Corporate governance on financial distress: Evidence from Indonesia

Eka Handriani[a*], Imam Ghozali[b] and Hersugodo[b]

[a]Faculty of Economics and Business, University of Darul Ulum Islamic Centre Sudirman, Jl. Tentara Pelajar No. 13, Ungaran, Central Java, Indonesia
[b]Faculty of Economics and Business, Diponegoro University, Jl. Prof. Soedarto, Tembalang, Semarang, Central Java, Indonesia

C H R O N I C L E	A B S T R A C T
	The main objective of this paper is to explore the most significant determinants of financial distress of manufacturing companies in Indonesia and to provide explanations on this issue by using multiple regression models. With Modigliani and Miller's and Trade-off theories were reviewed to formulate a testable proposition on the determinants of financial distress of manufacturing companies in Indonesia. Multiple regression models were used as a statistical tool to investigate the most significant profitability determinants of manufacturing companies in Indonesia. The Lisrel software was used to analyze 300 manufacturing companies listed on the Indonesia Stock Exchange. It was found that institutional ownership, firm size, profitability, and board independence as variables had a positive relationship in an effort to avoid financial distress. Meanwhile, the board size variable had an insignificant positive relationship. The findings are consistent with the pecking order and financial agency theory which helps in understanding the application of financial distress studies for manufacturing companies in Indonesia.

1. Introduction

Companies in the United States of America (USA) had to restructure their corporate governance as a result of a market crash in 1929. Bad corporate governance was allegedly one of the reasons for the political economy crisis in Indonesia in 1997 and its effects remain. The financial crisis in the USA at this time is allegedly because there is no implication of good corporate governance (GCG) principles. For example, there are several cases of financial scandals such as Enron Corp., Worldcom, Xerox and others involving the company's top executives illustrating the implementation of GCG principles. There is a relation between GCG and the principal agency theory which is to avoid conflicts between the principal and agent. A conflict arises because there are different interests that must be managed so that it does not cause harm to both parties. Companies which are established and constitute a separate entity are a legal subject, so that the existence of the companies and the stakeholders must be protected through the implication of GCG. This requires the separation of roles in the operations of the company. In the practice of managing modern companies, there is a separation between the owner (principal) and the manager (agent), where the owner is no longer a party that can directly control the operations of the company, but the management of the company is the outsider manager's authority as a professional manager (agent). Therefore, the daily operational authority of the company in using its resources is in the hands of professional managers (agents). The shareholders (principals) who have handed over the management authority to the professional managers only hope that they would act professionally in every decision making while prioritizing the shareholders' interest which is to increase their prosperity by continually increasing the value of the company. The practice of separation between the owners and managers does not go smoothly as expected. There is a conflict of interest in the relationship between the principal and agent where in the management practice, the company manager does not always behave and act in accordance with the interests of the owner (Shleifer & Vishny, 1997). Even in some cases, the managers' decisions and actions focus on things that benefit them as executives and result in

* Corresponding author.

E-mail address: ekahandriani@gmail.com (E. Handriani)

losses that must be borne by the shareholders. Unification of the interests of shareholders, debt holders, and management who are the parties aiming to maximize the shareholders' prosperity as a company goal is not always easy and often creates agency problems. The agency cost of different interests refers to the problems between the shareholders and the managers as professionals. As a party that accepts the authority to run the operational wheel of the company from the shareholders, the manager should have great responsibility, motivation, commitment, and loyalty in carrying out the company's activities in accordance with the shareholders' expectations. In practice, all of these expectations cannot be realized, because the actions taken by the management may lead to executive profits. The agency problems in the management shows that the company's value will be optimal if the managers are able to be controlled, so that every decision making always focuses on improving the company performance. In today's business world, many companies in Indonesia experience these problems and file for bankruptcy. It is because there are many influences after the decisions, such as the impact on financial institutions and shareholders and the main problem in academic literature is how to detect problems of financial difficulties. Although a model detecting bankruptcy has been developed since the 1960s (Beaver, 1967; Altman, 1968), in its development, similar researches have been carried out in developed countries (Pascual, et al., 2015; Apergis, 2015; Arampatzi, et al.,2015; Gao, et al., 2017; Alman, et al., 2017; Männasoo, et al.,2018). Most of the results of previous studies (Fijorek & Grotowski, 2012; Attaran et al., 2012) on accounting and financial data consider them as only explanatory factors. From the late 1980s to the mid 1990s, several authors (Hambrick & D'Aveni, 1992; Gilson, 1990; Daily & Dalton, 1994; Gales & Kesner, 1994) began to investigate the relationship between corporate financial difficulties in a certain period of governance. Several studies confirmed that corporate governance variables significantly increased the strength of predicting bankruptcy forecasts and they were in line with the results of research conducted by Donoher (2004), Fich and Slezak (2008), Chang (2009), Lajili and Zéghal (2010) and Platt and Platt (2012).

