CORPORATE GOVERNANCE, CAPITAL STRUCTURE, AND CORPORATE INVESTMENT: AN EMPIRICAL STUDY ON PROPER MANUFACTURING INDUSTRY IN INDONESIA

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Abstract: Investment is one of the most crucial decisions that a company must create to achieve higher financial performance and to maintain long-term sustainability. This study predicts that two significant factors determine corporate investment, i.e., the firms’ corporate governance and capital structure. The article also assumes that companies that are aware and engage in environmental programs would find it much easier to gain investors’. This study used 39 units of analysis of 13 manufacturers listed on the Indonesia Stock Exchange that received a good ranking in PROPER during the 2016-2018 period and analyzed with structural equation modeling (SEM). This study finds that corporate governance is negatively related to the capital structure but positively related to corporate investment. However, the capital structure does not affect corporate investment implying environmental performance’s significance in leading corporate governance and enhancing corporate investment. Further research can extend the observation period, use other sectors as the sample, use the different indicators in each variable, and develop the relationship between variables on a broader framework.

Keywords: Corporate Governance, Capital Structure, Corporate Investment, PROPER

(2009), studied China’s industrial companies and found that long-term debt has a minimal contribution to widen investment opportunities. Ajide (2017), explained that although firms could fund their investments internally, such as retained earnings and accumulated profits from various reserves, the type of resources statistically constrain the investment goals. Danso et al. (2019), examined Indian firms and concluded that long-term debt exerts a negative impact on firm investment.

The second factor that contributes to improving the corporate investment level is corporate governance. Francis et al. (2013), explained if a firm’s corporate governance is weak, the relationship between corporate investment and cash flow availability is more sensitive and risky. It suggests that firms gain superior governance as it can ease the access to appropriate financial resources, enabling the firms to have more efficient investment allocation. Due to agency problems, Mueller and Peev (2007), hypothesized that weak corporate governance tends to more overinvestment. Billett et al. (2011), found that good governance in financially unconstrained firms eliminates the chance of managers to overinvest. The study suggests that both governance systems and financial resources play significant roles in explaining firms’ investment patterns.

Following Walls et al. (2012) and Lagasio and Cucari (2019), the authors assume companies that achieve the right governance level can also outperform environmentally. Environmental initiatives have long-term strategic implications (Hart et al., 2000), so the consistency of the implementation strongly relies on firm governance. Environmental initiatives also require substantial investment and have an impact on the capital structure (Walls et al., 2012; Hart et al., 2000). A company with excellent environmental performance is viewed as a less risky investment because of less potential to perform dangerous acts to the environment (Aaron et al., 2012). We assume that environmental performance is strongly related to corporate governance, capital structure, and corporate investment.

According to Chen et al. (2019), environmental awareness in developing countries shows an increasing trend. Investors pay much interest in firm environmental performance nowadays. In investment decision making, environmental performance is useful as a tool or indicator to mitigate risk and increase investment income (Rikhardsson and Holm, 2008). Additionally, environmental regulations and programs encourage companies even more committed to enhancing environmental performance to attract investors. In Indonesia, the ministry of environment and forestry runs one of the environmental programs, the so-called PROPER.

PROPER is a performance rating program of environmental management. The sector required to become PROPER participants is the firm that its activities can damage the environment, such as the manufacturing sector. In Indonesia, the award is significant to provide acknowledgment towards companies that outperform the minimum environmental standards. The award is also in line with the government program to encourage investment activities in financial markets. One of the reasons is that investors would highly value the companies that have shown commitment and achievement in environmental issues (Aaron et al., 2012). The government predicts that by improving environmental performance, manufacturing companies will enhance their attractiveness and receive high awareness from investors.

