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Do Global Uncertainty Indices Predict Corporate Bankruptcy Risk? Evidence from Indonesian Listed Firms

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Abstract

Background: Increasing global shocks threaten corporate financial stability, particularly in emerging markets. This study measures uncertainty using the World Uncertainty Index (WUI), World Pandemic Uncertainty Index (WPUI), Climate Policy Uncertainty (CPU), and Economic Policy Uncertainty (EPU) across current, lag-1, and lag-2 periods. Bankruptcy risk is proxied by the Altman Z-Score and Distance-to-Default (DTD).

Objective: This study examines the effect of global uncertainty on the bankruptcy risk of companies listed on the Indonesia Stock Exchange.

Methods: Secondary data from 2000–2024 were analyzed using fixed-effects panel regression in STATA 17. Purposive sampling produced 9,377 firm-year observations for the Z-Score model and 9,156 for the DTD model.

Results: EPU and CPU significantly reduced Z-Scores across all time specifications, indicating increased financial distress through an aggravation effect. WPUI had a significant negative effect at lag 2, while WUI was insignificant. In the DTD model, only current-period EPU had a significant negative effect. State-owned enterprises and the Commodity and Cyclical sectors were most vulnerable, whereas the Defensive sector was most resilient.

Conclusion: Global uncertainty affects bankruptcy risk heterogeneously. The findings support sector-specific risk mitigation, strategic portfolio allocation, and stronger corporate financial resilience.

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INTRODUCTION

Globalization has created a paradox for the corporate world, serving as a double-edged sword that offers both significant opportunities and great challenges. On the one hand, globalization opened unlimited access to a wider market, allowing companies to reach new customers and expand their existence internationally. It also facilitates access to global capital markets and advanced technologies that can increase productivity and innovation. Further, companies can optimize their resources by utilizing more cost-advantaged locations and accessing a skilled workforce. However, on the other hand, openness can lead to uncertainty. Globalization magnifies uncertainty, especially caused by policy and economic fluctuations (Constantinescu et al., 2020; Kang et al., 2020; Zhang et al., 2024).

Global uncertainty is a condition that significantly affects various aspects, especially the economy and government policies. In the economic sphere, global uncertainty has an impact on the financial decisions of household, business and government entities leading to a decline in consumption, investment, and increased unemployment (Al- Thaqeb & Algharabali, 2019). For developing countries such as Indonesia, global uncertainty has an impact on macroeconomic stability, industrial production, inflation, and interest rates (Muflikhah et al., 2025). In terms of

policy and governance, uncertainty weakens Gross Domestic Product (GDP) growth, investment, and trade openness (Bellos et al., 2025).

The importance of issues related to global uncertainty has prompted researchers to develop various concepts and quantitative measures, known as the uncertainty index. These indices are designed to capture the various sources of uncertainty and their impact on various aspects. Some of the indices that are often used in research are the World Uncertainty Index (WUI) (Ahir et al., 2018), Economic Policy Uncertainty (EPU) Baker et al. (2016), World Pandemic Uncertainty Index (WPUI), and Climate Policy Uncertainty (CPU) (Gavriilidis, 2021). These indices help track uncertainty and provide wider geographic coverage. Each index captures a distinct dimension of uncertainty with different transmission mechanisms to corporate risk: WUI reflects broad geopolitical and economic sentiment that may affect firms indirectly through investor confidence; EPU captures policy-related uncertainty that directly influences corporate investment decisions, financing costs, and regulatory compliance; WPUI measures pandemic-specific uncertainty that disrupts supply chains, labor markets, and consumer demand; and CPU reflects climate regulatory uncertainty that affects asset valuations, compliance costs, and long-term strategic planning, particularly for carbon-intensive industries.

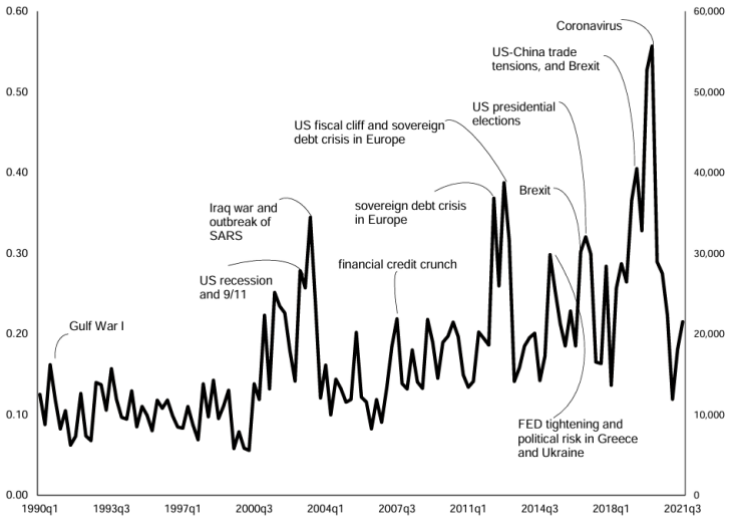

Figure 1. World Uncertainty Index and World Events
Sources: Ahir et al., (2018)

Global uncertainty experiences significant fluctuations and tends to increase over time. This uncertainty is closely related to shocks due to major events in the geopolitical, economic, and health fields. In the early 1990s, uncertainty was relatively low despite events such as Gulf War I. The first sharp increase occurred in the early 2000s, triggered by the U.S. recession, the 9/11 attacks, the Iraq War, and the SARS outbreak (Ahir et al., 2018). After that, the global financial crisis in 2008-2009, which included the financial credit crunch and the sovereign debt crisis in Europe, again pushed the index to a high level (Ahir et al., 2018). The next peaks of uncertainty were caused by a series of events such as the United States (US) presidential election, US-China trade tensions, and the Brexit process. However, the highest spike in history recorded on this chart occurred in early 2020, caused by the Coronavirus pandemic.

In the context of a corporation, global uncertainty can drive changes in corporate behavior. In conditions of uncertainty, management tends to avoid risk (risk aversion), which can cause the company to lose competitiveness. In addition, uncertainties can encourage an increase in risk premiums that make the cost of debt loans more expensive. This condition will have an impact on several important aspects of the company such as cash holding Duong et al. (2020), company investment Z. Feng & Lin. (2023), Khan et al. (2020), Roring (2022), firm performance X. Feng et al. (2023), Iqbal et al. (2020), T. H. P. Nguyen et al. (2025), firm value, risk, and structure Athari (2022), Jory et al. (2020), Luo et al. (2017); Zhu et al. (2020), as well as liquidity, credit risk, and debt (Anis & Hamdi, 2022; Berger et al., 2017; Gao & Stuart Osaka, 2023; Johnson, 2017; Liu & Zhong, 2017). These impacts can encourage an increased risk of bankruptcy and default (Liu et al., 2023; D. N. Nguyen et al., 2022; Wang & Huang, 2025).