The governance issue is not a new thing and the time lag considered as a turning point is the economic crisis experienced by most countries in the world including in Indonesia in mid of 1997. Several factors such as weak institutional supervision, business practices (especially in the banking sector that has not been able to pursue risk management appropriately), and funding and investment decisions (that are less relevant because they are more dominated by other disguised interests) are considered as a mirror of poor governance. These factors illustrate that, at that time in Indonesia, the implementation of the GCG principles had not been fully implemented by the management. The existence of governance is considered to be increasingly important, especially in conditions of financial crisis. This is because in the crisis period, the interests of minority shareholders will be increasingly neglected because of the dominance of the interests of the majority shareholders. In other words, although there is an agreement that one share is one vote, the existence of minority shareholders has a low shareholding composition so that their voice is not accommodated at the General Meeting of Shareholders. Investors as potential shareholders are also increasingly encouraged to pay more attention to how the company's operations are carried out so far, especially whether the company implements good governance or not. It does not only happen in Indonesia. Several studies showed that the application of good governance in companies was such a global need, so the application and results also varied from one country to another. Companies with weak governance are considered vulnerable to economic downturns. The company's internal conditions are also influenced by the overall economic condition. Through the Decree of the Coordinating Minister for the economy, finance and industry of KEP-31/M.EKUIN/06/2000, the government of the Republic of Indonesia formed a special institution named the national committee on corporate governance policy (*komite nasional mengenai kebijakan "*corporate governance*"* (KNKCG)). This institution has the main task of formulating and drafting national policy recommendations on corporate governance, as well as initiating and monitoring improvements in corporate governance in Indonesia. In 2001, the KNKCG succeeded in compiling general guidelines for GCG. In 2004, corporate governance guidelines were formulated in the banking sector and they also formulated guidelines for independent commissioners and guidelines for establishing audit committees. Through the Decree of the Coordinating Minister for the economy of: KEP-49/M.EKON/II/2004, National Governance Policy Committee (*komite nasional kebijakan* "governance" (KNKG)) was established which expanded the scope of the socialization task, not only in the corporate sector but also in the public sector. In line with developments in 2006, the KNKG improved the corporate governance guidelines issued in 2001. The guidelines highlight several points on financial statement disclosure and transparency which consist of **first,** clarifying the role of the three supporting pillars (country, business world, and society) in the context of creating a conducive situation for implementing GCG; **second**, providing basic guidelines for implementing business ethics and behavioural guidelines; **third**, providing complete corporate organs such as the board of commissioners supporting committee (audit, risk policy, nomination and remuneration, and corporate governance policy committee); clarifying the function of corporate management by directors which includes five things in the framework of the application of GCG covering management, risk management, internal control, communication, and social responsibility; **fourth**, clarifying the company's obligation to other stakeholders other than the shareholders such as employees, business partners , and the community as well as users of products and services; and **fifth,** providing practical guidance on the implementation of GCG guidelines.

The specific context of this study marked by many bankruptcy cases makes it possible to highlight the controlling patterns of corporate governance and their impact on financial difficulties. In Indonesia, the worst result of financial distress is that companies can be declared bankrupt by the local district court. Bankruptcy, in Indonesia, is regulated in Law Number 37 of 2004 concerning bankruptcy. It is stated that the debtor who has 2 or more creditors and at least cannot pay at least one debt that has fallen due and cannot be billed, is declared bankrupt with a court decision that is authorized, both at his own request, and at the request of five or more creditors. This request can also be submitted by the prosecutor's office in the public interest.

This study aims to examine the effectiveness of internal corporate governance mechanisms consisting of institutional ownership, board size and board independence and profitability, financial expenses, retained earnings and firm size for the occurrence of financial distress. This study may contribute to better academic insight into the role of manufacturing corporate governance in Indonesia using the Lisrel test on a sample of 315 companies cited in the IDX financial report. The second section of this study develops hypotheses about the influence of governance variables and profitability, financial expenses, retained earnings and firm size on financial distress. The third section discusses the sample and methodology used. The fourth section elaborates descriptive statistics, test results, and hypotheses testing results before in-depth discussion. The last section provides conclusions.

2. Background Theory and Hypotheses Development

2.1. Theory of Modigliani and Miller

The modern capital structure theory that houses the first financial distress conditions is the theory of Modigliani and Miller (MM theory). They argue that capital structure is irrelevant or does not affect the value of the company. With some theoretical assumptions, MM theory proposes two propositions known as MM without tax prepositions. **First,** the company value of an indebted company is equal to the value of a debt-bearing company. The implication is that the capital structure of a company is irrelevant and changes in capital structure do not affect the company's value and the company's weighted average cost of capital (WACC) will remain the same, not influenced by how the company combines debt and capital to finance the company. **Second,** the cost of share capital will increase if the company carries out or seeks external loans. The risk of the equity depends on the business and financial risk. Brealey, Myers and Marcus (1999) concluded that this MM without tax theory does not distinguish between indebted companies or the shareholders of the debt-bearing companies in a condition of without taxation and perfect markets. The value of a company does not depend on its capital structure. In other words, the financial managers cannot increase the value of a company by changing the proportion of debt and equity used to finance the company. **Third,** the company value of an indebted company is equal to the value of a debt-bearing company plus tax savings due to debt interest. The implication is that financing with debt is very profitable and MM states that the company's optimal capital structure is one hundred percent debt. **Fourth,** the cost of share capital will increase with increasing debt, but the tax savings will be greater than the decrease in value due to the increase in the cost of share capital. The implication is more use of debt will increase the cost of share capital. Using more debt means using cheaper capital, thereby reducing the WACC (although the cost of share capital increases). The MM's theory is very controversial. The theory suggests that companies should use as much debt as possible. In practice, no company has such a large debt, because the higher the debt level of a company, the higher the probability of bankruptcy. This is what lies behind the MM theory as it ignores bankruptcy costs.

2.2. Trade-off Theory

This theory was developed by Myers (2001). This theory explains that a company will have a certain level of debt, where the tax shields from additional debt are the same as financial distress costs. The financial distress costs are the cost of bankruptcy or reorganization, and the increasing agency costs due to the decline in the company's image. The trade-off theory in determining an optimal capital structure includes several factors including tax, agency costs and financial distress costs, but it still retains the assumption of symmetric information as a balance and benefit of using debt. The optimal debt level will be achieved when the tax shields reach the maximum amount of costs of financial distress. This theory implies that managers will think in terms of the trade-off framework between tax savings and financial distress costs in determining capital structure. Companies with high levels of profitability will certainly try to reduce taxes by increasing debt ratio, so that the additional debt will reduce taxes. In reality, rarely do financial managers think that way. Donaldson (1961) made an observation of the behavior of the capital structure of companies in the United States. The study shows that companies with a high level of profitability tended to have a low debt ratio. This is contrary to the opinion of the trade-off theory. The trade-off theory cannot explain the negative correlation between the level of profitability and the debt ratio (Beuselinck et al., 2017).