Most of the prior literature focuses mainly on the effect of corporate governance on capital structure (Detthamrong et al., 2017; Feng et al., 2020; Jiraporn et al., 2012; Nadarajah et al., 2018), the effect of corporate governance on corporate investment (Billett et al., 2011; Chen et al., 2017; Francis et al., 2013; Mueller and Peev, 2007; Shahid and Abbas, 2019), and the effect of capital structure on corporate investment (Ajide, 2017; Bae, 2009; Danso et al., 2019; Jiang and Zeng, 2014). However, there is very limited research that studies corporate governance, capital structure, and corporate investment as a whole in one research concept, especially in manufacturing companies with excellent environmental performance.

Following the arguments, this current study aims to determine whether the governance level affects its investment through the capital structure as a
mediating variable in manufacturing companies with excellent environmental performance. Based on the introduction, this study’s research question: (1) Does corporate governance affect capital structure? (2) Does capital structure affect corporate investment? (3) Does corporate governance affect corporate investment?

HYPOTHESIS DEVELOPMENT

In several years, Indonesia is in the lowest position among other Asia Pacific countries (ACGA, 2018), which implies that Indonesia’s corporate governance is still weak. One would expect that firms with weak governance have more severe agency problems and tend to have higher debt levels (Jiraporn et al., 2012). Based on agency theory, one of the supervisory mechanisms in corporate governance to reduce agency problems is debt usage (Nadarajah et al., 2018). Agency theory is a contract between manager as agent and shareholders as principal, where managers operate the firms on shareholders’ behalf, and separation of ownership and control has created agency conflict that results in agency cost (Chow et al., 2018; Feng et al., 2020).

According to Feng et al. (2020), agency theory describes the relationship between corporate governance and capital structure. Corporate governance and debt are substitute mechanisms to mitigate agency conflict (Arping and Sautner, 2010; Jiraporn et al., 2012). Corporate governance mechanisms can reduce agency costs (Detthamrong et al., 2017). Likewise, debt plays as a disciplinary device to alleviating agency problems between managers and shareholders (Arping and Sautner, 2010; De Jong, 2002; Hussainey and Aljifri, 2012).

Prior studies document that corporate governance affects capital structure. However, existing studies have provided inconclusive results. Some studies find a negative relationship between corporate governance and capital structure. Jiraporn et al. (2012), investigate the influence of corporate governance quality on capital structure in all firms reported by the Institutional Shareholder Service (ISS) and finds that companies with weak governance have higher debt levels because of debt to mitigate agency conflict. Arping and Sautner (2010), find that corporate governance improvement results in a lower degree of leverage in Dutch firms. We interpret this finding as firms use debt to reduce agency problems.

On the other hand, some studies find a positive relationship between corporate governance and capital structure. For example, Tarus and Ayabei (2016), find that more independent directors positively associate with capital structure. Thus, the result indicates that independent directors related to higher leverage and debt are an effective control mechanism on managerial behavior. In their study on US firms, Aman and Nguyen (2013), find that good governance is related to higher debt levels. Firms will benefit from having good governance because it will ease access to funding sources and enjoy low financing costs.

The inconsistencies in previous findings suggest that further research needs to be conducted in this area. Based on the preceding discussion, this study hypothesizes:

\[ H_1: \] Corporate governance affects the capital structure of the PROPER manufacturing companies

Corporate governance in Indonesia is still weak because there is no rule restricting insider to the trading shares in a particular period before the result announcement or other corporate events, and the lack of protection for minority shareholders (ACGA, 2018). Firms with weak governance quality do not offer protection to investors, so they cannot increase investor confidence, attract investment, and vice versa (Shahid and Abbas, 2019). Based on signaling theory, corporate governance mechanisms focus on quality signaling to investors arising from the application of governance mechanisms within the company (Hearn, 2011). Signaling theory assumes there is an asymmetric information problem where two parties have access to different information (Connelly et al., 2011). Asymmetric information will reduce by giving signals by parties who have more information to other parties (Morris, 1987). Corporate governance mechanisms such as board and audit committee are beneficial mechanisms to mitigate asymmetric information and in sig-
naling quality to potential investors (Hearn, 2011). Therefore, the investment will be well managed and controlled if the company has strong corporate governance.