The most dangerous impact of this uncertainty is the risk of corporate bankruptcy. This risk does not appear suddenly, but rather is an accumulation of financial and operational pressures that management fails to mitigate. As global uncertainty increases, cash flow volatility and external shocks erode corporate liquidity, while rising risk premiums make it difficult to access external funding and increase the burden of debt costs. This condition can be exacerbated by management's defensive behavior that delays strategic investments, thereby eroding long-term competitiveness and profitability. As a result, companies are trapped in financial distress that can lead to inability to meet short-term obligations and lead to business failure or bankruptcy.

Indonesia, as a developing country, has companies that are vulnerable to the impact of global uncertainty. Global economic policy uncertainty has proven to have a correlation and negative impact on Indonesia's stock market yields, especially during periods of turmoil in developed countries (Hashmi et al., 2021; Lestari et al., 2023; Muflikhah et al., 2025). The US-China trade war is a clear example of depressing the performance of the domestic stock market (Wijaya et al., 2022). Other large-scale shocks such as the COVID-19 pandemic which are included in the state of uncertainty have an impact on the company's financial ratios Alghifari et al (2022); Dwiarti et al. (2021), even leading to financial distress (Dewi et al., 2023; Purwanto et al., 2023).

In general, bankruptcy risk can be distinguished through two main approaches. First, an event-based approach that defines bankruptcy as a formal legal condition such as being placed under a curator or reorganization or a broader financial distress, such as failure to pay fixed obligations. This first approach can be measured using Altman z-score (Altman, 1968, 1984). Second, a market-based approach that does not define bankruptcy as an event, but rather measures it as the risk of future default through metrics such as Distance-to-Default (DTD). This approach conceptualizes that a default occurs when the market value of a company's assets falls below the value of its debt.

Global uncertainty is measured using several main indices, namely the World Uncertainty Index (WUI) Ahir et al. (2018), Economic Policy Uncertainty (EPU) Baker et al. (2016), World Pandemic Uncertainty Index (WPUI), and Climate Policy Uncertainty (CPU) (Gavriilidis, 2021). WUI is measured from a single source, namely country reports from the Economist Intelligence Unit (EIU), which specifically discuss the economic and political development of a country. On the other hand, the EPU index is measured from a collection of articles in various leading newspapers of a country that contains three keywords related to "economy", "uncertainty", and terms related to "policy" such as "congress", "central bank", or "regulation". The WPUI is an uncertainty index measured by counting the number of times the word "uncertainty" is mentioned adjacent to a pandemic-related word in a country report from the EIU. The CPU is measured based on headlines in the U.S. related to environmental policy issues such as the latest rules related to emissions, presidential statements, and more. Some of these indices can provide an overview of the dynamics of global events and domestic conditions in certain countries.

Some researchers who measured the relationship between global uncertainty and bankruptcy risk used a variety of variables as controls and mediations. In general, these variables include state company ownership, financial ratios, and macroeconomic factors. In terms of corporate ownership by the state, some researchers distinguish the impact of uncertainty based on state-owned enterprises (SOEs) and private companies. To control the internal conditions of a company, a series of common financial ratios are used, such as profitability, (D. N. Nguyen et al. 2022; Wang & Huang, 2025), leverage (Wang 2025), liquidity (Haidar et al., 2023; Liu et al., 2023), growth opportunities (Liu et al., 2025), and company size (Haidar et al., 2023; D. N. Nguyen et al., 2022). At the macroeconomic level, the model used is equipped with the Gross Domestic Product (GDP) growth variable.

A critical comparison of prior studies reveals important methodological and contextual differences that shape divergent findings. Wang (2025) studies conducted in China benefit from larger sample sizes and more developed ESG frameworks, whereas D. N. Nguyen et al. (2022) research on broader emerging market aggregates may obscure country-specific dynamics. The variation in proxy measures (default probability vs. Z-Score vs. DTD), sample periods, and control variable specifications further contributes to inconsistent results across studies. Various studies consistently show that uncertainty, significantly increases the risk of bankruptcy through financial distress and the risk of default (Haidar et al., 2023; Wang & Huang, 2025).

However, there is an inconsistency in the influence on the moderation role of company ownership. On the one hand, Liu et al. (2023) found that the status of SOEs strengthens the negative impact of CPUs on the risk of default. Meanwhile, the results of the study contradict the findings from Wang & Huang (2025) and Chen et al., (2025) which state that private companies are more vulnerable to uncertainty than SOEs. The difference in the results of this study opens an opportunity to measure the overall uncertainty index to the risk of bankruptcy.

Furthermore, most existing empirical research focuses on the context of China or the aggregate of developing countries in general. Research within the scope of Indonesia only focuses on corporate behavior and economic aspects such as research (Fatah, 2025; Marcella Roring & Rita Juliana, 2022). This opens a significant novelty to test the relationship between various uncertainty indices and the risk of bankruptcy through financial distress and the specific default risk in companies in Indonesia.

This research was conducted to develop a model and re-examine the influence of global uncertainty on bankruptcy risk. Previous research has relatively only used one uncertainty index, so the model does not comprehensively measure a range of possibilities. In addition, related research focuses only on the aspect of default as a modern approach. To measure more comprehensively, the risk of corporate bankruptcy can use financial distress as a contemporary approach and the risk of default as a modern approach. With these problems, the author is encouraged to develop a model and re-examine the influence of global uncertainty with the WUI, EPU, WPUI, and CPU indices on the risk of bankruptcy through financial distress and the risk of default (DTD). From a theoretical standpoint, this study contributes to the corporate bankruptcy literature by demonstrating that the transmission of global uncertainty to corporate financial distress operates through heterogeneous channels that depend on the type of uncertainty, the measurement approach (accounting-based vs. market-based), ownership structure, and sectoral characteristics.

This extends the application of Agency Theory and Signal Theory to the uncertainty-bankruptcy nexus in emerging markets. Additionally, the comprehensive sectoral heterogeneity analysis represents a methodological novelty. Unlike previous studies that tended to aggregate all companies, this study grouped 11 IDX sectors into 4 main categories (Financial, Cyclical, Commodities, and Defensive) to look at more specific risk transmission. In addition, the use of time-lag (t, t-1, t-2) was applied to capture the delayed effect of global uncertainty on financial stability in Indonesia. This research is titled "Do Global Uncertainty Indices Predict Corporate Bankruptcy Risk? Evidence from Indonesian Listed Firms".

