

THE EFFECT OF LEVERAGE, OPERATING CASH FLOW, AND GOOD CORPORATE GOVERNANCE ON FINANCIAL DISTRESS IN INFRASTRUCTURES COMPANIES LISTED ON THE INDONESIA STOCK EXCHANGE (IDX) FOR THE PERIOD 2020–2024

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Abstract

This study is a quantitative study using an associative-causal approach. The data used are secondary data from companies' annual financial reports obtained via www.idx.co.id, with the population consisting of infrastructure companies listed on the Indonesia Stock Exchange (IDX) for the 2020–2024 period. The sampling technique employed purposive sampling, resulting in a sample of 52 companies with 260 data observations. The analysis method used was panel data regression with the assistance of EViews 14 software. The results of the panel data regression test indicate that, simultaneously, leverage, operating cash flow, independent commissioners, the audit committee, and the board of directors have a significant effect on financial distress. Partially, operating cash flow has a significant positive effect on financial distress, while leverage, independent commissioners, the audit committee, and the board of directors have no effect on financial distress.

Keywords: Leverage, operating cash flow, independent commissioners, audit committee, board of directors, financial distress.

A. INTRODUCTION

In recent years, the global economy has faced significant pressure due to high economic uncertainty. This situation has been triggered by the COVID-19 pandemic, geopolitical dynamics such as the Russia–Ukraine conflict and tensions in the Middle East, surging inflation, and aggressive hikes in benchmark interest rates by the world's major central banks (Ainur, 2024). This uncertainty has led to a slowdown in economic growth, both globally and domestically, and has ultimately increased pressure on the financial stability of companies across various sectors (Badan Pusat Statistik, 2025).

One of the sectors most vulnerable to such economic pressures is the infrastructure sector. This sector is characterized by being capital-intensive, having a long payback period, and incurring high operating costs, making companies heavily reliant on external financing through debt (Naipospos et al., 2026; Pratama & Masdupi, 2026). This high dependence on debt makes infrastructure companies more vulnerable to financial distress when economic conditions deteriorate, as macroeconomic fluctuations directly impact a company's ability to meet its financial obligations (Hidayah & Aisyah, 2025; Sholikha et al., 2024). Financial distress itself is a stage of deterioration in a company's financial condition prior to bankruptcy, characterized by an inability of cash flow to meet maturing debt obligations (Platt & Platt, 2002; Whitaker, 1999).

This phenomenon is clearly reflected in several infrastructure companies listed in Indonesia. As of 2025, PT PP Properti Tbk (PPRO) failed to pay interest on two maturing bonds, resulting in a trading suspension on its shares; PT Waskita Karya (Persero) Tbk (WSKT) defaulted on bonds totaling Rp1.36 trillion and is undergoing a debt restructuring process, while PT Wijaya Karya Tbk (WIKA) also failed to repay its bonds and had its stock trading suspended by the Indonesia Stock Exchange (Nextpolicy, 2025). These conditions have also impacted the issuers' profitability, with the total losses of the six infrastructure companies in 2025 reaching approximately Rp27.21 trillion, with the largest losses incurred by WIKA, PTPP, ADHI, and WSKT (Kabar Bursa, 2026). This series of events indicates a high risk of financial distress in the infrastructure sector and underscores the importance of further research into the factors influencing it.

Financial distress can be influenced by various factors, both financial and related to corporate governance. One financial factor is leverage, which reflects the level of debt used in a company's funding structure; the higher the leverage, the greater the liabilities and financial risks the company must bear (Robani & Lating, 2025). Another factor is operating cash flow, which illustrates a company's ability to generate cash from operating activities to finance its business operations and meet its obligations (Audina et al., 2022). In addition to financial factors, good corporate governance mechanisms also play a role in minimizing the risk of financial distress through the presence of independent commissioners, an audit committee, and

a board of directors. Independent commissioners serve to objectively oversee management, while the audit committee assists the board of commissioners in overseeing financial reporting and internal controls (Komite Nasional Kebijakan Governansi, 2021). Furthermore, the board of directors plays a role in strategic decision-making and the management of company operations; thus, the quality of the decisions made can influence financial stability and the risk of financial distress (Fitri & Taswan, 2023). Consequently, leverage, operating cash flow, independent commissioners, audit committees, and the board of directors are hypothesized to be associated with a company's financial distress.

Based on this discussion, this study aims to analyze the effects of leverage, operating cash flow, independent commissioners, audit committees, and boards of directors on financial distress among infrastructure companies listed on the Indonesia Stock Exchange during the 2020–2024 period, both partially and simultaneously, on financial distress among infrastructure companies listed on the Indonesia Stock Exchange during the 2020–2024 period, both partially and simultaneously.

