

Research Article

From Financial Distress to Corporate Turnaround: An Episode-Based Measurement Approach in an Emerging Market Context

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Abstract: This paper introduces an episode-based measurement approach for studying corporate turnaround in emerging markets, addressing a fundamental methodological limitation in existing literature that predominantly treats the firm as the unit of analysis. Using data from the Indonesia Stock Exchange (IDX) covering 2000–2024, we identify 96 financial distress episodes from 87 non-financial firms, where distress is defined economically as periods when return on investment (ROI) falls below the prevailing risk-free rate. The episode-based framework reconceptualizes the unit of analysis from individual firms to discrete distress-recovery sequences, enabling temporal alignment of distress onset, strategy implementation, and recovery assessment. Descriptive findings reveal that 43.75% of episodes achieved successful turnaround, with management turnover present in 51.04% of episodes and macroeconomic shocks coinciding with 27.08% of episodes. An early empirical validation using binary logistic regression with cluster-robust standard errors demonstrates excellent model classification ability (AUC = 0.817, 75% accuracy). This paper contributes primarily to research methodology in turnaround studies by proposing a replicable, theoretically grounded approach that captures the dynamic, episodic nature of financial distress and recovery particularly relevant in emerging market environments characterized by recurrent macroeconomic volatility.

Keywords: Corporate Turnaround; Financial Distress; Episode-Based Measurement; Emerging Markets; Research Methodology; Indonesia

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1. Introduction

Corporate turnaround the process by which financially distressed firms restore viability and sustained profitability remains one of the most consequential phenomena in strategic management. The ability of firms to recover from financial distress carries profound implications for employment stability, capital market efficiency, investor confidence, and broader economic development (Schweizer & Nienhaus, 2017). While turnaround research has generated substantial theoretical and empirical contributions over four decades since the seminal works of Schendel et al. (1976) and Robbins and Pearce (1992), important methodological challenges persist that limit the generalizability and practical applicability of findings.

Emerging markets present a particularly compelling yet underexplored context for turnaround research. These economies are characterized by institutional voids, concentrated ownership structures, evolving governance standards, and critically recurrent macroeconomic volatility that generates repeated episodes of widespread corporate distress (Claessens et al., 2003). Indonesia exemplifies these characteristics. As Southeast Asia's largest economy, Indonesia has experienced multiple severe economic disruptions over the past quarter-century: the devastating 1997–1998 Asian financial crisis, the 2008 global financial crisis, the 2013 “taper tantrum,” commodity price collapses in 2014–2015, and the COVID-19 pandemic in 2020–2021 (Wijantini, 2020). Each shock generated waves of corporate financial distress, followed by varied patterns of recovery and failure across listed firms.

This pattern of recurrent distress raises a fundamental methodological question that existing literature has insufficiently addressed: when a firm experiences multiple distinct episodes of financial distress over an extended observation period, should researchers treat that firm as a single observation, or should each episode constitute an independent analytical unit? The answer to this question has substantial implications for research design, statistical inference, and the practical applicability of findings.

This paper makes three contributions. First, we articulate the theoretical and methodological rationale for adopting distress episodes rather than firms as the unit of analysis in turnaround research. Second, we operationalize this episode-based approach using an economics-based definition of financial distress and demonstrate its application in the Indonesian context over a 24-year observation window (2000–2024). Third, we provide descriptive evidence on episode characteristics and early empirical validation of the framework's analytical utility. By foregrounding methodology over hypothesis testing, this paper aims to equip turnaround researchers with a replicable measurement approach suited to emerging market environments where firms frequently experience multiple, temporally distinct cycles of distress and recovery.

The remainder of this paper is organized as follows. Section 2 reviews existing literature and identifies the methodological gap. Section 3 presents our episode-based measurement approach in detail. Section 4 describes data and sample construction. Section 5 reports descriptive findings. Section 6 discusses visual contributions to the framework. Section 7 provides early empirical validation. Section 8 concludes with implications, followed by limitations and future research directions in Section 9.