2.3. Financial Distress

Financial distress is a condition in which a company experiences a stage of decline in financial conditions before bankruptcy. The financial difficulties of companies, according to Altman and Hotchkiss (2006), can be attributed to four general terms used in business research: failure, bankruptcy, and default. Failure arises when the rate of return on investment is not in accordance with invested capital, or income that is not sufficient to cover costs, where the return on average investment is constantly below the cost of capital. Financial distress occurs before the bankruptcy of a company. Thus, the financial distress model needs to be developed, because by understanding the condition of corporate financial distress early, it is expected that actions can be taken to anticipate conditions that lead to bankruptcy. Financial distress can be measured through financial statements by analyzing financial statements. Financial statements are the result of an activity that is technical in nature based on methods and procedures that require explanations so that the purpose to provide useful information can be achieved. Financial reports can be used as a tool to make projections about various financial aspects of the company in the future, as well as how to manage a separated management between the manager and owners. Financial difficulties are situations where a company cannot pay its debt at a certain time. Companies experiencing financial difficulties must meet more costs than normal companies do. These costs can reduce the value of the company in the investors' perspective. It also has the potential to reduce

asset value progressively during the liquidation process. In addition, the company is also indirectly burdened by the costs imposed by customers due to the unavailability of products, suppliers, and providers of capital as a result of financially depressed conditions and managerial actions that are not optimal during the periods of financial difficulties and poor manager performance. Previous researches had tried to find ways to reduce the high cost of financial distress, especially those related to the use of costs in capital structure theory, which reflects a decline in corporate performance. This decline in performance can continue for a longer period which gives impact on the failure of the company's economy. The length of the bankruptcy period depends on the structure of the company's debt maturity, while the default depends on the due date followed by renegotiation and turnaround or liquidation. The biggest challenge in financial difficulties is recognizing the processes that occur towards financial distress and immediately try to get more time to respond and anticipate.

2.4. Corporate Governance and Financial Distress

Studies of corporate governance and financial distress had provided many definitions of financial difficulties based on legal criteria. Altman (1968) concluded that legal financial difficulties refer to bankruptcy and it has to be liquidated. This is in line with the results of research conducted by Koh et al. (2015), Geng et al. (2015), Glover (2016), Bhaskar et al. (2017), and Gan and Sahu (2017). The condition of financial distress that ends in bankruptcy has an effect on the role of governance in the company, especially in the control function performed. Separation of roles that have been carried out gives hope for the shareholders to obtain high profitability and so do the high-risk projects. The high expectations of shareholders on high-risk corporate projects with high return strategies are expected to maximize their value. Projects with positive net present value (NPV) and high variants will be preferred. However, this strategy can affect the work of managers in companies because it can face the risk of failure. Managers, unlike shareholders who can diversify their portfolios, have their wealth tied to the survival of the company. It can be said that if corporate governance effectively provides a control function in determining the company's debt so as not to over-borrow, thus the risk of financial difficulties can be avoided. The relationship between the structure of corporate governance and financial difficulties exists because financial difficulties are not separate events. Several results of the previous studies conclude that company failure was directly related to the CEO, board of directors and members of top management. Similar researches had been carried out in developed countries as (Armstrong et al., 2015; Parkinson, 2016; Darrat, et al., 2016; De Haan & Vlahu, 2016; Faleye & Krishnan, 2017; Pay et al., 2018; Bayar et al., 2018). In Indonesia, there are also studies developed by Kristanti et al. (2016), Paramita and Arifin (2017), Dewi and Hadri (2017) and Powell (2018). This present study uses several proxies to explain the role of corporate governance in the control function of managers including institutional ownership, board size and board independence.

2.4.1. Institutional Ownership and Financial Distress

Traditionally, manufacturing companies in Indonesia serve public interests. Like the conditions in other countries, the government of Indonesia has a blueprint of building investment comfort and competitiveness of national products through market forces by facilitating easy access to the financial community. However, poor corporate governance often paralyzes the efficiency of national manufacturing companies. In particular, corporate executives are usually evaluated on dimensions other than company performance, such as contributions to local economic growth and employment, which are aimed at optimizing company performance and shareholders' prosperity. The relationship between institutional ownership and financial difficulties is a condition that often occurs. Several results of the previous studies conclude that corporate failure directly related to the management of monitoring systems conducted by institutional ownership. Similar researches had been widely carried out in developed countries such as in Europe (Wanke, et. al., 2015; Wei, et. al., 2016; Manzaneque, et. al., 2016; Fernandes, et. al., 2017). Similar studies in Indonesia were done by Witiastuti and Suryandari (2016), Kuncoro and Agustina (2017) and Silvia and Sari (2018). The first hypothesis in this study is in accordance with the Modigliani and Miller Theory which identifies the condition of companies experiencing financial difficulties which must meet more costs than normal companies do. These costs can reduce the value of the company in the investors' perspective. This has the potential to also progressively reduce the asset value during the liquidation process. The monitoring role of institutional ownership is to maintain the company's performance so it does not experience any financial difficulties. The monitoring control of corporate finance conditions in the decision-making process is important when the manager is performing and implementing a financial decision. Based on the description above, **the first hypothesis that can be proposed is that there is a positive influence of institutional ownership on financial distress.**

2.4.2. Board Size and Financial Distress

Researches on the impact of board size on financial distress show that there was a significant negative effect on corporate financial failure. Previous researches stated that companies with a big board size were able to do better monitoring so as to reduce the company's financial failure. Researches on this issue had been widely done with the different research subjects, thus the results obtained were relatively various. In developed countries, similar researches were done by Shahwan (2015), Manzaneque et al. (2016) and García-Meca et al. (2017), finding empirical evidence that board size and the independence of board members for companies with family and public ownership had a negative and significant influence on the company's financial distress.

The second hypothesis of this study is that there is a positive influence of board size supervision function on financial

distress. The potential for conflict of interest between various parties within the company makes the potential for monitoring increasingly stronger for financial conditions. The conflict was caused by differences in the goals of each party based on their position and interests in the company (Jensen & Warner, 1988). This conflict is known as an agency problem that actually arises when the complex problems faced by the company begin. The control over agency problems in the decision-making process is important when managers carry out the monitoring mechanisms.