THEORETICAL REVIEW AND RESEARCH HYPOTHESIS

Agency Theory

Agency Theory explains the conflict of interest between shareholders (principals) and management (agents) resulting from information asymmetry (Jensen & Meckling, 1976). This situation has the potential to trigger opportunistic behavior by management and increase the risk of financial distress if not effectively monitored through good corporate governance mechanisms such as independent commissioners, audit committees, and the board of directors (Sholikha et al., 2024).

Signaling Theory

Signaling Theory explains that management provides signals in the form of financial information to investors and creditors to reduce information asymmetry (Ross, 1997; Spence, 1973). Good financial conditions serve as a positive signal, while poor conditions serve as a negative signal that influences investment and credit decisions (Mustamin & Ida, 2025). This theory underlies the influence of leverage and operating cash flow, whereas agency theory underlies the influence of good corporate governance mechanisms on financial distress.

Financial Distress

Financial distress refers to the stage of deterioration in a company's financial condition prior to bankruptcy, characterized by the company's inability to meet its financial obligations on time (Platt & Platt, 2002). This condition can be triggered by internal factors such as high debt and weak governance, as well as external factors such as economic instability. In this study, financial distress is measured using the 1995 Modified Altman Z-Score, which was specifically designed for non-manufacturing companies in developing countries.

Leverage

Leverage describes the extent to which a company relies on debt financing in its capital structure; the higher this ratio, the greater the financial risk borne by the company (Cahyana et al., 2025; Manurung et al., 2025). This variable is measured using the Debt to Equity Ratio (DER), which is the ratio of total debt to total equity.

Operating Cash Flow

Operating cash flow reflects a company's ability to generate cash from its primary operating activities independently, without relying on financing or investment activities (Alverina & Sjarief, 2025; Helly & Nurani, 2026). This variable is measured using the ratio of operating cash flow to current liabilities.

Independent Commissioner

An independent commissioner is a member of the board of commissioners from outside the company who has no business or family ties to management, and whose role is to ensure that oversight is conducted objectively in accordance with POJK No. 33/POJK.04/2014, which mandates that at least 30% of the total board of commissioners be independent commissioners (Asi, 2025). This variable is measured by the proportion of independent commissioners relative to the total board of commissioners.

Audit Committee

The audit committee is a body under the board of commissioners that assists in oversight functions, particularly regarding the quality of financial reporting, as stipulated in POJK No. 55/POJK.04/2015, which requires a minimum of three members (Damayanti & Setyawan, 2025). This variable is measured based on the number of audit committee members.

Board of Directors

The board of directors is the corporate body that bears full responsibility for the management and representation of the company in accordance with Law No. 40 of 2007 on Limited Liability Companies, and plays a role in determining strategic policies and managing resources (Febriyanti & Khalifaturofi'ah, 2023). This variable is measured based on the number of board members.

B. METHOD

This study employs a quantitative method with an associative-causal approach to examine the effects of leverage, operating cash flow, independent commissioners, audit committees, and boards of directors on financial distress. The study population consists of all 70 infrastructure sector companies listed on the Indonesia Stock Exchange (IDX) for the 2020–2024 period, with the sample determined through purposive sampling based on the following criteria: 1) Infrastructure companies listed on the Indonesia Stock Exchange consecutively during the 2020–2024 period; 2) Companies that published annual financial reports consecutively during the 2020–2024 period. This resulted in a sample of 52 companies with a total of 260 observations. The data analysis techniques used include descriptive statistical analysis and panel data regression, processed using EViews 14 software.

C. RESULTS AND DISCUSSIONS

Partial Test (t-Test)

A partial test (t-test) is used to test the effect of each independent variable on the dependent variable. The results of the t-test in this study are as follows:

Table 1. t-test Result				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.64947	10.90387	1.068379	0.2904
DER	0.163341	0.158890	1.028014	0.3088
OCF	10.18346	1.839382	5.536352	0.0000
KI	-14.41371	12.33432	-1.168586	0.2480
KA	-0.128681	1.154682	-0.111443	0.9117
DD	-1.410751	1.564384	-0.901793	0.3714

Source: EViews 14 data processing results, 2026

Based on the t-test table above, the t-table value is determined using $\alpha = 0.05$ and degrees of freedom (n-k) of $260 - 5 = 255$, resulting in a t-table value of 1.969. For the leverage variable (proxied by the debt to equity ratio/DER), the calculated t-value (t-count) was 1.028014, meaning $t\text{-count} < t\text{-table}$ ($1.028014 < 1.969$), and the significance value was 0.3088 (> 0.05). Thus, it can be concluded that leverage has no effect on financial distress; therefore, **H1 is rejected**.