This study focuses on determining the influence of global uncertainty with the WUI, EPU, WPUI, and CPU indices on the risk of bankruptcy through financial distress and default risk (DTD). The dependent variables used are financial distress and the risk of default. The independent variables used are the WUI, WPUI, CPU and EPU indexes. The research was conducted on companies listed on the IDX for the period 2000-2024. The analysis was carried out by paying attention to the effect of heterogeneity based on: (1) Ownership (SOEs vs Private) and (2) Industrial Sector (11 sectors grouped into 4 categories).

The control variables used include leverage, market capitalization, firm size, ROA, ROE, Current Ratio, and GDP growth. The purpose of this study is to analyze the influence of various global uncertainty indices (WUI, EPU, WPUI, CPU) with various time periods (lag) on the risk of corporate bankruptcy in Indonesia. Evaluating the difference in bankruptcy risk response to global uncertainty based on the company's ownership status (SOEs vs Private). Dissecting the heterogeneity of the impact of global uncertainty on various industrial sector groups on the Indonesia Stock Exchange.

METHOD

This study used a quantitative approach with a causal research design to analyze the influence of global uncertainty on the risk of corporate bankruptcy. The object of the study comprised all public companies listed on the Indonesia Stock Exchange (IDX) during the period 2000–2024. All sectors were included to provide a comprehensive picture of the vulnerability of Indonesian companies to global uncertainty dynamics.

The research population included all companies listed on the IDX during the observation period. The sampling technique used was saturated sampling, in which all population members

with available data were included in the research sample. Based on the data collection process, the study obtained a total of 9,377 annual firm observations (firm-years) for the Z-Score model and 9,156 for the DTD model.

The dependent variable was corporate bankruptcy risk, which was measured using two proxies: financial distress and default risk. Financial distress was measured using the Altman Z-Score Altman (1968), calculated as:

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$$

where X_1 = Working Capital/Total Assets, X_2 = Retained Earnings/Total Assets, X_3 = EBIT/Total Assets, X_4 = Market Value of Equity/Book Value of Total Debt, and X_5 = Sales/Total Assets. A lower Z-Score indicated a higher risk of financial distress. Default risk was measured using Distance-to-Default (DTD) based on the Merton (1974) structural model, which conceptualizes equity as a call option on the firm's assets. DTD was calculated as:

$$DTD = [\ln(V/D) + (\mu - 0.5\sigma^2)T] / (\sigma\sqrt{T})$$

where V was the market value of assets, D was the face value of debt, μ was the expected return on assets, σ was asset volatility, and T was the time horizon. A lower DTD indicated a higher probability of default. The use of these two proxies aimed to obtain more robust results, as the Z-Score represented accounting-based financial conditions, whereas DTD reflected market-based default risk.

The independent variable was global uncertainty, which was measured using four main indices: the World Uncertainty Index (WUI), Economic Policy Uncertainty (EPU), World Pandemic Uncertainty Index (WPUI), and Climate Policy Uncertainty (CPU). These four indices were used to capture various dimensions of global uncertainty, ranging from economic and political uncertainty to economic policy, pandemics, and climate policy uncertainty. In addition, the study included control variables consisting of leverage, market capitalization, firm size, return on assets (ROA), return on equity (ROE), current ratio, and Gross Domestic Product (GDP) growth.

Data analysis was conducted using panel data regression because the research data had both company and time dimensions. The regression models were used to test the effects of the global uncertainty indices on the two measures of bankruptcy risk, namely Z-Score and DTD. In general, the research models included a global uncertainty index as the independent variable, control variables as controlling factors, and firm-specific effects to capture differences in characteristics across firms.

Before hypothesis testing, assumption tests relevant to panel data were conducted, including multicollinearity and heteroscedasticity tests. Multicollinearity was assessed using the Variance Inflation Factor (VIF), with all values confirmed to be below the threshold of 10, indicating no severe multicollinearity concerns. Heteroscedasticity was tested using the Breusch-Pagan method. Because the four global uncertainty indices (WUI, EPU, WPUI, and CPU) could be intercorrelated, each index was entered into a separate regression model rather than combined in a single specification. This approach avoided multicollinearity among the independent variables of interest while allowing for comparative analysis across different dimensions of uncertainty.

Furthermore, the selection of the best regression model was conducted using the Chow test, Breusch-Pagan Lagrange Multiplier (LM) test, and Hausman test to determine whether the most appropriate model was the Common Effect, Fixed Effects, or Random Effects model. The Fixed Effects model was ultimately selected based on the Hausman test results. This model was theoretically appropriate for the study because it controlled for time-invariant unobserved heterogeneity across firms, such as management quality, corporate culture, and industry niche, which could be correlated with both exposure to uncertainty and bankruptcy risk. Although dynamic panel approaches such as the Generalized Method of Moments (GMM) could address potential endogeneity concerns, the relatively long panel (T = 25) and the exogenous nature of the global uncertainty indices, which were determined at the country or global level rather than by individual firms, reduced the necessity for instrumental variable approaches. To address heteroscedasticity, the model employed robust standard errors.

Hypothesis testing was conducted through coefficient of determination analysis, simultaneous testing, and partial testing. The coefficient of determination was used to assess the model's ability to explain variations in corporate bankruptcy risk. Simultaneous tests were used

to examine the joint effect of the independent variables on the dependent variables, while partial tests were used to determine the effect of each independent variable on corporate bankruptcy risk. The significance level was set at 5%.

The study also conducted a heterogeneity analysis to examine whether the sensitivity of bankruptcy risk to global uncertainty was uniform across firms or varied among different groups. The sample was categorized based on industry sector (finance, cyclical, commodity, and other sectors) and ownership type (state-owned enterprises and private companies).

RESULTS AND DISCUSSION

Simultaneous Test (F Test)

Simultaneous tests (F Tests) are carried out to test whether independent variables together affect dependent variables. If the probability value of the F-Test is less than α (0.05), then H_0 is rejected and it can be concluded that all independent variables simultaneously have a significant effect on the dependent variables. The results of the F Test for all research models are presented in the following table.