2.4.3. Board Independence and Financial Distress

Board independence structure and its influence on financial distress is one of the most studied fields in the finance of contemporary companies. However, despite extensive research in this field which covers more than two decades and mainly studies companies in developed countries, there is clear evidence of a strong relationship between board independence structure and financial distress. The KNKCG does not allow board independence occupying executive positions in registered companies where they are involved. They are also not allowed to engage in any business or relationship with a company or major shareholders that will prevent them from acting independently or objectively. In addition, the board independence is prohibited directly or indirectly to hold more than 1 percent of the total listed shares. The agency theorists consider the independence of management as an important attribute of the role of monitoring (Fama, 1980; Fama and Jensen, 1983). The independent directors are responsible for monitoring and evaluating the management (Jensen & Meckling, 1976). Other researchers point out that directors from outside of the company did not have specific knowledge or expertise towards companies in carrying out their duties properly (Bravo & Reguera, 2018). The cause and effect relationship do not always mean that the board's independence is irrelevant. It is consistent with the view that the company's internal governance mechanisms, such as board independence, are determined endogenously and represent an efficient response to the environment and operations of the company. This is supported by several researchers such as Arora (2018), Kalyani et al. (2019), and Vieira (2018). The US-based empirical studies using non-US data consistently documented positive relationships between board independence and company performance. They showed the possible substitution effects between internal and external governance mechanisms compared to the US. The countries in the study usually had less developed legal and extra-legal institutions to provide protection for investor rights. In these countries, the mechanism of internal governance, such as the structure of the board, became more important (Saidat, et al., 2019; Buchanan, et al., 2018).

The third hypothesis of this study is that there is a positive influence of board independence supervision function on financial distress.

This present study is largely driven by the current state of the literature on board independence and company performance. Empirical research in Indonesia still leaves a gap. This study tries to fill the gap by empirically proving that board independence has a positive effect on financial distress.

2.1.1. Firm Size and Financial Distress

Theoretically, small companies have a bigger problem in accessing capital because of asymmetrical information. The difficulties are getting more severe when financial distress occurs, while large companies must have a more complex management system and high profits. However, large companies have more complex problems and risks than small companies. Company size can be expressed in total assets, sales and market capitalization. The greater the total assets, sales and market capitalization, the greater the size of the company. Greater company assets will result in more capital and sales, faster money circulation of money, greater market capitalization and thus the company will be widely known to the public. The issue of performance degradation has a very negative impact on the value of the company. When a company's business is in a state of deterioration to the point where it cannot meet its financial obligations, the company is considered to have entered a state of financial difficulties. The first signal of this danger is usually the inability to pay debts and a dividend reduction. Financial difficulties are interpreted as a corporate financial condition that shows a condition when promises to creditors of a company are violated. For small-scale companies, sometimes financial difficulties can cause bankruptcy. The opposite applies to large companies with financial difficulties which are able to make a strategy to turn around to rise to do efficiency in order to achieve financial improvement. Several studies that are in line with this are done in several developed countries (Shahwan, 2015; Megginson, et al., 2016; Al-Hadi, et al., 2017; Du, & Lai, 2018). Therefore, **the fourth hypothesis is that there is a positive influence of firm size on financial distress.**

2.4.4. Profitability and Financial Distress

Profitability is the ability of a company to obtain profits in relation to sales, total assets, and capital. It shows the ability of the company to obtain profits or a measure of the management effectiveness of the company's management (Handriani & Robiyanto, 2018). The ability to obtain profits can be measured from the capital or all funds invested into the company. Profitability is the final result of various company policies and decisions which can be used as a measure of the company's ability to obtain sales profits.

High profitability is a reflection of the company's success that can reduce the probability of financial distress. Various studies have been conducted to prove that profitability is positively related to financial distress (Boubaker, at al., 2018; Dalci., 2018; Charalambakis, & Garrett, 2019; Dary & James., 2019). Charalambakis et al. (2019) conducted a study using large data covering almost 31.000 Greek private companies and successfully examined the determinants of financial distress. Using a multi-period logit model, they found that profitability, leverage, retained earnings ratio against total assets, size, liquidity ratio, export dummy variable, tendency to pay dividends and growth rates in real GDP were strong predictors of possible financial difficulties. The main findings from the study show that profitability was a major factor determining financial distress in Greece.

The fifth hypothesis of this study is that there is a positive influence of profitability on financial distress.

Based on the description above, bankruptcy of a company is a scary thing, both for company owners and employees. By understanding the impact of financial distress, therefore it is important for the company owners to sell their assets to pay off the debt. On the other hand, the employees would experience lost sources of income.

3. Research Methods

3.1. Research Type

This research was an observation research based on aspects of data collection methods, where the nature of the data could only be observed based on the company's financial statements on the Indonesia Stock Exchange without trying to obtain other information.

3.2. Population and Sample

The better climate of the business world had contributed to the development of the Indonesian capital market. The annual Indonesia Stock Exchange (IDX) report wrote that the number of issuers listed on the Indonesia Stock Exchange (IDX) for financial statements in 2010 were 422 issuers which was similar the previous year's data of 442 in 2011, 463 issuers in 2012, 486 issuers in 2013, 509 issuers in 2014, 525 issuers in 2015, 539 issuers in 2016, 555 issuers in 2017 and 618 in 2018. Based on the Indonesian Capital Market Directory (ICMD) observed from 2010 to 2018, due to the limited data obtained, this study only used 9 manufacturing companies as samples and there were 300 observations during the period of 2010-2018. Table 1. presents the data used in this study.

Table 1
Research Data

No	Industry	Company	Observation
1	Food and Beverage	10	25
2	Customer Good	4	12
3	Metal and Allied Product	9	14
4	Cables	6	27
5	Paper and Allied Product	3	7
6	Cement	3	10
7	Ceramic & Porcelain	6	20
8	Chemistry	10	25
9	Plastic and Packaging	7	24
10	Cattle Fodder	4	10
11	Automotive and Components	12	46
12	Textile and Garment	10	36
13	Cigarettes	3	17
14	Pharmacy	7	27
	Total	94	300

Source: Processed data

Descriptive statistics presents the descriptions of minimum values, maximum values, average values and standard deviation values of exogen variables including institutional ownership (IO), board size (BZ), firm size (FS), profitability (PRO), and board independence (BI), and financial distress (FD) as the endogen variable. The number of financial statement observation units during the period of 2011-2018 reached 300 units of observation. Table 2 presents the descriptive statistics.