2. Preliminaries or Related Work or Literature Review

Foundations of Corporate Turnaround Research

Corporate turnaround research has evolved through several distinct phases. The foundational period was marked by early empirical studies identifying patterns of decline and recovery (Schendel et al., 1976; Bibeault, 1982), followed by the influential two-stage model proposing that successful turnaround requires initial retrenchment followed by strategic recovery actions (Robbins & Pearce, 1992). Subsequent theoretical development introduced the process-based perspective emphasizing sequential strategic responses (Pearce & Robbins, 1993), the integrative two-stage model incorporating both strategic and operational dimensions (Arogyaswamy et al., 1995), and the resource-based view of turnaround as capability reconfiguration (Barker & Duhaime, 1997). These frameworks have guided empirical investigations across diverse contexts, examining factors such as retrenchment strategies, CEO replacement, corporate governance reforms, and stakeholder management as determinants of recovery success (Schweizer & Nienhaus, 2017; Trahms et al., 2013).

More recent contributions have expanded the theoretical lens to incorporate dynamic capabilities (Teece, 2007), upper echelons theory applied to management turnover decisions (Tangpong et al., 2021), stakeholder management perspectives in distress contexts (James, 2016), and institutional perspectives that recognize how country-level governance environments shape turnaround processes (Claessens et al., 2003). Empirical work has examined the nuanced effects of cost versus asset retrenchment under different competitive conditions (Morrow et al., 2004) and the role of board composition and governance reforms in facilitating recovery (Miglani et al., 2020). The field has also witnessed growing attention to emerging market contexts, though such studies remain substantially outnumbered by research in Anglo-American and European settings (Liou & Smith, 2007; Mallingu & Zéman, 2020).

The Firm-Level Static Observation Problem

Despite theoretical sophistication, turnaround research faces a persistent methodological limitation: the predominant treatment of the firm as the unit of analysis within a fixed observation window. This approach manifests in several common research designs:

Cross-sectional classification designs identify firms as “distressed” at a single point in time and classify them as “recovered” or “failed” at a subsequent point, treating the firm as a single binary observation (Smith & Graves, 2005). This approach implicitly assumes that financial distress is a one-time event—an assumption inconsistent with empirical reality, particularly in volatile emerging markets.

Panel data approaches track firms over multiple years but typically model distress as a continuous state variable rather than identifying discrete episodes with clear onset and

resolution points (Habib et al., 2020). While statistically sophisticated, these approaches may obscure the episodic nature of distress by treating consecutive years of underperformance as equivalent regardless of whether they represent one continuous episode or multiple distinct occurrences.

Matched-sample designs compare distressed firms with non-distressed counterparts at a given time point (Sudarsanam & Lai, 2001), again treating each firm as a single observation and ignoring the possibility that a firm classified as “recovered” may subsequently experience new distress.

The firm-level static approach generates at least three problems. First, it conflates firms that experience a single distress episode with those experiencing multiple episodes, potentially biasing estimates of strategy effectiveness (Dewi & Nasution, 2023). A firm that has undergone three distress episodes and recovered from two has different characteristics than a firm experiencing distress for the first time—yet static approaches may classify both identically. Second, it creates temporal misalignment between distress identification, strategy measurement, and outcome assessment, because different firms may enter distress at different times within the observation window. Third, it produces sample construction challenges when firms experience overlapping but distinct distress periods, forcing researchers to make arbitrary choices about which period to analyze (Sudarsanam & Lai, 2001; Filatotchev & Toms, 2006).

The Gap in Emerging Market Research

The firm-level limitation is amplified in emerging markets for several reasons. First, emerging market firms face more frequent and severe macroeconomic shocks, increasing the probability that individual firms experience multiple distress episodes within typical research observation windows (Claessens et al., 2003). In Indonesia specifically, the sequence of crises over 2000–2024 means that a firm listed throughout this period could plausibly have experienced two, three, or even four distinct episodes of financial distress.