Table 1
Simultaneous Test Results (F Test)

Models	Variable Y	Variable X	Specification	Prob > F	Conclusion
1a	Z-Score	WUI	Current/Lag 1/Lag 2	0.0000	Reject H_0
1b	Z-Score	WPUI	Current/Lag 1/Lag 2	0.0000	Reject H_0
1c	Z-Score	CPU	Current/Lag 1/Lag 2	0.0000	Reject H_0
1d	Z-Score	EPU	Current/Lag 1/Lag 2	0.0000	Reject H_0
2a	DTD	WUI	Current/Lag 1/Lag 2	0.0000	Reject H_0
2b	DTD	WPUI	Current/Lag 1/Lag 2	0.0000	Reject H_0
2c	DTD	CPU	Current/Lag 1/Lag 2	0.0000	Reject H_0
2d	DTD	EPU	Current/Lag 1/Lag 2	0.0000	Reject H_0

Source: STATA 17 Processing Results

Based on Table 1, all research models produce a probability value of the F Test of 0.0000 which is smaller than the α value of 0.05. Thus, H_0 is rejected for the entire model, which means that simultaneously global uncertainty (WUI, WPUI, CPU, and EPU) along with control variables (leverage, market capitalization, firm size, ROA, ROE, current ratio, and GDP) have a significant effect on the risk of corporate bankruptcy as measured through Z-Score and DTD. These results indicate that the regression model built in this study is valid to explain the dynamics of corporate bankruptcy risk on the Indonesia Stock Exchange

Partial Test (t-test)

The partial test (t-test) was carried out to analyze the significance of the influence of each independent variable on the dependent variable individually. Independent variables are declared to have a significant effect if the probability value (p-value) is less than α (0.05) or α (0.10). Based on the regression results in Table 2 (Model 1a-2d), the results of the hypothesis test can be summarized as follows.

Table 2
Summary of Partial Test Results and Hypothesis Testing

Hypothesis	Variable	Specification	Coefficients	t-stat	Sig.	Conclusion
H1a	WUI → Z-Score	Current	0.0000	0.431	TS	Rejected
H1a	WUI → Z-Score	Lag 1	-0.0000	-1.426	TS	Rejected
H1a	WUI → Z-Score	Lag 2	0.0000	0.698	TS	Rejected
H1b	WPUI → Z-Score	Current	-0.0177	-1.525	TS	Rejected

Hypothesis	Variable	Specification	Coefficients	t-stat	Sig.	Conclusion
H1b	WPUI → Z-Score	Lag 1	0.0095	0.627	TS	Rejected
H1b	WPUI → Z-Score	Lag 2	-0.0376	-2.803	***	Accepted
H1c	CPU → Z-Score	Current	-0.0033	-2.687	***	Accepted
H1c	CPU → Z-Score	Lag 1	-0.0051	-3.640	***	Accepted
H1c	CPU → Z-Score	Lag 2	-0.0057	-3.835	***	Accepted
H1d	EPU → Z-Score	Current	-0.0041	-2.402	**	Accepted
H1d	EPU → Z-Score	Lag 1	-0.0038	-1.966	**	Accepted
H1d	EPU → Z-Score	Lag 2	-0.0059	-2.724	***	Accepted
H1e	WUI → DTD	Current	-0.0000	-1.443	TS	Rejected
H1e	WUI → DTD	Lag 1	-0.0000	-0.849	TS	Rejected
H1e	WUI → DTD	Lag 2	0.0000	2.362	**	Accepted*
H1f	WPUI → DTD	Current	-0.0005	-0.033	TS	Rejected
H1f	WPUI → DTD	Lag 1	0.0249	1.867	*	Accepted*
H1f	WPUI → DTD	Lag 2	0.0545	3.843	***	Accepted*
H1g	CPU → DTD	Current	0.0001	0.045	TS	Rejected
H1g	CPU → DTD	Lag 1	-0.0002	-0.190	TS	Rejected
H1g	CPU → DTD	Lag 2	-0.0001	-0.088	TS	Rejected
H1h	EPU → DTD	Current	-0.0037	-2.047	**	Accepted
H1h	EPU → DTD	Lag 1	0.0004	0.222	TS	Rejected
H1h	EPU → DTD	Lag 2	0.0028	1.568	TS	Rejected

Remarks: TS = Insignificant; * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$. The sign (*) in the conclusion column indicates a different direction of influence than the initial hypothesis.

Based on Table 2, of the eight main hypotheses (H1a-H1h) each consisting of three specifications (current, lag 1, lag 2), the partial test results showed that the CPU and EPU on the Z-Score Model had a consistently significant negative effect on the entire period, while the WPUI was only significant at lag 2. WUI is not proven to be significant on the Z-Score Model across all specifications. In the DTD Model, results consistent with the hypothesis were only found in the current specification EPU. Meanwhile, some variables show opposite results from the initial hypothesis and literature, which will be further analyzed in the discussion section.

Heterogeneity Analysis Based on Ownership Status and Industrial Sector

To answer the formulation of the second and third problems, a heterogeneity analysis was carried out based on two main dimensions: the ownership status of the company (Private vs SOE/BUMD) and the industrial sector which is grouped into four main categories (Finance, Cyclical, Commodity, and Others). This analysis aims to identify whether a company's sensitivity to global uncertainty varies based on ownership and sectoral characteristics.

Heterogeneity by Industry Sector (Z-Score Model)

The results of the heterogeneity test on the influence of global uncertainty on the Z-Score based on industry sector are presented in the following table.

Table 3

Sectoral Heterogeneity – Effect of Global Uncertainty on Z-Score

Index	Specification	Finance	Cyclical	Commodity	Others
WUI	Current	-0.0002	0.0000	-0.0000	0.0000
WUI	Lag 1	-0.0000	-0.0000	-0.0000	-0.0000
WUI	Lag 2	-0.0000	-0.0000	0.0000	0.0000
WPUI	Current	0.1135	-0.0320*	-0.0137	0.0048
WPUI	Lag 1	0.2316	-0.0176	0.0115	0.0638
WPUI	Lag 2	0.2014*	-0.0520**	-0.0504***	0.0070
CPU	Current	0.0092	-0.0046**	-0.0034**	-0.0000
CPU	Lag 1	0.0111	-0.0071***	-0.0055***	-0.0009
CPU	Lag 2	0.0159	-0.0071**	-0.0060***	-0.0034
EPU	Current	-0.0142	-0.0033	-0.0056***	0.0010
EPU	Lag 1	-0.0039	-0.0053	-0.0046**	0.0028
EPU	Lag 2	0.0122	-0.0083**	-0.0079***	0.0025
N		76	3522	4358	1421

Description: * p < 0.10; ** p < 0.05; *** p < 0.01.
Source: Data Processing Results

Based on Table 3, there is significant heterogeneity in the industrial sector's response to global uncertainty. The Cyclical and Commodity sectors are the two most sensitive sectors to CPUs and EPUs, shown by significant negative coefficients across almost all specifications. In the Commodity sector, the EPU lag coefficient of -0.0079 (significant at α 1%) was the strongest influence among all sectors for the EPU index, indicating that commodity companies are most vulnerable to accumulated economic policy uncertainty. WPUI lag 2 shows an interesting pattern, where the Commodity sector has a high sensitivity (-0.0504***) while the Finance sector shows a positive coefficient (0.2014*), indicating the resilience of the financial sector to the uncertainty of the pandemic in the two-year delay period. The Others (defensive) sector consistently shows no significance across indices and specifications, confirming its defensive characteristics that are resistant to macroeconomic shocks.