Table 2
Descriptive Statistic of Research Data in 2011-2018

	N	Range	Minimum	Maximum	Mean	Std. Deviation
IO	300	50.9500	38.1900	99.1400	75.415414	14.8623455
BZ	300	9	1	10	4.07	1.539
FS	300	8.2	10.3279	18.54163208	14.203757	1.5275566
PRO	300	.4079	.00001	.4079	.119810	.0965946
BI	300	.9091	.0909	1.0000	.273646	.1056137
FD	300	18	0	.98	.58	.1961
Valid N (listwise)	300					

Source: Processed data

3.3. Research Method

A path analysis was used to find out and analyze the influence of exogenous variables on endogenous variables. Several requirements that must be met in the procedure of processing data using path analysis were that: 1) the relationship between variables should be linear and additive; 2) all residual variables did not correlate with each other; 3) the relationship pattern between variables should be recursive where the causal relationship was unidirectional, not reciprocal; and 4) the level of measurement of all variables should at least be intervals. The regression equation can be arranged as follows.

$$FD(Y1): Y1 = \beta_0 + \beta_1\,IO + \beta_2\,BZ + \beta_3\,FS + \beta_4\,Pro + \beta_5\,BI + \varepsilon_1$$

4. Definition of Operational Variables

The exogeneous variables included institutional ownership (IO), board size (BZ), firm size (FS), profitability (PRO), and board independence (BI). While the endogenous variable was only financial distress (FD).

Table 3
Research Variables

Variable		Measurement
Financial Distress	FD	Its earnings before Interest and taxes depreciation and amortization (EBITDA)
Institutional Ownership	IO	Number of shares owned by domestic institutional investors / the entire share capital of the company.
Firm Size	Fs	Natural Logarithm of Total Asset
Profitability	Pro	Profitability After Tax/ Total Asset
Board independence	BI	Percentage of the number of board independence members from the total number of board members.

Source: Previous studies

4.1. Result of Goodness of Fit Test

Goodness of fit test measures the suitability of the data (covariance or correlation matrix) with the prediction of the proposed model.

Table 4
Result of Goodness of Fit Test

Tests	Value	Cut-off Value	Conclusion
Chi-Square dan Probability:			
1. Minimum Fit Function Chi Square	P = 0.38	P > 0,005	Fit
2. Normal Theory Weighted Least Square Chi Square	P = 0.47	P > 0,005	Fit
Goodness of Fit Indices (GFI)	1.20	P ≥ 0,90	Fit
1. Adjusted Goodness of Fit Index (AGFI)	0.98	P ≥ 0,90	Fit
2. Parsimony Goodness of Fit Index (PGFI)	0.98	P > 0,05	Fit
1. Root Mean Square Error of Approximation (RMSEA)	0.0005	< 0,050	Fit
2. P-Value for Test of Close Fit (RMSEA)	0.003	< 0,050	Fit
1. Expected Cross Validation Index (ECVI)	0.23	1. ECVI (0,24) < ECVI for Saturated (0,27) Model	Fit
2. ECVI for Saturated Model	0.27	2. ECVI (0,27) < ECVI for Independence Model (2,78)	
3. ECVI for Independence Model	2,78		Fit
Akaike's Information Criterion (AIC) dan CAIC:		1. Model AIC (76.99) < Independence AIC (584.11) dan Model AIC (221,59) < Saturated AIC (311,35)	Fit
1. Model AIC	76.99		
2. Independence AIC	584.11		
3. Saturated AIC	90,00	2. Model CAIC (76,99) < Independence (984,11) Dan Model CAIC (221,59) < Saturated AIC (311,35)	Fit
4. Model CAIC	221.59		
5. Independence CAIC	984.11		
6. Saturated AIC	311.35		
Fit Index: Normed Fit Index (NFI) Comparative Fit Index (CFI) Incremental Fit Index (IFI) Relative Fit Index (RFI)	P > 0,94	0,99	Fit
	P > 0,93	0,98	Fit
	P > 0,92	0,99	Fit
	P > 0,93	0.97	Fit

Source: The result of data processing by LISREL

There were several measures used, **first,** Chi-Square, and Probability. The Chi-Square value shows the size of the poor fit of a model. A Chi-Square value of 0 indicates that the model has a perfect fit. A significant chi-square value (less than 0.05) indicates that the empirical data have several differences with the established theories, and if the probability value is not significant, it indicates that the empirical data is according to the model. If the assumption of normality is met, there are two types of Chi-Square including Minimum Fit Function Chi-Square and Normal Theory of Weighted Least Squares Chi-Square. **Second,** Goodness of Fit Indices (GFI). It is a measure of a model accuracy in generating covariance observed matrices. GFI values should range from 0 to 1, and a GFI value of greater than 0.9 indicates a fit for either model. **Third**, Adjusted Goodness of Fit Index (AGFI). It is a GFI that has adjusted the influence of degrees of freedom of a model. AGFI score of 1 shows the perfect fit model. While Parsimony Goodness of Fit Index (PGFI) is a GFI that has adjusted the impact of degree of freedom and model complexity. Models are considered fit if the value of PGFI is much greater than 0.6. **Fourth**, Root Mean Square Error of Approximation (RMSEA). It measures the deviation of parameter values on a model with its population covariance

matrix. RMSEA value of less than 0.05 indicates a fit model. Confidence intervals to assess the accuracy of RMSEA estimates should be small, indicating that the RMSEA has a good accuracy. **Fifth,** Expected Cross Validation Index (ECVI). It is used to assess the trend that models on a single sample can be cross-validated if the sample size and population are equal. If the ECVI value of the model is lower than the value of ECVI saturated model and independence model, it indicates that the model is fit. **Sixth**, Akaike's Information Criterion (AIC) and CAIC. They are used to assess the Parsimony problem in the fit model assessment. If AIC and CAIC values are lower than the AIC of saturated model and independence, it shows a better fit model. **Seventh**, Fit Index, Normed Fit Index (NFI) and Comparative Fit Index (CFI). They are used to determine the fitness of a model. NFI and CFI values range between 0 and 1. A model is considered fit if it has NFI and CFI values of greater than 0.9. No-Normed Fit Index (NNFI) is used to overcome problems from the model complexity. Incremental Fit Index (IFI) is used to address Parsimony problems and sample sizes and is associated with NFI. The cut-off limit of IFI is 0.9. While the Relative Fix Index (RFI) is used to measure fit, whose value ranges between 0 and 1, greater value indicates a superior fit. Table 4. shows that all goodness of fit model structured index is fit. The results can be seen in Table 4.