Second, concentrated ownership and family control structures common in emerging markets mean that the same controlling shareholders may oversee multiple cycles of distress and recovery, potentially applying different strategies in each episode based on accumulated learning or changed circumstances (Filatotchev & Toms, 2006). Third, evolving institutional environments—including changing governance requirements, market regulations, and accounting standards—mean that the context surrounding distress episodes within the same firm may differ substantially across time periods.

Existing Indonesian turnaround studies (Nastiti & Pangestuti, 2016; Giriati, 2018; Gustina et al., 2024) have uniformly adopted firm-level approaches with relatively short observation windows (typically 3–5 years), which limits their ability to capture repeat episodes and contextual variation. This paper addresses these limitations by proposing a methodological framework that explicitly recognizes the episodic nature of financial distress.

3. Proposed Method

Reconceptualizing the Unit of Analysis

The central methodological contribution of this paper is the reconceptualization of the unit of analysis in turnaround research from the firm to the distress episode. We define a distress episode as a temporally bounded sequence of consecutive years during which a firm’s economic performance falls below a threshold indicating value destruction, together with the subsequent assessment of whether recovery was achieved.

This reconceptualization draws on the concept of “spells” or “episodes” in labor economics and duration analysis (Lancaster, 1990), where researchers routinely distinguish between individuals and their employment/unemployment spells, recognizing that the same individual may experience multiple episodes with different characteristics and outcomes. Applied to corporate turnaround, this approach acknowledges that:

1. A single firm may generate multiple distress episodes over an extended observation window.
2. Each episode is characterized by its own onset conditions, duration, severity, strategic responses, and outcome.
3. Episodes within the same firm are related (sharing firm-level characteristics) but not identical, requiring statistical methods that account for within-firm correlation.

Economics-Based Definition of Financial Distress

A critical design choice in episode identification is the definition of financial distress. Existing approaches fall broadly into two categories: accounting-based definitions that use indicators such as negative net income, negative operating cash flow, or dividend omissions (Smith & Graves, 2005); and market-based definitions that rely on stock price declines or credit default indicators (Altman et al., 2019).

We adopt an economics-based definition that identifies distress as the sustained failure to generate returns exceeding the opportunity cost of capital (Nasution et al., 2021). Specifically, a firm-year is classified as distressed when its Return on Investment (ROI) falls below the prevailing risk-free rate (Rf):

$$\text{Distress Condition: } ROI_{it} < Rf_t$$

This definition has several advantages for episode-based research. First, it captures economic value destruction rather than merely accounting losses—a firm earning 2% ROI when the risk-free rate is 7% is destroying economic value even though it reports positive accounting profit. Second, the use of a time-varying benchmark (Rf_t) naturally accounts for changing macroeconomic conditions across the observation period. Third, it provides a clear, continuous threshold that can be consistently applied across industries and time periods without requiring industry-specific adjustments.

For Indonesia, we calculate sub-period average risk-free rates based on Bank Indonesia certificate (SBI) rates and government bond yields:

Table 1. Risk-Free Rate by Sub-Period

Sub-Period	Average Risk-Free Rate (Rf)	Economic Context
2000–2005	12.10%	Post-Asian crisis recovery
2006–2010	10.68%	Growth period / Global financial crisis
2011–2015	7.29%	Commodity slowdown / Taper tantrum
2016–2020	7.27%	Stability period / COVID-19 onset
2021–2024	6.71%	Post-pandemic recovery

The declining trajectory of risk-free rates reflects Indonesia's macroeconomic stabilization over the observation period, and the sub-period approach ensures that distress identification is calibrated to contemporary economic conditions rather than applying a single threshold across vastly different monetary environments.