Heterogeneity Based on Ownership Status (Z-Score Model)

The results of the heterogeneity test based on ownership status are presented in the following table.

Table 4
Ownership Heterogeneity – Effect of Global Uncertainty on Z-Score

Index	Specification	Private	BUMN/BUMD
WUI	Current	0.0000	-0.0000
WUI	Lag 1	-0.0000	0.0000
WUI	Lag 2	0.0000	-0.0000
WPUI	Current	-0.0187	0.0052
WPUI	Lag 1	0.0106	-0.0374***
WPUI	Lag 2	-0.0380***	-0.0591***
CPU	Current	-0.0035***	-0.0019
CPU	Lag 1	-0.0053***	-0.0029*
CPU	Lag 2	-0.0059***	-0.0051

Index	Specification	Private	BUMN/BUMD
EPU	Current	-0.0041**	-0.0031
EPU	Lag 1	-0.0039*	-0.0042*
EPU	Lag 2	-0.0060***	-0.0102***
N		8979	398

Description: * p < 0.10; ** p < 0.05; *** p < 0.01.
Source: Data Processing Results

Based on Table 4, an interesting pattern was found where for most of the uncertainty index, SOEs/BUMDs showed a greater magnitude of the coefficient than private companies. In WPUI lag 2, the SOE coefficient of -0.0591 (significant at α 1%) is much greater than the private coefficient of -0.0380. Similarly, in EPU lag 2, SOEs showed a coefficient of -0.0102 which is almost double the coefficient of the Private Coefficient of -0.0060. This indicates that the control of influence per increase in one unit of uncertainty index, SOEs experience a greater decrease in Z-Score than private companies, so that SOEs are more vulnerable to global uncertainty in the context of the Indonesia Stock Exchange.

Heterogeneity by Industry Sector (DTD Model)

The results of the heterogeneity test on the influence of global uncertainty on DTD based on industry sectors are presented in the following table.

Table 5
Sectoral Heterogeneity – Effect of Global Uncertainty on DTD

Index	Specification	Finance	Cyclical	Commodity	Others
WUI	Current	-0.0003	-0.0000	0.0000	-0.0000
WUI	Lag 1	-0.0004	-0.0000	0.0000	-0.0000
WUI	Lag 2	0.0001	0.0000	0.0000*	0.0000
WPUI	Current	-0.4143***	-0.0150	0.0215	-0.0221
WPUI	Lag 1	0.1187	0.0326	0.0255	-0.0047
WPUI	Lag 2	0.0851	0.0657***	0.0501**	0.0283
CPU	Current	-0.0205	-0.0004	0.0010	-0.0015
CPU	Lag 1	-0.0305**	-0.0006	0.0005	-0.0013
CPU	Lag 2	-0.0100	-0.0017	0.0017	-0.0020
EPU	Current	-0.0808	-0.0059**	0.0001	-0.0068
EPU	Lag 1	-0.0498	-0.0016	0.0035	-0.0037
EPU	Lag 2	-0.0023	0.0022	0.0043*	-0.0023
N		70	3419	4282	1385

Description: * p < 0.10; ** p < 0.05; *** p < 0.01.
Source: Data Processing Results

In Table 5, the Finance sector shows the highest sensitivity to WPUI in the current period with a coefficient of -0.4143 (significant at α 1%), a value that is much greater than other sectors. This confirms the central role of the banking sector as a risk amplifier during the pandemic period. In addition, a CPU lag of 1 showed a significant negative impact on the Finance sector (-0.0305**), indicating the vulnerability of the financial sector to climate policy uncertainty with a delay effect. In the Cyclical and Commodity sectors, a significant positive coefficient pattern was found for WPUI lag 2, which indicates that counter-intuitively, the pandemic uncertainty in the

previous two-year period actually increased the DTD (lowering the risk of default) in these sectors.

Heterogeneity by Ownership Status (DTD Model)

The results of the heterogeneity test of the effect of global uncertainty on DTD based on ownership status are presented in the following table.

Table 6
Ownership Heterogeneity – Effect of Global Uncertainty on DTD

Index	Specification	Private	BUMN/BUMD
WUI	Current	-0.0000	-0.0000*
WUI	Lag 1	-0.0000	-0.0001***
WUI	Lag 2	0.0000***	-0.0000
WPUI	Current	0.0045	-0.0795**
WPUI	Lag 1	0.0304**	-0.0752***
WPUI	Lag 2	0.0560***	0.0492
CPU	Current	0.0005	-0.0063***
CPU	Lag 1	0.0001	-0.0035
CPU	Lag 2	0.0001	-0.0018
EPU	Current	-0.0029	-0.0164***
EPU	Lag 1	0.0011	-0.0103***
EPU	Lag 2	0.0036**	-0.0095**
N		8.764	392

Description: * p < 0.10; ** p < 0.05; *** p < 0.01.
Source: Data Processing Results

Table 6 shows a very different pattern between private companies and SOEs/BUMDs in their responses to global uncertainties on DTD metrics. SOEs/BUMDs show significant negative coefficients with large magnitudes in almost all uncertainty index specifications, especially EPU current (-0.0164***), EPU lag 1 (-0.0103***), WPUI current (-0.0795**), and WPUI lag 1 (-0.0752***). In contrast, private companies mostly show insignificant or even positive coefficients. These findings indicate that in the context of the Indonesian capital market, SOEs are more vulnerable entities to global uncertainty on market-based metrics (DTDs), which is contrary to the conventional assumption that SOEs have higher resilience due to implicit government support.

Discussion

The Influence of the World Uncertainty Index (WUI) on Financial Distress

The results of the Model 1a test showed that the World Uncertainty Index (WUI) had no significant effect on the Z-Score in all specifications (current, lag 1, and lag 2), with t-statistical values of 0.431, -1.426, and 0.698, respectively. Thus, the H1a hypothesis is rejected. These findings are different from the research of D. N. Nguyen et al., (2022) which found a significant positive influence of WUI on the risk of default in 26 developing countries.

The insignificance of WUI to Z-Score in the Indonesian context can be explained through several theoretical arguments. First, WUI is an index built from the Economist Intelligence Unit (EIU) country report which is aggregate and captures economic-political uncertainty in general (Ahir et al., 2018). These aggregative characteristics make WUI more sensitive to the dynamics of global systemic uncertainty, but less specific in capturing the dimensions of uncertainty that are directly relevant to the company's operations in emerging markets such as Indonesia. Second, from the perspective of Signal Theory Ross (1977), the Z-Score as an accounting-based metric

takes time to reflect the degradation of financial fundamentals due to general uncertainty. Indonesia's capital market, which is relatively less integrated with the dynamics of global systemic uncertainty than developed markets, may cause the transmission of WUI to corporate accounting fundamentals to be weaker. Third, empirical evidence from Kang et al. (2020) supports the notion that WUI's impact on developing economies operates primarily through trade and investment channels rather than through direct financial distress mechanisms, which may explain why more targeted indices such as EPU and CPU capture the relevant uncertainty dimensions more effectively for Indonesian corporate risk.