4.2. Result of Hypotheses Test

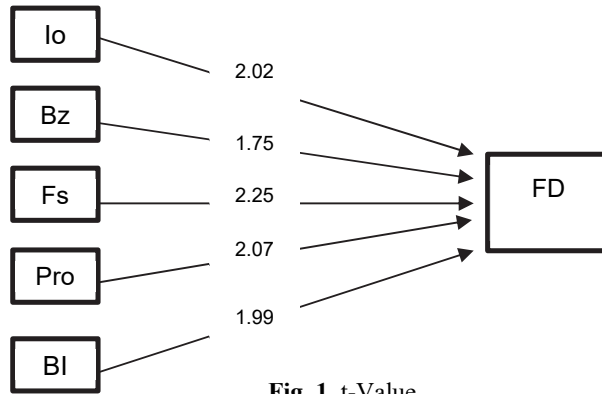Fig. 1. presents the hypotheses test result which can be identified based on the t-value.

Fig. 1. t-Value

Source: The result of data processing by LISREL

Table 5. presents the direct effect between variables.

Table 5
Direct Effect of Institutional Ownership, Board Size, Firm Size, Profitability, Board Independence and Financial Distress Variables

Variable	Unstandardized Estimate	Standardized Coefficient	t-Value
IO → FD	0.21	0.06	2.02*
BZ → FD	0.30	0.02	1.75
FS → FD	0.10	0.50	2.25*
Pro →FD	0.50	0.50	2.07*
BI → FD	0.40	0.52	1.99*

Notes: *) Significant at α = 5%   Source: The result of data processing by LISREL
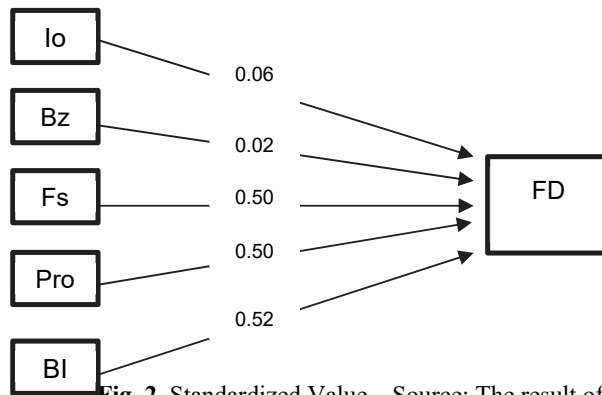
Fig. 2. presents the SEM structure.

Fig. 2. Standardized Value   Source: The result of data processing by LISREL

Based on Fig. 2., a mathematical equation can be made as follows:

FD(Y1): Y1 = 0,06*IO + 0,02*BZ + 0,50*FS + 0,50*Pro + 0,52*BI + ε1

$R^2 = 0,45$

5. Result

This first hypothesis states that institutional ownership has a positive influence on financial distress. This hypothesis aims to test the first hypothesis research: institutional ownership a positive effect influences financial distress

Institutional ownership was measured by the number of shares held by domestic institutional investors to the entire share capital of the company. The results indicate that institutional ownership has a positive standardized coefficient (0.06) and a t-value of 2.02 which is greater than 1.96 at a significance level of 5%. Therefore, the first hypothesis is empirically supported. The second hypothesis states that board size has a positive influence on financial distress. This hypothesis aims to test the hypothesis of the second study: Board size has a positive effect on financial distress? It was measured by the number of all members of the board of commissioners owned by the company. The results indicate that board size has a positive standardized coefficient (0.02) and a t-value of 1.75 which is smaller than 1.96 at a significance level of 5%. Therefore, the second hypothesis is not empirically supported. The third hypothesis states that firm size has a positive influence on financial distress. This hypothesis aims to test the first hypothesis research : firm size has a positive effect on financial distress.

It was measured by the percentage of shares owned by the institution of the total number of shares outstanding, with the total number of members of the board of commissioners owned by the company. The results indicate that firm size has a positive standardized coefficient (0.50) and a t-value of 2.25 which is greater than 1.96 at a significance level of 5%. Therefore, the third hypothesis is empirically supported.

The fourth hypothesis states that profitability has a positive influence on financial distress. This hypothesis aims to test the first hypothesis research: profitability has a positive effect and influences financial distress. It was measured by the proportion of the company's net profit distributed to shareholders. The results indicate that profitability has a positive standardized coefficient (0.50) and a t-value of 2.07 which is greater than 1.96 at a significance level of 5%. Therefore, the fourth hypothesis is empirically supported. The fifth hypothesis states that board independence has a positive influence on financial distress. This hypothesis aims to test the first hypothesis research: board independence has a positive effect on financial distress. It is a measure of the amount of total assets owned by the company as measured by Natural Logarithm of Total Assets. The results indicate that board independence has a positive standardized coefficient (0.52) and a t-value of 1.99 which is greater than 1.96 at a significance level of 5%. Therefore, the fifth hypothesis is empirically supported.

6. Discussion

The results of testing the first hypothesis show that the influence of institutional ownership on financial distress has a positive significant direction. Thus, institutional ownership had positive implications on monitoring to avoid financial distress. This finding supports a claim where many public companies with majority shares controlled by individuals who have high institutional ownership would automatically support better managerial performance. This study confirmed that institutional ownership positively related to financial distress and it was in line with the agency theory which focuses on monitoring managers who were assumed to often have deviant interests from the owners and shareholders. However, it did not apply to public companies whose majority shares were controlled by institutional ownership. In the public companies whose majority shares were in institutional ownership, the ownership alignment and control were more disciplined. More importantly, the institutional ownership had the company knowledge and understood the efficiency of companies that focused on the company's short-term goals.