The literature suggests that corporate governance can have a significant influence on firm investment. For example, Tran (2019), finds that independent directors’ proportion is negatively related to firm investment in Vietnamese firms. This study implies that the existence of independent directors can help to reduce the overinvestment problem. Chen et al. (2017), investigated the effect of governance mechanisms on investment efficiency in listed companies in China and found a negative relationship between ownership concentration and investment. The result indicates that the investment level is higher when owner concentration is lower.

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On the other hand, some studies find a positive relationship between corporate governance and investment. For instance, Shahid and Abbas (2019), find that in Indian listed firms, companies with good governance quality have a higher level of investment. The study implies that good governance enhances the board’s monitoring function, which can control the interests of shareholders. Therefore, managers can make more effective investment decisions. Chen and Chen (2012), find that diversified firms with good governance quality (e.g., independent board, powerful shareholder rights, etc.) have better investment allocation.

In summary, corporate governance has a significant impact on a firm’s investment. However, the previous findings on this association remain inconclusive, which leads us to the following hypothesis:

\[ H_2: \] Corporate governance affects the corporate investment of the PROPER manufacturing companies

In the imperfect capital market, investment is influenced significantly by its funding sources (Aivazian et al., 2005; Kang et al., 2000). According to Ahn et al. (2006), leverage constraint investment, companies must have low levels of debt to avoid the risk of missing profitable growth opportunities. The company’s investment will be below the optimal level in companies with high debt levels (Kuchler, 2019).

Underinvestment theory states that the manager in firms with high debt levels must give up on a positive net present value (NPV) project (Myers, 1977). This theory focuses on the effect of liquidity at companies with high debt levels to invest less regardless of the growth opportunities they have (Lang et al., 1996). Companies with high debt levels are more likely to waste valuable growth opportunities due to high debt (Jiang and Zeng, 2014). Debt increases the companies’ value with low growth opportunities but decreases the value of companies with profitable growth opportunities (Ahn et al., 2006). Therefore, companies with high debt levels have lower investments.

Previous studies document a negative relationship between leverage and corporate investment. For example, Jiang and Zeng (2014), investigate the effect of debt on firm investment in Chinese listed firms. This study finds a negative relationship between debt and firm investment that is much stronger for the firm with low-growth opportunities. In their research on Indian firms, Danso et al. (2019), find that leverage is negatively related to firm investment for high asymmetric information firms and low-growth firms. On the other hand, John and Muthusamy (2011), examine the impact of leverage on firm investment in Indian pharmaceutical companies and find that leverage is positively related to firm investment in large firms.

Based on the preceding discussion of the relevant theories and mixed findings of supporting literature, we attempt to verify the following hypothesis:

\[ H_3: \] Capital structure affects the corporate investment of the PROPER manufacturing companies

**METHOD**

This research is explanatory research with a quantitative approach. This type of research was chosen to test the hypothesis to explain the influence of exogenous variables - i.e., corporate governance (CG) on endogenous variables - i.e., capital structure (CS) and corporate investment (CI).
Corporate governance is measured using the natural logarithm of board size (LnBZ), board independence (BI), and board gender (BG). Capital structure is measured using indicators of debt to equity ratio (DER), debt to assets ratio (DR), long-term debt to equity ratio (LTDE), and long-term debt to assets ratio (LTDA). The indicators used to measure corporate investment are market to book value of equity (MBE), earnings to price ratio (EPR), the book to a market value of assets (BMA), depreciation to firm value ratio (DEP), capital expenditure to book value of assets ratio (CBVA), and capital expenditure to a market value of assets ratio (CMVA). The Table below illustrates the operationalizations of indicators.