Episode Construction Algorithm

Given the economics-based distress definition, episodes are constructed through the following algorithm:

Step 1: Annual distress classification. For each firm-year observation, determine whether $ROI_{it} < Rf_t$ (where Rf_t corresponds to the sub-period containing year t). Step 2: Episode identification. Group consecutive distressed years within the same firm into single episodes. A distress episode begins in the first year that ROI falls below Rf and continues until either (a) ROI recovers above Rf for at least two consecutive years (indicating genuine recovery rather than temporary fluctuation), or (b) the observation window ends. Step 3: Minimum duration filter. Require episodes to have a minimum duration of two consecutive years to distinguish sustained distress from transient fluctuations. Finally, step 4: Turnaround assessment. Classify each completed episode as a successful turnaround if the firm subsequently achieves $ROI > Rf$ for at least two consecutive years following the distress period, or as a failed turnaround if the firm fails to achieve sustained recovery within the assessment window.

This algorithm ensures that episodes are non-overlapping, temporally precise, and consistently defined across the sample. Importantly, it allows the same firm to contribute multiple episodes if it experiences multiple distinct distress-recovery cycles separated by periods of adequate performance.

Temporal Alignment Framework

A critical advantage of the episode-based approach is the ability to achieve precise temporal alignment between three key components:

1. Distress onset and severity measurement assessed at the beginning of the episode, capturing the depth and nature of the performance decline.

2. Strategy implementation measurement assessed during the distress period, capturing the turnaround actions undertaken in response to distress.
3. Outcome assessment assessed after the conclusion of the distress period, determining whether strategies led to sustained recovery.

This temporal sequencing addresses a common problem in turnaround research where strategy variables and outcome variables are measured simultaneously or in unclear temporal relationship, creating ambiguity about causal direction. By anchoring measurement to the episode timeline, we ensure that predictors are measured before outcomes, strengthening causal inference (Pearce & Robbins, 1993).

Statistical Considerations: Cluster-Robust Standard Errors

When firms contribute multiple episodes, observations within the same firm are not independent they share unobserved firm-level characteristics such as organizational culture, ownership structure, and management quality. Standard logistic regression assuming independence would underestimate standard errors, leading to inflated Type I error rates.

We address this through cluster-robust standard errors (Huber-White sandwich estimator) clustered at the firm level (Cameron & Trivedi, 2005). This approach allows for arbitrary correlation among episodes within the same firm while maintaining consistent point estimates. The cluster-robust approach is preferred over random effects models in this context because: (a) the number of episodes per firm is small (modal value = 1, maximum = 3), limiting the information available for random effects estimation; and (b) our primary interest is in population-average effects rather than firm-specific predictions.

Population and Sample

The study population comprises all non-financial firms listed on the Indonesia Stock Exchange (IDX) with available financial data during the 2000–2024 observation window. Financial firms (banks, insurance, securities companies) are excluded due to their distinct capital structures, regulatory environments, and distress definitions that make comparison with non-financial firms inappropriate (Altman et al., 2019).

Sample construction follows the episode identification algorithm described in Section 3.3, applied to the complete panel of eligible firm-year observations. The process yields:

1. Total firm-year observations screened: approximately 8,500+ across the 24-year window.
2. Firms identified with at least one qualifying distress episode: 87 non-financial firms.
3. Total distress episodes identified: 96 episodes.
4. Firms with single episodes: 78 firms (89.7%).
5. Firms with multiple episodes: 9 firms (10.3%), contributing 2–3 episodes each.

The fact that 10.3% of firms in our sample experienced multiple distinct distress episodes empirically validates the conceptual rationale for the episode-based approach. Under a traditional firm-level design, these 9 firms would contribute only 9 observations despite having experienced 18 analytically distinct episodes with potentially different characteristics and outcomes.

Variable Measurement

Variables are measured in alignment with the temporal framework described in Section 3.4. Turnaround outcome (TURN) is coded 1 for episodes achieving sustained recovery ($ROI > R_f$ for two or more consecutive years post-episode) and 0 otherwise. Strategy variables include retrenchment (RET), coded as a binary indicator of significant cost/asset reduction during the episode; strategic management accounting intensity (SMA); management turnover (MT), indicating change in CEO or board leadership during the episode; and corporate governance quality (CG). Control variables include distress severity (SEV), firm size (SIZE), leverage (LEV), liquidity (LIQ), firm age (AGE), macroeconomic shock exposure (Macro_Shock), and investor control type (INV_Control).