The Effect of the World Pandemic Uncertainty Index (WPUI) on Financial Distress

The results of the Model 1b test showed that WPUI only had a significant negative effect on the Z-Score at the lag 2 specification with a coefficient of -0.0376 ($t = -2.803$, $p < 0.01$). At the current and lag 1 specifications, WPUI had no significant effect with t-statistical values of -1.525 and 0.627, respectively. Thus, the H1b hypothesis is only partially accepted, i.e. it is proven at the lag 2 specification.

This pattern is interesting to analyze. Pandemic uncertainty as measured through WPUI is not immediately transmitted to financial distress in the current and lag 1 periods, but only manifests in the lag 2 period. This indicates that the impact of the pandemic on corporate financial fundamentals in Indonesia is delayed and accumulated. Several theoretical explanations can be put forward. First, in the early period of the pandemic (current), many companies still had adequate financial cushions to absorb shocks. Second, the Indonesian government has implemented various stimulus and relaxation policies such as credit restructuring and tax incentives that contain the impact of the pandemic on financial ratios in the short term. Third, the real impact of the pandemic can only be seen when the financial cushion is eroded and stimulus policies begin to be lifted, namely in the two-year period after the event.

These results corroborate Haidar et al., (2023) who showed that pandemic uncertainty (WPUI) had a positive effect on global corporate default risk, but the effect was moderated by public trust in the government and religious adherence. In the Indonesian context, the influence of relatively high religiosity and trust in government intervention during the pandemic may be one of the reasons why the transmission of WPUI to financial distress has been delayed. However, when the cumulative pressure can no longer be mitigated, a significant impact appears in the lag period 2.

The Effect of Climate Policy Uncertainty (CPU) on Financial Distress

The results of the Model 1c test showed that the CPU had a significant negative effect on the Z-Score on all specifications with a magnitude that intensified as the lag period increased. In the current period, the CPU coefficient was -0.0033 ($t = -2.687$, $p < 0.01$), at lag 1 it was -0.0051 ($t = -3.640$, $p < 0.01$), and at lag 2 it was -0.0057 ($t = -3.835$, $p < 0.01$). This pattern consistently supports the H1c hypothesis.

This evidence aligns with research by Chen et al., (2025) in China which showed that CPUs have a positive effect on the risk of corporate default. From a Signal Theory perspective, CPU upgrades send signals to market participants that the environmental regulatory regime is about to change, which creates uncertainty regarding future compliance costs, potential asset stranding, and green investment needs. For companies in Indonesia, especially those engaged in the carbon-intensive sector, CPU upgrades will weigh on financial fundamentals through multiple transmission channels. First, increased financing costs due to increased climate risk perceptions (Chen et al., 2025). Second, the increased likelihood of asset impairment due to carbon-intensive assets risks becoming uneconomical under new climate regulations (Chen et al., 2025). Third, from the perspective of Agency Theory, climate uncertainty magnifies conflicts of interest because managers tend to be reluctant to make green transitions that require large investments with uncertain long-term returns (Liu et al., 2023).

The coefficient pattern that strengthens at longer lags confirms the existence of a systematic aggravation effect as found by (Liu et al., 2023). This indicates that the impact of climate policy uncertainty is not instantaneous, but rather accumulates over time through mechanisms of declining R&D investments, declining ESG performance, and increased financial constraints as shown in the channel analysis of (Liu et al., 2023). In the context of Indonesia,

where many companies still rely on the commodity sector and carbon-intensive natural resource extraction, the accumulated pressure from global CPUs is likely to be more significant in the medium term.

The Effect of Economic Policy Uncertainty (EPU) on Financial Distress

The results of the Model 1d test showed that Economic Policy Uncertainty (EPU) had a significant negative effect on the Z-Score in all time specifications. In the current period, the EPU coefficient was -0.0041 ($t = -2.402$, $p < 0.05$), at lag 1 it was -0.0038 ($t = -1.966$, $p < 0.05$), and at lag 2 it was -0.0059 ($t = -2.724$, $p < 0.01$). Given that the Z-Score is a measure of financial health where a lower value indicates a higher risk of bankruptcy, a negative coefficient means that an increase in EPU increases the risk of financial distress of the company. Thus, the H1d hypothesis is accepted.

This result is consistent with research by Liu et al. (2025) in China which shows that EPU has a positive effect on the probability of a company's default with an aggravation effect as the period increases. The coefficient pattern that strengthened from current (-0.0041) to lag 2 (-0.0059) in this study also confirmed the existence of the aggravation effect. From the perspective of Agency Theory Jensen & Meckling (1976), the increase in EPU exacerbates the information asymmetry between managers and owners. Managers who face economic policy uncertainty tend to take more conservative or even opportunistic decisions, including delaying productive investments, increasing excessive cash holdings, or taking excessive risks to cover declining performance. The accumulation of these decisions over a period of one to two years leads to a degradation of the financial ratios that make up the Z-Score, so that the risk of financial distress increases continuously.

Moreover, from the perspective of Signal Theory, the increase in EPU sends a negative signal to the market regarding the macroeconomic outlook. This increases the cost of external funding Waisman et al. (2015) and lowered the company's access to credit. In the Indonesian context, high economic policy uncertainty such as those during the US-China trade war and the election period often coincide with pressure on the rupiah and the rise in the benchmark interest rate, which directly weigh on the company's financial cost structure. This condition is in line with the findings of Wijaya et al. (2022) who show that the US-China trade war triggers systemic risks in ASEAN markets, including Indonesia.

The Effect of the World Uncertainty Index (WUI) on Distance-to-Default

The results of Model 2a testing showed that WUI had no significant effect on DTD in the current and lag 1 periods, but showed a significant positive coefficient at lag 2 with a t-statistical value of 2.362 ($p < 0.05$). A positive sign on DTD means that an increase in WUI increases the distance to default (lowering the risk of default), which is the opposite of the hypothesis. Thus, the H1e hypothesis is rejected.

