatility (EVO), and tangibility (Tang), do not affect leverage in all proxies.

## DISCUSSION

This study finds that only the postgraduate degree of executive's expertise and the professional degree in finance, accounting, and business director's expertise aligns with the hypothesis; they significantly influence leverage. The postgraduate degree of director's expertise and the professional degree in finance, accounting, and business executive's expertise does not influence it. The findings indicate that executive expertise based on a postgraduate degree is related to leverage in Short-Term Debt (STD) and Total Debt in Book Value (TDBV). Managers and CEOs with an MBA degree perform significantly better than those without it (Bhagat et al., 2010; Golec, 1996). The decision to use debt is one of the critical and strategic decisions that the board of executives must take. Expertise in business, finance, or accounting helps them complete tasks in the field of financial management and choose suitable investments. In addition, executives with advanced degrees influence a firm's capital structure by promoting Research and Development spending on valuable innovations (Helmerts et al., 2017; Chuluun et al., 2017; Gittelman and Kogut, 2003; Swift, 2018). Executives with an academic background are better at understanding the risks of the nature of investment in Research and Development. They are also more cautious about keeping the company's debt low (Iyer et al., 2020). Board members with higher education enable innovations and developments requiring relatively high financing, such as purchasing new machines, intellectual capital, and other needs not entirely paid in cash.

Therefore, these governance improvements and reforms will result in more debt. This finding is in line with the findings of Iyer et al. (2020) that the structure of the company's boards significantly influences its capital structure and success. This finding is also in line with the finding of Farag and Mallin (2018) that there is a very significant and positive association between CEOs with higher education, such as MBA, M.Sc., and Ph.D., and corporate risk taking.

Further, the director's expertise affects leverage in Long-Term Debt (LTD). Financial directors with professional degrees in finance, accounting, and business have an essential role in decision-making. They are significant in improving and strengthening the quality of financial reporting and corporate governance, which positively influences the company's value. When the board of directors members has professional qualifications in their respective fields, they can make correct and quality decisions for firm performance (King et al., 2016, Iyer et al., 2020). In addition, these advantages can also help companies assess the possible financial risks. With proper and thorough analytical skills, companies can mitigate risks, take maximum benefit from their debts, and promote investment behavior that can improve company finances in a healthy manner (Naseem et al., 2020).

The postgraduate degree of a director's expertise and its professional degree in finance, accounting, and business does not affect leverage in all proxies. It indicates that the formal educational background of the board of directors does not always affect the company's capital structure. It might cause multiple things, such as the strength of the executive's financial analysis and sufficient monitoring from the company's directors from their finance experience. Therefore, postgraduate degrees do not always have to be associated with company leverage. In addition, this insignificant effect may be caused by the sample, as this research only uses one sector, i.e., manufacturing.

Only firm size, profitability (ROA and ROE), and growth can influence leverage in control variables. It means that the bigger the company, the higher the profitability (ROA or ROE) and the faster

the growth of the company. It strengthens the relationship with the company's leverage because companies with more experience are more likely to make informed decisions regarding their capital structure. Large companies with high profitability also undeniably require large amounts of capital, which is closely related to leverage. It is in line with the research of Sheikh and Wang (2011), which explains the company's funding decisions in determining the mix between debt and equity to maximize firm value.

## CONCLUSIONS

This research is an empirical study that tries to see the effect of the expert board on the leverage of companies in the manufacturing industry which is the main industry for developing countries such as Indonesia. This research is also different from existing research because in addition to focusing on the variables of the expertise board, and corporate leverage, this research was conducted in a country that adheres to a two tier board system. This study uses three measurements on the leverage variable, the three measurements are TDBV, LTD and STD. The board's expertise which consists of director's expertise and executive's expertise is divided into two: based on their postgraduate degree and based on their professional degree in finance, accounting, and business. The test results indicate that the professional degree in finance, accounting, and business of director's expertise (Dir\_Fin) influences leverage in Long-Term Debt ratio (LTD), but it does not significantly affect it in Short-Term Debt ratio (STD) and Total Debt in Book Value (TDBV). Then, the postgraduate degree of executive's expertise (Ex\_Degree) significantly impacts leverage in Short-Term Debt ratio (STD) and Total Debt in Book Value (TDBV), but it does not influence it in Long-Term Debt ratio (LTD). Furthermore, the postgraduate degree of director's expertise (Dir\_Degree) and its professional degree in finance, accounting, and business executive's expertise (Ex\_Fin) do not significantly influence leverage in all proxies. Finally, in terms of control variables, the significant effects were found in firm size on Short-Term Debt ratio (STD) and Long-Term Debt ratio (LTD), in profit-

ability (ROA) on Long-Term Debt ratio (LTD), in profitability (ROE) on Short-Term Debt ratio (STD), and in growth on Long-Term Debt ratio (LTD). Furthermore, other control variables, i.e. firm age, Non-Debt Tax Shield (NDTS), Earnings volatility (EVO) and tangibility (Tang), do not affect leverage in all proxies.

## RECOMMENDATIONS

Future research is suggested to add or use variables different from those included in this research so that other independent variables that have a more significant influence on leverage can be identified. In addition, various objects of research or company sectors are advised to be studied.

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