4. Results and Discussion

Episode Outcomes

Table 2. Descriptive Statistics of Episode-Level Variables (N = 96)

Variable	Measurement	Mean / Proportion	SD	Min	Max
<i>Dependent Variable</i>					
TURN (Turnaround Success)	Binary (1 = success)	0.4375 (42/96)	—	0	1
<i>Strategy Variables</i>					
RET (Retrenchment)	Binary (1 = yes)	0.3438 (33/96)	—	0	1
SMA (Strategic MA Intensity)	Continuous (index)	2.240	0.855	1.0	4.5
MT (Management Turnover)	Binary (1 = change)	0.5104 (49/96)	—	0	1
CG (Corporate Governance)	Continuous (score)	0.733	0.328	0.1	1.0
<i>Control Variables</i>					
SEV (Distress Severity)	Continuous (ROI – Rf)	–1.518	2.300	–12.4	–0.01
SIZE (Firm Size, ln assets)	Continuous	13.890	2.722	8.2	21.1
LEV (Leverage, D/A)	Continuous	0.625	0.629	0.02	3.8
LIQ (Liquidity, Current Ratio)	Continuous	2.282	3.193	0.1	22.5
AGE (Firm Age, years)	Continuous	34.896	24.019	3	112
Macro_Shock	Binary (1 = crisis period)	0.2708 (26/96)	—	0	1
INV_Control	Binary (1 = institutional)	0.6562 (63/96)	—	0	1

Of the 96 identified distress episodes, 42 (43.75%) resulted in successful turnaround while 54 (56.25%) failed to achieve sustained recovery. This near-even split provides adequate statistical variation for modeling purposes and is consistent with turnaround success rates reported in other emerging market studies—Syahida and Ameer (2010) reported approximately 40% recovery rates in Malaysian distressed firms.

Strategy Prevalence Across Episodes

The descriptive statistics reveal important patterns in turnaround strategy deployment. Management turnover was the most commonly observed strategic action, present in 51.04% of episodes (49 out of 96). This high prevalence suggests that leadership change is a frequent organizational response to financial distress in Indonesian firms, consistent with upper echelons theory predictions that boards respond to performance decline by replacing top management (Tangpong et al., 2021).

Retrenchment was observed in 34.38% of episodes (33 out of 96), indicating that cost and asset reduction while theoretically prominent in the turnaround literature (Robbins & Pearce, 1992) is not universally adopted by Indonesian distressed firms. This may reflect the institutional context where labor market rigidities, concentrated ownership, and stakeholder considerations constrain retrenchment activities (Rico & Puig, 2019).

Corporate governance quality shows moderate levels (mean = 0.733, SD = 0.328) with substantial variation across episodes, while strategic management accounting intensity (mean = 2.240, SD = 0.855) indicates moderate utilization of advanced management accounting practices among distressed firms.

Contextual Variables

Macroeconomic shocks coincided with 27.08% of episodes (26 out of 96), confirming that external economic disruptions represent a substantial contextual factor in the Indonesian setting. The relatively high proportion of episodes occurring during crisis periods underscores the importance of controlling for macroeconomic conditions—a consideration that episode-based research naturally accommodates through temporal precision.

Institutional investor control characterizes 65.62% of episodes (63 out of 96), reflecting the concentrated ownership structures typical of Indonesian listed firms. The mean firm age of 34.9 years (SD = 24.019) indicates substantial heterogeneity, ranging from relatively young firms to well-established enterprises with over a century of operational history.

Episode Distribution Across Time Periods

Table 3 presents the distribution of distress episodes across the five sub-periods, revealing temporal clustering patterns consistent with macroeconomic conditions.