For the operating cash flow variable, the calculated t-value was 5.536352, meaning $t\text{-count} > t\text{-table}$ ($5.536352 > 1.969$), and the significance value was 0.0000 (< 0.05). Thus, it can be concluded that operating cash flow has a significant effect on financial distress; therefore, **H2 is accepted**. For the independent commissioner variable, the calculated t-value was -1.168586, meaning $t\text{-count} < t\text{-table}$ ($-1.168586 < 1.969$), and the significance value was 0.2480 (> 0.05). Thus, it can be concluded that independent commissioners have no effect on financial distress; therefore, **H3 is rejected**.

For the audit committee variable, the calculated t-value was -0.111443, meaning $t\text{-count} < t\text{-table}$ ($-0.111443 < 1.969$), and the significance value was 0.91117 (> 0.05). Thus, it can be concluded that the audit committee has no effect on financial distress; therefore, **H4 is rejected**. For the board of directors variable, the calculated t-value was -0.901793, meaning $t\text{-count} < t\text{-table}$ ($-0.901793 < 1.969$), and the significance value was 0.3714 (> 0.05). Thus, it can be concluded that the board of directors has no effect on financial distress; therefore, **H5 is rejected**.

Simultaneous Test (F-test)

The simultaneous test (F-test) is used to examine the collective influence of the independent variables on the dependent variable. The results of the F-test in this study are as follow:

Table 2. F-test Result

R-squared	0.714517	Mean dependent var	1.179201
Adjusted R-squared	0.708897	S.D. dependent var	22.44987
S.E. of regression	12.11259	Sum squared resid	37265.58
F-statistic	127.1439	Durbin-Watson stat	1.804410
Prob(F-statistic)	0.000000		

Source: EViews 14 data processing results, 2026

Based on the F-test results in the table above, the calculated F-value is 127.1439, meaning $F\text{-statistic} > F\text{-table}$ ($127.1439 > 1.969$), and the significance value is $0.000000 < 0.05$. Thus, it can be concluded that the independent variables, comprising leverage, operating cash flow, independent commissioners, audit committee, and board of directors, have a significant simultaneous effect on financial distress; therefore, **H6 is accepted**.

Coefficient of Determination (R^2)

The coefficient of determination (R^2) is used to determine the percentage or contribution of independent variables in explaining the variation in the dependent variable. The results of the coefficient of determination (R^2) test in this study are as follows:

Table 3. Results of the Coefficient of Determination (R^2) Test

R-squared	0.714517	Mean dependent var	1.179201
Adjusted R-squared	0.708897	S.D. dependent var	22.44987
S.E. of regression	12.11259	Sum squared resid	37265.58
F-statistic	127.1439	Durbin-Watson stat	1.804410
Prob(F-statistic)	0.000000		

Source: EViews 14 data processing results, 2026

Based on the results of the coefficient of determination test above, the adjusted R-squared value of 0.708362 indicates that 70.84% of the variation in the dependent variable can be explained by the independent variables in the model, while the remaining 29.16% is explained by other variables outside the model.

DISCUSSIONS

The Effect of Leverage on Financial Distress

The test results show that leverage does not have a significant effect on financial distress ($t = 1.028$; $\text{sig.} = 0.3088 > 0.05$), so H1 is rejected. This finding does not fully support Spence's (1973) signaling theory, which states that the level of debt should serve as a signal of risk to investors and creditors. The lack of a significant effect of leverage is likely due to the capital-intensive nature of the infrastructure sector and its heavy reliance on long-term debt financing to fund projects; consequently, a high debt to equity (DER) ratio is a normal condition rather than a direct indicator of financial distress (Manurung et al., 2025; Robani & Lating, 2025). Furthermore, funding support from the government and financial institutions for strategic infrastructure projects during the 2020–2024 period helped maintain companies' access to

financing even amid global economic pressures. These results are consistent with the findings of Dewi & Edastami (2025), Nurul & Mahroji (2025), Sholikha et al. (2024), dan Silalahi et al. (2025), who also found that leverage has no effect on financial distress.