These results contradict the findings of D. N. Nguyen et al., (2022) in 26 emerging markets that showed WUI had a negative effect on DTD. Some contextual explanations can be put forward for the Indonesian context. First, WUI is an aggregative index that is sensitive to global dynamics but less specific in capturing dimensions relevant to the default risk of Indonesian corporations. Second, in the lag period of 2, the positive coefficient that emerges may reflect the adaptive response of the market and the company's management after two years of accommodating systemic uncertainty shocks. Management that is aware of increasing global uncertainty tends to implement conservative strategies such as increasing cash holdings Demir (2017); Phan et al. (2019), reduce leverage, and strengthen financial positions, which in turn increases DTD. Third, the possible role of flight-to-safety where in a period of high global uncertainty, foreign capital entering the Indonesian market reduces the cost of capital for companies with good fundamentals, so that the DTD increases.

The Effect of the World Pandemic Uncertainty Index (WPUI) on Distance-to-Default

The results of Model 2b testing showed that WPUI had a significant positive effect on DTD at lag specification 1 (coefficient 0.0249, $t = 1.867$, $p < 0.10$) and lag 2 (coefficient 0.0545, $t = 3.843$, $p < 0.01$), while the current specification was not significant. A positive sign means that an increase in WPUI increases DTD (lowering the risk of default), which is the opposite of the

hypothesis. Thus, the H1f hypothesis is technically not proven in the expected direction.

This counter-intuitive result requires an in-depth discussion. Several theoretical and contextual explanations can be put forward. First, from a behavioral perspective, pandemic uncertainty can trigger adaptive learning mechanisms among companies. After the initial experience of the pandemic in the current period, the company has progressively developed resilience capacity such as supply chain diversification, increased cash reserves, digitized operations, and business model adaptation. In the lag 1 and lag 2 periods, the resilience capacity built up strengthened the company's financial position, so that DTD increased.

Second, the massive policy interventions carried out by the Indonesian government during the pandemic such as credit restructuring, banking liquidity injections, and large fiscal stimulus have succeeded in maintaining capital market stability. This is in line with the findings of Haidar et al., (2023) that public trust in the government weakens the negative impact of WPUI on the risk of default. Third, from a portfolio rebalancing perspective, the long period of pandemic uncertainty encourages investors to look for assets with strong fundamentals and Indonesia as an emerging market with a relatively resilient economy attracts capital flows that increase the market value of listed companies' assets. Fourth, there is a possibility of selection bias where companies that manage to survive and remain listed on the IDX in the lag period 2 are those that have strong fundamentals, so that the average DTD tends to increase. Although technically the hypothesis is not proven in the expected direction, significant findings of considerable magnitude (especially at lag 2 with a coefficient of 0.0545) remain an important empirical contribution to be further explored.

The Effect of Climate Policy Uncertainty (CPU) on Distance-to-Default

The results of the Model 2c test showed that the CPU had no significant effect on DTD at all specifications, with very small coefficients close to zero and t-statistical values of 0.045, -0.190, and -0.088, respectively for current, lag 1, and lag 2. Thus, the H1g hypothesis is rejected. This result contrasts with the findings of Liu et al. (2023) and Chen et al., (2025) which showed that CPUs had a significant negative effect on corporate DTD in China.

Some contextual explanations can be put forward for the Indonesian context. First, the CPU index used in this study was built based on climate policy news in the United States (Gavriilidis, 2021). Although global because the US is the largest economic power, the direct transmission of US CPUs to the market valuation of Indonesian companies is relatively weak compared to its transmission to accounting fundamentals which are more strategic and long-term. Second, Indonesia's capital market is still in the early stages of integrating climate risks into asset valuations. In contrast to the Chinese market which has developed a more mature ESG rating, the Indonesian market has not fully prioritized climate policy information in asset pricing, so market-based DTDs do not show a significant response to changes in CPU. Third, the difference in economic structure between Indonesia and countries with economies that have been more advanced in the green transition makes CPUs have a more diffuse impact on Indonesian companies.

The impact of CPUs on Indonesian companies is more captured through the Z-Score which reflects the accumulation of fundamental degradation, as seen in Model 1c, than through DTD which is more market sentiment. This shows a disconnect between market perceptions and fundamental realities in responding to climate risks, which in turn is an early warning that Indonesia's capital markets may underprice climate risks.

The Effect of Economic Policy Uncertainty (EPU) on Distance-to-Default

The results of Model 2d testing showed that EPU had a significant negative effect on DTD only at the current specification with a coefficient of -0.0037 ($t = -2.047$, $p < 0.05$). At lag 1 and lag 2 specifications, EPU had no significant effect on DTD. Thus, the H1h hypothesis is only accepted in the current period.

This pattern is interesting because it is different from the pattern on Z-Score where EPU is significant across all specifications. This difference can be explained through the characteristics of the two metrics. DTD is a market-based metric that reflects forward-looking information and market expectations in real-time (Duan et al., 2012; Duan & Wang, 2012). Because the Indonesian capital market is relatively efficient in absorbing information on global economic policy

uncertainty, the impact of the EPU on the market value of the company's assets and volatility occurs instantly in the current period. In contrast, in the lag 1 and lag 2 periods, the market has accommodated such uncertainty information so that it no longer causes a significant revision in the asset price to the DTD.

These findings are in line with D. N. Nguyen et al., (2022) argument that market-based metrics such as DTDs respond quickly to global sentiment, while accounting-based metrics such as Z-Score take time to reflect the degradation of financial fundamentals. From a Signal Theory perspective, the increase in EPU in the current period creates a revision of market signals to the value of the company that is directly reflected in the stock price and asset volatility, and in turn affects the DTD.

Sensitivity Differentiation Based on Ownership Status

Based on the results of the heterogeneity test presented in Tables 4 and 6, consistent evidence was found that there is a significant difference in the sensitivity of companies to global uncertainty based on ownership status. Key findings indicate that SOEs are more vulnerable to global uncertainty than private companies in the context of the Indonesian capital market, especially for DTD metrics. Thus, the H2 hypothesis is accepted, but in the opposite direction from some international literature.

In the Z-Score Model, the magnitude of the SOE coefficient is consistently greater than that of private companies for the WPUI and EPU indices at lag 2 specifications. WPUI lag 2 shows a coefficient of SOEs of -0.0591 (significant at α 1%) versus Private of -0.0380 (significant at α 1%). EPU lag 2 shows a coefficient of SOEs of -0.0102 (significant at α 1%) versus Private Sector of -0.0060 (significant at α 1%). In the DTD model, this difference is more dramatic. The current WPUI shows a SOE coefficient of -0.0795 (significant at α 5%) while the private sector is not significant. The current EPU shows a SOE coefficient of -0.0164 (significant at α 1%) while the private sector is only -0.0029 (insignificant).