Table 3. Distribution of Distress Episodes Across Time Periods

Sub-Period	Rf (%)	Episodes (n)	Successful (n)	Failed (n)	Success Rate (%)
2000–2005	12.10	28	10	18	35.71
2006–2010	10.68	22	11	11	50.00
2011–2015	7.29	19	9	10	47.37
2016–2020	7.27	16	7	9	43.75
2021–2024	6.71	11	5	6	45.45
Total	—	96	42	54	43.75

Several patterns emerge from the temporal distribution. First, the highest concentration of episodes occurs in the 2000–2005 period (28 episodes), reflecting the lingering effects of the Asian financial crisis and the high distress threshold imposed by elevated risk-free rates during this period. Second, turnaround success rates improved from 35.71% in the earliest period to approximately 45–50% in subsequent periods, potentially reflecting improved corporate governance standards, institutional development, and accumulated organizational learning. Third, the declining number of episodes over time partly reflects the decreasing risk-free rate threshold (making it progressively “easier” to avoid classification as distressed) and partly reflects genuine improvements in corporate performance across the Indonesian market.

Visual Contributions to the Framework

The episode-based measurement approach benefits substantially from visual representation to communicate its logic and application. We develop three diagrams that together provide a comprehensive illustration of the methodology.

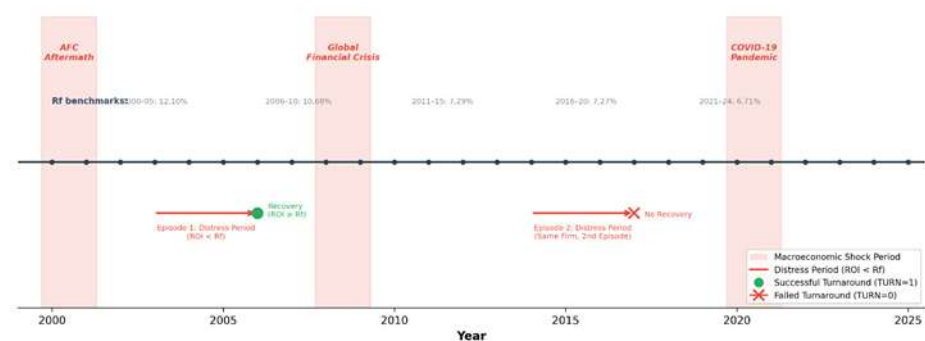


Figure 1. Distress Turnaround Timeline

Figure 1 presents the Distress-Turnaround Timeline Diagram, illustrating how the 24-year observation window (2000–2024) is structured for episode identification. The diagram shows how individual firm performance trajectories are mapped against time-varying risk-free rate thresholds, with distress episodes emerging as periods where the trajectory falls below the threshold. The figure illustrates the temporal alignment of distress onset, strategy assessment windows, and recovery evaluation periods, making explicit the sequencing logic that distinguishes this approach from static cross-sectional designs. The five sub-periods with their respective risk-free rates are clearly demarcated, showing how the distress threshold adapts to changing macroeconomic conditions.



Figure 2. Sample Selection Flowchart

Figure 2 presents the Sample Selection Flowchart, documenting the systematic process through which distress episodes are identified from the population of IDX-listed firms. The flowchart traces the progression from the initial population of all listed non-financial firms, through the annual distress classification step, the consecutive-year grouping procedure,

minimum duration filtering, and finally the turnaround outcome assessment. Each step includes the number of observations retained and excluded, providing full transparency and replicability. This figure is particularly important for methodological papers as it allows future researchers to replicate the episode identification procedure in different market contexts.

Figure 3 presents the Conceptual Model diagram, illustrating how the episode-based framework integrates theoretical constructs with empirical measurement. The model shows the episode as the central unit of analysis, with distress characteristics (severity, duration, onset timing) feeding into strategy variables (retrenchment, management turnover, governance changes, management accounting adaptation), which in turn predict turnaround outcomes. Control variables and moderating relationships are depicted with appropriate notation. Importantly, the diagram makes explicit how cluster-robust estimation handles the nested structure of episodes within firms.