Table 1. The Variable Description

<table>
<thead>
<tr>
<th>Variable</th>
<th>Indicators</th>
<th>Formula</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Governance</td>
<td>LnBZ</td>
<td>Natural logarithm of total numbers of directors</td>
<td>Hartzell et al. (2006)</td>
</tr>
<tr>
<td></td>
<td>BI</td>
<td>The proportion of independent directors to total numbers of directors</td>
<td>Agyei-Mensah (2016), Detthamrong et al. (2017)</td>
</tr>
<tr>
<td></td>
<td>BG</td>
<td>The proportion of female directors to total numbers of directors</td>
<td>Detthamrong et al. (2017), Adusei and Obeng (2019)</td>
</tr>
<tr>
<td>Capital Structure</td>
<td>DER</td>
<td>Total debt divided by total equity</td>
<td>Bae (2009), Adusei and Obeng (2019)</td>
</tr>
<tr>
<td></td>
<td>DR</td>
<td>Total debt divided by total assets</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LTDE</td>
<td>Long-term debt divided by total equity</td>
<td>Detthamrong et al. (2017), Bae (2009)</td>
</tr>
<tr>
<td></td>
<td>LTDA</td>
<td>Long-term debt divided by total assets</td>
<td>Aivazian et al. (2005)</td>
</tr>
<tr>
<td>Corporate Investment</td>
<td>MBE</td>
<td>(Number of stock x Closing price) : Total equity</td>
<td>Smith and Watts (1992)</td>
</tr>
<tr>
<td></td>
<td>EPR</td>
<td>Earnings per share divided by closing price</td>
<td>Smith and Watts (1992)</td>
</tr>
<tr>
<td></td>
<td>BMA</td>
<td>Total assets : [Total assets – Total Equity + (Number of stock x Closing price)]</td>
<td>Smith and Watts (1992)</td>
</tr>
<tr>
<td></td>
<td>DEP</td>
<td>Depreciation : [Total assets – Total Equity + (Number of stock x Closing price)]</td>
<td>Smith and Watts (1992), Kallapur and Trombley (1999)</td>
</tr>
<tr>
<td></td>
<td>CBVA</td>
<td>(Book value of fixed assets, – Book value of fixed assets, t) : Total assets</td>
<td>Kallapur and Trombley (1999)</td>
</tr>
<tr>
<td></td>
<td>CMVA</td>
<td>(Book value of fixed assets, – Book value of fixed assets, t) : [Total assets – Total Equity + (Number of stock x Closing price)]</td>
<td>Kallapur and Trombley (1999)</td>
</tr>
</tbody>
</table>

Source: Prior Research

The data used in this study are secondary in the form of financial reports and annual reports obtained from the Indonesia Stock Exchange (IDX). The research object is manufacturing companies listed on the IDX that received a good ranking (gold, green, and blue ranking) on PROPER during the 2016-2018 period. The rankings are given consist of gold, green, blue, red, and black ranks. Companies that get gold, green, and blue ranks are categorized as compliant companies and have good environmental performance (Damayanti, 2018). The sample is determined using purposive sampling, and
it generated thirteen companies with 39 firm-years data. The thirteen companies consist of PT. Polychem Indonesia (ADMG), PT. Delta Djakarta (DLTA), PT. Indo Acidatama (SRSN), PT. Indospring (INDS), PT. Kalbe Farma (KLBF), PT. Kino Indonesia (KINO), PT. Multi Bintang Indonesia (MLBI), PT. Sat Nusapersada (PTSN), PT. Siantar Top (STTP), PT. Suparma (SPMA), PT. Tifico Fiber Indonesia (TFCO), PT. Tirta Mahakam Resources (TIRT), and PT. Toba Pulp Lestari (INRU). Data analysis methods used are descriptive statistical analysis and SEM-PLS using WarpPPLS 6.0 software.

RESULTS

Descriptive Statistical Analysis

Descriptive statistical analysis uses to present an overview of research variables. This study uses mean, standard deviation, maximum value, and minimum value to provide an overview of research variables. The results of the descriptive statistical analysis show in Table 2.

Outer Model Evaluation

The outer models explain the correlation between indicators and latent variables. The outer model in this research is the formative model. If the probability value ≤ level of significance (Alpha (α) = 5%), an indicator is declared valid. The results of the outer model evaluation show in Table 3.