The Effect of Operating Cash Flow on Financial Distress

Operating cash flow was found to have a positive and significant effect on financial distress ($t = 5.536$; $\text{sig.} = 0.000 < 0.05$), thus H2 is accepted, making it the only partially significant variable in this study. This finding is consistent with Spence's (1973) signaling theory, in which strong operating cash flow serves as a positive signal (good news) to investors and creditors regarding a company's ability to generate cash independently (Raihan & Imronudin, 2025). For infrastructure companies that require large initial investments with long payback periods, the ability to maintain stable operating cash flow is a key determinant of business sustainability and the fulfillment of short-term obligations, thereby shielding the company from the risk of financial distress. These results are consistent with Alverina & Sjarief (2025), Dewi & Edastami (2025), dan Putri et al. (2026), who found that operating cash flow has a significant effect on financial distress.

The Effect of Independent Directors on Financial Distress

Independent directors do not have a significant effect on financial distress ($t = -1.169$; $\text{sig.} = 0.2480 > 0.05$), so H3 is rejected. These results do not support Jensen & Meckling's (1976) agency theory, which views independent directors as a monitoring mechanism to reduce conflicts of interest between management and shareholders (Faddilah et al., 2025). The lack of a significant effect indicates that the presence of independent commissioners in infrastructure companies tends to be a formality for regulatory compliance rather than a substantive oversight mechanism, especially given that the ownership structure in some companies is still dominated by the state or controlling shareholders, so that strategic decisions are more influenced by government policies and macroeconomic conditions than by the oversight of the independent board of commissioners. These findings are consistent with those of Faddilah et al. (2025), Nawanto (2025), Nurul & Mahroji (2025) dan Puspita & Kusuma (2025), who also found that independent directors have no effect on financial distress.

The Effect of Audit Committees on Financial Distress

Audit committees do not have a significant effect on financial distress ($t = -0.111$; $\text{sig.} = 0.9117 > 0.05$), so H4 is rejected, and this does not fully support Jensen & Meckling's (1976) agency theory, which views the audit committee as a mechanism for controlling the quality of financial statements (Sunardi & Astrina, 2025). Measurements based solely on the number of members are considered insufficient to capture the effectiveness of oversight, which is actually more determined by the competence, independence, and meeting frequency of its members. The small variation in the number of members across companies, the majority of which adhere to the minimum requirement of three members, also limits the explanatory power of this variable regarding financial distress, which in the infrastructure sector is more influenced by structural factors such as capital requirements and government policies. These results are consistent with those of Nawanto (2025), Nurul & Mahroji (2025), dan Puspita & Kusuma (2025), who found that audit committees have no effect on financial distress.

The Effect of the Board of Directors on Financial Distress

The board of directors does not have a significant effect on financial distress ($t = -0.902$; $\text{sig.} = 0.3714 > 0.05$), so H5 is rejected. These results do not fully support Jensen & Meckling's (1976) agency theory, as measurements based on board size do not reflect the actual effectiveness of management, which depends on competence, experience, and the quality of coordination among members (Ramadhan & Muid, 2025). In infrastructure companies with large-scale projects and high operational risks, success in avoiding financial distress is determined more by management's ability to control project costs and operating cash flow than by the number of board members. These findings are consistent with those of Nawanto (2025), Suharni & Rochman (2022), dan Wati & Januarti (2025), who also found that the board of directors has no effect on financial distress.

D. CONCLUSIONS

Based on the results of the analysis and discussion, the conclusion of this study is that leverage, operating cash flow, and good corporate governance simultaneously have a significant effect on financial distress. Partially, operating cash flow has a significant positive effect on financial distress. Meanwhile, leverage, independent commissioners, the audit committee, and

the board of directors have no effect on financial distress. This study has several limitations, including the use of only infrastructure sector companies as the sample; the use of corporate governance indicators that are still quantitative in nature (number or proportion of members), which do not provide an in-depth description of the quality of oversight; and the measurement of financial distress using only the Altman Z-Score model.

E. SUGGESTIONS

Future research is recommended to enrich the measurement of good corporate governance variables with indicators that better reflect the quality of oversight, such as the frequency of board meetings, members' educational backgrounds and experience, stricter independence standards, and expertise in accounting and finance, in order to capture the effectiveness of governance mechanisms more comprehensively than simply the number or proportion of members. In addition, future research could also include other variables beyond this model, such as profitability, liquidity, firm size, sales growth, and macroeconomic conditions, given that the five variables in this study can only explain part of the variation in financial distress, while the remainder is influenced by other factors. Expanding the scope of the research to other sectors, as well as extending the observation period to include more stable economic conditions, is also recommended to obtain a more general picture that can be compared across sectors and periods.

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