The results of testing the second hypothesis show that the influence of board size on financial distress has a positive direction. This study concluded that **first**, in a growing company, all actions of the company managers were easier to observe. Therefore, it did not require a board size as a control device to avoid financial distress. **Second**, the consequences of companies experiencing growth, the bargaining power of the manager was bigger and it was dominating as it had a special knowledge needed to make decisions to avoid financial distress. This made the board size to have a less role in monitoring mechanism. **Third,** the agency theory showed that the importance of the monitoring mechanism was due to the information asymmetry that came from the separation of ownership and management. This had the potential to threaten the interests of shareholders.

The results of testing the third hypothesis indicate that the effect of firm size on financial distress has a significant positive direction. It means that firm size had positive implications for the financial stress conditions. Small size companies tended to experience limitations in accessing funding sources in the capital market. Efforts to meet these funding sources needed to determine the right choice for the most logical conditions for the company's financial condition to avoid financial distress. This behavior tended to reduce the occurrence of financial stress. The small sized company's desire for investment was done

by making product innovations to keep up with the market developments, so it was likely to have a competitive advantage in exploring investment opportunities. In other words, it could be concluded that small sized companies who were maximizing their investment opportunities could increase growth and simultaneously led to an increase in profitability and avoid financial distress.

The results of testing the fourth hypothesis indicate that the effect of profitability on the occurrence of financial distress conditions has a significant positive direction. Thus, it implies that profitability had positive implications to avoid financial distress. Companies with high levels of profitability generally used relatively small amounts of debt. This small debt had the potential to keep the company away from the financial distress, allowing the company to carry out company activities with retained earnings only.The results of testing the fifth hypothesis indicate that the board independence has a positive effect of financial distress. This hypothesis was used to examine the ratio of the number of board independence members compared to the total number of board members. This proxy describes a condition of the independence of the board of commissioners in a company, one of which was by presenting board independence members in the composition of the board of commissioners. The effectiveness of the board of commissioners in balancing the CEO strength was strongly influenced by the level of independence of the board of commissioners. Thus, the results of this study are sufficient to find enough evidence to support that the role of board independence as a proxy for corporate governance mechanisms was capable of monitoring the prevention of financial distress. The existence of a meaningful relationship between the board independence in preventing financial distress provided an explanation that it was in accordance with a recommendation by the KNKG in 2004 which states that independent commissioners are board members who are not affiliated with management, other members of the board of commissioners and controlling shareholders, and are free from business relationships or other relationships that can affect their ability to act independently or act solely for company interests.

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References

Al-Hadi, A., Chatterjee, B., Yaftian, A., Taylor, G., & Monzur Hasan, M. (2019). Corporate social responsibility performance, financial distress and firm life cycle: evidence from Australia. *Accounting & Finance, 59*(2), 961-989.

Altman, E. I., Iwanicz-Drozdowska, M., Laitinen, E. K., & Suvas, A. (2017). Financial distress prediction in an international context: A review and empirical analysis of Altman's Z-Score model. *Journal of International Financial Management & Accounting*, 28(2), 131-171.

Apergis, N. (2015). Forecasting Credit Default Swaps (CDSs) spreads with newswire messages: Evidence from European countries under financial distress. *Economics Letters, 136*, 92-94.

Arampatzi, E., Burger, M. J., & Veenhoven, R. (2015). Financial distress and happiness of employees in times of economic crisis. *Applied Economics Letters, 22*(3), 173-179.

Armstrong, C. S., Guay, W. R., & Weber, J. P. (2010). The role of information and financial reporting in corporate governance and debt contracting. *Journal of Accounting and Economics, 50*(2-3), 179-234.

Arora, P. (2018). Financially linked independent directors and bankruptcy reemergence: The role of director effort. *Journal of Management, 44*(7), 2665-2689.

Baselga-Pascual, L., Trujillo-Ponce, A., & Cardone-Riportella, C. (2015). Factors influencing bank risk in Europe: Evidence from the financial crisis. *The North American Journal of Economics and Finance, 34*, 138-166.

Bayar, O., Huseynov, F., & Sardarli, S. (2018). Corporate Governance, Tax Avoidance, and Financial Constraints. *Financial Management, 47*(3), 651-677.

Beuselinck, C., Cao, L., Deloof, M., & Xia, X. (2017). The value of government ownership during the global financial crisis. *Journal of corporate Finance, 42*, 481-493.

Bhaskar, L. S., Krishnan, G. V., & Yu, W. (2017). Debt covenant violations, firm financial distress, and auditor actions. *Contemporary Accounting Research, 34*(1), 186-215.

Boubaker, S., Hamza, T., & Vidal-García, J. (2018). Financial distress and equity returns: A leverage-augmented three-factor model. *Research in International Business and Finance, 46*, 1-15.

Bravo, F., & Reguera-Alvarado, N. (2018). Do independent director's characteristics influence financial reporting quality?. *Spanish Journal of Finance and Accounting/Revista Española de Financiación y Contabilidad, 47*(1), 25-43.

Buchanan, B., Cao, C. X., & Chen, C. (2018). Corporate social responsibility, firm value, and influential institutional ownership. *Journal of Corporate Finance, 52*, 73-95.

Charalambakis, E. C., & Garrett, I. (2019). On corporate financial distress prediction: What can we learn from private firms in a developing economy? *Evidence from Greece. Review of Quantitative Finance and Accounting, 52*(2), 467-491.

Dalci, I. (2018). Impact of financial leverage on profitability of listed manufacturing firms in China. Pacific Accounting Review, 30(4), 410-432.

Darrat, A. F., Gray, S., Park, J. C., & Wu, Y. (2016). Corporate governance and bankruptcy risk. *Journal of Accounting, Auditing & Finance, 31*(2), 163-202.