Inner Model Evaluation

The outer models explain the correlation between indicators and latent variables. The inner model evaluation is defined by looking at the value of $R^2$, predict relevance $Q^2$, and path coefficient. If the significance value < 0.05, the hypothesis is accepted.

R$^2$ variable CS with a value of 0.482 or 48.2% indicates that the CG variables explain CS variables’ diversity at 48.2%. Then the $Q^2$ variable CS with a value of 0.426 means that the CG variable has a predictive power of 0.426 to the CS variable. $R^2$ of the CI variable with a value of 0.193 or 19.3% indicates that 19.3% of the CI variable’s variation can be explained by the CG and CS variables. Then $Q^2$ CI variable with a value of 0.222 shows that the CG and CS variables have a predictive power of 0.222 to the CI variable.

**Table 2. Descriptive Statistical Analysis (39 firm-year data in three periods)**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>LnBZ</td>
<td>1.0986</td>
<td>1.7918</td>
<td>1.4546</td>
<td>0.2474</td>
</tr>
<tr>
<td>BI</td>
<td>0.0000</td>
<td>0.5000</td>
<td>0.1620</td>
<td>0.1505</td>
</tr>
<tr>
<td>BG</td>
<td>0.0000</td>
<td>0.3333</td>
<td>0.0872</td>
<td>0.1357</td>
</tr>
<tr>
<td>DER</td>
<td>0.0928</td>
<td>9.5545</td>
<td>1.1455</td>
<td>1.8769</td>
</tr>
<tr>
<td>DAR</td>
<td>0.0850</td>
<td>0.9053</td>
<td>0.3773</td>
<td>0.2269</td>
</tr>
<tr>
<td>LTDE</td>
<td>0.0143</td>
<td>2.7042</td>
<td>0.3472</td>
<td>0.5706</td>
</tr>
<tr>
<td>LTDA</td>
<td>0.0129</td>
<td>0.4620</td>
<td>0.1208</td>
<td>0.1286</td>
</tr>
<tr>
<td>MBE</td>
<td>0.0158</td>
<td>31.9416</td>
<td>3.7951</td>
<td>8.0959</td>
</tr>
<tr>
<td>EPR</td>
<td>-0.5815</td>
<td>1.1988</td>
<td>0.0605</td>
<td>0.2459</td>
</tr>
<tr>
<td>BMA</td>
<td>0.0708</td>
<td>3.9963</td>
<td>1.1569</td>
<td>0.9100</td>
</tr>
<tr>
<td>DEP</td>
<td>0.0036</td>
<td>0.3807</td>
<td>0.0578</td>
<td>0.0859</td>
</tr>
<tr>
<td>CBVA</td>
<td>-0.2015</td>
<td>0.1317</td>
<td>0.0067</td>
<td>0.0570</td>
</tr>
<tr>
<td>CMVA</td>
<td>-0.4648</td>
<td>0.3935</td>
<td>-0.0067</td>
<td>0.1134</td>
</tr>
</tbody>
</table>

Source: Processed data, 2020
Testing the hypothesis of corporate governance's effect on capital structure and corporate investment produces a probability of 0.078, which is more the level of significance (\(\alpha = 5\%\)) with a path coefficient of 0.211. That means that there is a positive and insignificant effect of capital structure on corporate investment (H\(_3\) rejected).

### DISCUSSION

**The Effect of Corporate Governance on Capital Structure**

The results obtained in testing the hypothesis indicate that corporate governance negatively affects capital structure. Corporate governance affects the capital structure because the board of directors is responsible for managing its activities and...
making strategic decisions, one of which is the capital structure. In Indonesia, corporate governance is still relatively weak (ACGA, 2018), so agency problems are still severe. The use of debt is one way to minimize agency problems (Arping and Sautner, 2010; De Jong, 2002; Hussainey and Aljifri, 2012). Based on agency theory, debt plays a disciplinary mechanism to reduce agency problems between managers and shareholders (Nadarajah et al., 2018). Therefore, companies with weak corporate governance tend to have high levels of debt.