This finding contradicts Wang & Huang, (2025) who shows that private companies in China are more vulnerable to macroeconomic uncertainty because SOEs receive implicit government guarantees. However, these findings are in line with Liu et al. (2023) who found that state ownership amplifies the negative impact of CPUs on default risk in China. Some contextual explanations for the Indonesian market can be put forward. First, from the perspective of Agency Theory, SOEs in Indonesia have a more complex governance structure with multiple stakeholders (central government, ministries, community) which can exacerbate conflicts of interest and inefficiency in decision-making in the face of uncertainty. Lengthy bureaucratic processes and slower adaptation to global changes make SOEs less responsive than more agile private companies in managing uncertainty risk. This is consistent with empirical evidence from Indonesian SOE governance studies, where the dual mandate of pursuing commercial objectives while fulfilling social obligations (e.g., subsidized pricing, employment maintenance in remote areas) creates structural rigidities that impede timely risk management responses. Second, SOEs in Indonesia generally operate in strategic sectors that are more exposed to global uncertainties such as energy, mining, banking, telecommunications, and infrastructure. These sectors are highly intertwined with global commodity price dynamics and international policies, making them sensitive to WPUI, EPU, and CPU.

Third, SOEs often carry a policy burden such as providing public services at subsidized prices, maintaining operations in marginalized areas, and maintaining employment, which limits their flexibility in adapting to uncertainty. This condition worsens financial fundamentals as uncertainty increases. Fourth, from the perspective of Signal Theory, SOEs have high exposure to public news and market perception regarding government intervention. Uncertainty in economic policy and climate policy directly affects investors' expectations of the direction of SOEs, so market-based DTDs are more sensitive to the uncertainty index than private companies with clearer commercial mandates. The implicit government guarantee that is often assumed is not fully reflected in the valuation of the Indonesian SOE market which is still facing negative sentiment related to institutional risks.

Sensitivity Differentiation Based on Industry Sector

Based on the results of the heterogeneity test presented in Tables 3 and 5, strong

evidence was found that the transmission of global uncertainty to bankruptcy risk is uneven across industry sectors on the Indonesia Stock Exchange. Thus, the H3 hypothesis is accepted. The Commodity sector is the most vulnerable sector to global uncertainty, particularly for the CPU and EPU indices. In the Z-Score Model, the CPU coefficient in the Commodity sector is significantly negative across all specifications (current: -0.0034**, lag 1: -0.0055***, lag 2: -0.0060***). Similarly, EPU is significantly negative across all specifications in the Commodity sector (current: -0.0056***, lag 1: -0.0046**, lag 2: -0.0079***). This pattern is in line with the findings of Chen et al. (2025) in China that energy-intensive and carbon-intensive sectors are more vulnerable to climate policy uncertainty due to the high costs of technology adaptation and regulatory compliance. The Commodity sector in Indonesia, which is dominated by mining, plantation, and oil-and-gas companies, is highly exposed to global commodity price dynamics, international climate policy, and environmental regulation, so that uncertainty along these dimensions directly burdens their financial fundamentals.

The Cyclical sector shows a moderate but consistent sensitivity pattern. CPU is significantly negative across all specifications (current: -0.0046**, lag 1: -0.0071***, lag 2: -0.0071**), while EPU is significant at lag 2 (-0.0083**) and WPUI is significant at current (-0.0320*) and lag 2 (-0.0520**). These findings are consistent with the characteristics of the cyclical sector, which is sensitive to the economic cycle and consumer sentiment. During periods of high uncertainty, consumer purchasing power declines, demand for cyclical products such as automotive, property, and durable goods contracts, and profit margins are eroded, which ultimately increases bankruptcy risk.

The Finance sector exhibits a particularly interesting pattern. In the DTD Model, the Finance sector has the highest sensitivity to WPUI at the current specification with a coefficient of -0.4143 (significant at α 1%), a value far greater than that of other sectors. This confirms the central role of the banking sector as a risk amplifier during the pandemic period. This finding is in line with Purwanto et al., (2023) who showed the vulnerability of the Indonesian banking sector during the COVID-19 pandemic through the credit risk channel, where liquidity, profitability, and leverage have a significant effect on banking financial distress. The Finance sector also shows sensitivity to CPU at lag 1 with a coefficient of -0.0305 (significant at α 5%), indicating vulnerability to climate policy uncertainty with a delayed effect. This can be explained by the role of banks as intermediaries that finance carbon-intensive sectors, so that transition risk is transmitted to the banking balance sheet.

The Others sector (the defensive category) consistently shows no significance across almost all indices and specifications. This pattern confirms the defensive characteristics of sectors such as consumer non-cyclical, healthcare, and utilities, whose product demand is inelastic to macroeconomic conditions. When global uncertainty increases, consumption of staple products and healthcare services remains stable, so that corporate cash flows are not significantly affected. This finding carries important implications for portfolio risk management practices, where investors may consider increasing their allocation to defensive sectors as a hedge against global uncertainty.

Overall, the sectoral heterogeneity found in this study provides an important contribution to the bankruptcy risk literature in emerging markets. The differing sensitivities across sectors indicate that risk-mitigation policies for global uncertainty need to be tailored to sectoral characteristics. The Commodity and Cyclical sectors require priority in financial resilience strengthening programs, the Finance sector requires a strong buffer mechanism to withstand pandemic and climate policy shocks, while the Defensive sector is relatively resilient and can function as a stabilizer at the systemic level.

CONCLUSION

This study examines the effect of four global uncertainty indices (WUI, EPU, WPUI, and CPU) on corporate bankruptcy risk among 9,377 firm-years listed on the IDX during 2000–2024, using Z-Score and DTD as complementary measures. The findings show that global uncertainty affects bankruptcy risk heterogeneously. EPU and CPU consistently increase financial distress risk, while WPUI has a delayed effect at lag 2. WUI shows no significant effect on accounting-based bankruptcy risk, whereas current-period EPU significantly affects market-based DTD, indicating faster market responses to policy uncertainty. SOEs/BUMDs are more vulnerable than

private firms, challenging the assumption of implicit government protection.

Sectorally, Commodity and Cyclical industries are the most sensitive, while the Finance sector amplifies pandemic-related risks and defensive sectors are relatively resilient. These findings support the application of Agency Theory and Signal Theory by demonstrating that uncertainty transmission depends on uncertainty type, measurement approach, ownership status, and industry characteristics. The study is limited by the use of U.S.-based uncertainty indices, potential endogeneity in fixed-effects regression, unobserved corporate governance factors, and possible survivorship bias. Future research should incorporate firm-level governance variables, dynamic panel methods, cross-country comparisons, and mediating factors such as cash management and hedging strategies.

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AUTHOR CONTRIBUTION STATEMENT

Bryan Habib Gautama contributed to the conceptualization, data collection, methodology, statistical analysis, interpretation, and initial manuscript preparation. Rosmita Rasyid contributed to the research supervision, methodological validation, interpretation of findings, critical review, and manuscript refinement. Both authors reviewed and approved the final manuscript.

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