Dary, S. K., & James Jr, H. S. (2019). Does investment in trade credit matter for profitability? Evidence from publicly listed agro-food firms. *Research in International Business and Finance, 47*, 237-250.

De Haan, J., & Vlahu, R. (2016). Corporate governance of banks: A survey. *Journal of Economic Surveys, 30*(2), 228-277.

Dewi, A., & Hadri, M. (2017). Financial distress prediction in Indonesia companies: finding an alternative model. *Russian Journal of Agricultural and Socio-Economic Sciences, 61*(1).

Du, X., & Lai, S. (2018). Financial distress, investment opportunity, and the contagion effect of low audit quality: Evidence from china. *Journal of Business Ethics, 147*(3), 565-593.

Faleye, O., & Krishnan, K. (2017). Risky lending: Does bank corporate governance matter?. *Journal of Banking & Finance, 83*, 57-69.

Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of Political Economy, 88*(2), 288-307.

Fama, E. F., & Jensen, M. C. (1983). Agency problems and residual claims. *The Journal of Law and Economics, 26*(2), 327-349.

Fernandes, C., Farinha, J., Martins, F. V., & Mateus, C. (2016). Determinants of European banks' bailouts following the 2007–2008 financial crisis. *Journal of International Economic Law, 19*(3), 707-742.

Gan, G. G., & Sahu, P. K. (2017). Prediction of Financial Distress for Electricity Sectors Using Data Mining. In Recent Trends in Information and Communication Technology: Proceedings of the 2nd International Conference of Reliable Information and Communication Technology (IRICT 2017)(Vol. 5, p. 3). Springer.

Gao, P., Parsons, C. A., & Shen, J. (2017). Global relation between financial distress and equity returns. *The Review of Financial Studies, 31*(1), 239-277.

García-Meca, E., López-Iturriaga, F., & Tejerina-Gaite, F. (2017). Institutional investors on boards: Does their behavior influence corporate finance*? Journal of Business Ethics, 146*(2), 365-382.

Geng, R., Bose, I., & Chen, X. (2015). Prediction of financial distress: An empirical study of listed Chinese companies using data mining. *European Journal of Operational Research, 241*(1), 236-247.

Glover, B. (2016). The expected cost of default. *Journal of Financial Economics, 119*(2), 284-299.

Handriani, E., & Robiyanto, R. (2018). Investment opportunity and industrial growth in Indonesia. *International Journal of Business & Society, 19*(2).

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305-360.

Kalyani, S., Mathur, N., & Gupta, P. (2019). Does Corporate Governance Affect the Financial Performance and Quality of Financial Reporting of Companies? A Study on Selected Indian Companies. In Business Governance and Society (pp. 105-125). Palgrave Macmillan, Cham.

Koh, S., Durand, R. B., Dai, L., & Chang, M. (2015). Financial distress: Lifecycle and corporate restructuring. *Journal of Corporate Finance, 33*, 19-33.

Kristanti, F. T., Rahayu, S., & Huda, A. N. (2016). The determinant of financial distress on Indonesian family firm. *Procedia-Social and Behavioral Sciences, 219,* 440-447.

Kuncoro, S., & Agustina, L. (2017). Factors to Predict the Financial Distress Condition of the Banking Listed in The Indonesia Stock Exchange. *Accounting Analysis Journal, 6*(1), 39-47.

Charalambakis, E. C., & Garrett, I. (2019). On corporate financial distress prediction: What can we learn from private firms in a developing economy? Evidence from Greece. *Review of Quantitative Finance and Accounting, 52*(2), 467-491.

Männasoo, K., Maripuu, P., & Hazak, A. (2018). Investments, credit, and corporate financial distress: Evidence from central and Eastern Europe. *Emerging Markets Finance and Trade, 54*(3), 677-689.

Manzaneque, M., Merino, E., & Priego, A. M. (2016). The role of institutional shareholders as owners and directors and the financial distress likelihood. Evidence from a concentrated ownership context. *European Management Journal, 34*(4), 439-451.

Megginson, W. L., Meles, A., Sampagnaro, G., & Verdoliva, V. (2019). Financial distress risk in initial public offerings: how much do venture capitalists matter?. *Journal of Corporate Finance, 59*, 10-30.

Paramita, A., & Arifin, Z. (2017). The influence of corporate governance toward firm's value and probability of financial distress: A case in Indonesia Stock Exchange. *Journal of Economic Science, 1*(1).

Powell, G. E. (2018). The financial determinants of corporate cash holdings for Indonesian firms. *Academy of Accounting & Financial Studies Journal, 22*(1).

Parkinson, M. M. (2016). Corporate governance during financial distress–an empirical analysis. *International Journal of Law and Management, 58*(5), 486-506.

Saidat, Z., Silva, M., & Seaman, C. (2019). The relationship between corporate governance and financial performance: Evidence from Jordanian family and nonfamily firms. *Journal of Family Business Management, 9*(1), 54-78.

Shahwan, T. M. (2015). The effects of corporate governance on financial performance and financial distress: evidence from Egypt. *Corporate Governance, 15*(5), 641-662.

Silvia, D., & Sari, M. S. (2018). Effect of financial indicators and good corporate governance structure on stock price with financial distress as An intervening variable. International conference on Information Technology and Business (ICITB) (pp. 88-97).

1844

Vieira, E. S. (2018). Board of directors characteristics and performance in family firms and under the crisis. *Corporate Governance: The International Journal of Business in Society, 18*(1), 119-142.

Wanke, P., Barros, C. P., & Faria, J. R. (2015). Financial distress drivers in Brazilian banks: A dynamic slacks approach. *European Journal of Operational Research, 240*(1), 258-268.

Wei, C. C., Fang, W. X., Li, G. H., Kao, Y. W., Tsai, M. L., & Yang, C. Y. (2016). The relationship between ownership structure and the probability of a financial distress warning happening: Evidence of listed common stock companies in Taiwan. *Applied Economics and Finance, 4*(1), 34-42.

Witiastuti, R. S., & Suryandari, D. (2016). The influence of good corporate governance mechanism on the possibility of financial distress. *Review of Integrative Business and Economics Research, 5*(1), 118.