Based on the ACGA (2018), the governance of companies in Indonesia is still weak. However, companies with excellent environmental performance - i.e., receive good ratings (gold, green, blue) from PROPER tend to have better governance than companies that do not receive it. Therefore, companies that receive a good rating from PROPER have easy access to external sources of funding (debt) because they have gained investors and creditors’ trust. Furthermore, the use of debt can overcome agency problems to improve corporate governance.

This study’s results are consistent with research conducted by Jiraporn et al. (2012) and Nadarajah et al. (2018), which states that corporate governance negatively affects capital structure. However, this study’s results are not in line with research conducted by Detthamrong et al. (2017), which states that corporate governance does not affect capital structure. The reason is that the corporate governance system is based on large shareholders, causing agency problems to be less severe and has little impact on capital structure decisions (Detthamrong et al., 2017).

The Effect of Corporate Governance on Corporate Investment

The results obtained in testing the hypothesis indicate that corporate governance has a positive effect on corporate investment. Corporate governance influences corporate investment because good governance offers protection to investors, increasing investor confidence, and therefore it is attracting investment. Corporate governance in Indonesia is still weak because the protection of minority shareholders is still weak and the absence of regulations related to insider trading results in asymmetric information between insiders and outsiders (ACGA, 2018). Weak corporate governance can increase investors’ risk and signal that companies cannot manage investments properly. Based on signaling theory, corporate governance mechanisms can be a sign of quality for investors arising from the application of this mechanism within the company (Hearn, 2011). Therefore, companies with weak corporate governance tend to have low levels of investment.

Although corporate governance in Indonesia is still weak, companies with good environmental performance tend to have better corporate governance. Investors would highly value a company with excellent environmental performance. Furthermore, investors need to consider environmental performance when making investment decisions because it can reduce risk and increase investment income (Rikhardsson and Holm, 2008). Therefore, companies with good environmental performance can attract investment so that they tend to have higher investment levels.

This study’s results are consistent with research conducted by Shahid and Abbas (2019), which states that corporate governance positively affects corporate investment. However, this study’s results are not in line with research conducted by Chen et al. (2017), which states that corporate governance does not affect corporate investment because top executives are more likely to pursue political goals for their interests than to increase investment.

The Effect of Capital Structure on Corporate Investment

The results obtained in hypothesis testing indicate that capital structure does not affect corporate investment. The results of this study contradict the theory that capital structure influences corporate investment. Underinvestment theory states that companies with high debt levels have a low investment (corporate investment will be below the optimal level). That is because the company loses profitable investment opportunities due to substantial debt problems. The discrepancy between research re-
...results with the theory can be caused by the company’s investment policy not entirely determined by funding sources. This study’s findings are not in line with research conducted by Aivazian et al. (2005) and Bae (2009), which states that capital structure influences corporate investment.

**CONCLUSIONS**

This study indicates that corporate governance negatively related to the capital structure but positively related to corporate investment. Companies that are environmentally outperformed (get gold, green, or blue ranking from PROPER) tend to have better governance – i.e., the larger board size, higher board independence, and higher board gender. The investor highly values the companies with excellent environmental performance and better corporate governance. It can attract investment and ease access to funding sources because it has earned creditors and investors’ trust. The results of this study also show that capital structure does not affect company investment. The reason is that the funding sources did not entirely determine the company’s investment policy.

**LIMITATIONS**

This study has a limitation among other articles: the total number of firms with excellent environmental performance is small. PROPER weakness is evaluating companies based on the plant location, so one company can be assessed more than one plant location, with different results. Therefore, the companies that are selected as research samples are the main office and evaluated by PROPER. It is with the assumption that the main office that controls corporate governance and corporate investment. Thus, the number of companies is limited.

**RECOMMENDATIONS**

Suggestions for further research are to extend the period of observation, use other sectors in IDX as the sample, use the different indicators in each variable, and develop the relationship between variables on a broader framework.

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**REFERENCE**