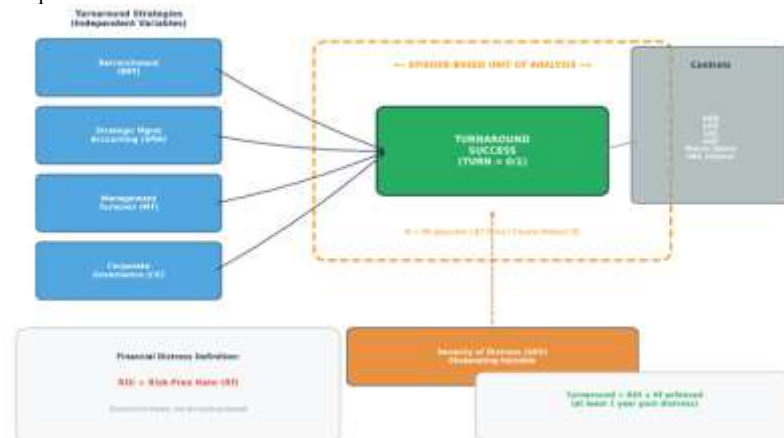


Figure 3. Conceptual Model

Together, these three figures provide complementary perspectives on the methodology: the temporal logic (Figure 1), the operational procedure (Figure 2), and the analytical framework (Figure 3).

Early Empirical Insight: Model Validation

While this paper's primary contribution is methodological rather than substantive, we briefly present early empirical results to demonstrate the analytical viability of the episode-based approach. A binary logistic regression model with cluster-robust standard errors (clustered on 87 firms) was estimated with turnaround success (TURN) as the dependent variable. The estimated model demonstrates excellent predictive capacity:

1. Area Under the ROC Curve (AUC): 0.817, indicating outstanding discrimination between successful and failed turnaround episodes (Hosmer et al., 2013).
2. Overall classification accuracy: 75.00%.
3. Hosmer-Lemeshow goodness-of-fit test: $\chi^2 = 10.11$, $p = 0.258$, indicating no significant departure from observed frequencies and confirming adequate model fit.
4. Wald chi-square: $\chi^2 = 22.83$, $p = 0.029$, confirming overall model significance.

These diagnostics confirm that the episode-based measurement approach yields analytically viable data that support meaningful statistical modeling. The AUC of 0.817 exceeds conventional thresholds for "excellent" classification (AUC > 0.80) and compares favorably with prediction models in prior turnaround research (Altman et al., 2019).

Without presenting full regression output—which will be detailed in a forthcoming journal article—we note that the model reveals two particularly noteworthy patterns. First, management turnover emerges as a significant positive predictor of turnaround success, with episodes involving leadership change showing substantially higher recovery probabilities. This finding is consistent with upper echelons theory and the "new broom" hypothesis suggesting that fresh leadership brings cognitive reframing necessary for strategic reorientation (Tangpong et al., 2021; Hofer, 1980).

Second, macroeconomic shock exposure shows a significant negative association with turnaround probability, indicating that episodes coinciding with broader economic crises face substantially reduced recovery prospects regardless of firm-level strategic actions. This finding underscores the importance of contextual factors in emerging market turnaround research

and validates the inclusion of macro-level controls in the episode-based framework (Claessens et al., 2003).

These preliminary findings will be expanded with full moderation analysis, marginal effects computation, and robustness testing in subsequent work. For the present purpose, they serve to demonstrate that the episode-based methodology produces empirically meaningful and theoretically interpretable results.

5. Conclusions

This paper has introduced and operationalized an episode-based measurement approach for corporate turnaround research, addressing a fundamental methodological limitation in existing literature. By reconceptualizing the unit of analysis from the firm to the distress episode, we enable more precise temporal alignment, accommodate firms experiencing multiple distress cycles, and provide a measurement framework particularly suited to emerging market contexts characterized by recurrent macroeconomic volatility. The key methodological contributions are threefold. First, the economics-based distress definition using time-varying risk-free rate benchmarks provides a theoretically grounded threshold that captures economic value destruction rather than merely accounting losses, while naturally adapting to changing macroeconomic conditions across extended observation windows. This represents an advancement over both static accounting-based thresholds (e.g., consecutive losses) and market-based approaches that may be influenced by speculative dynamics unrelated to fundamental firm health. Second, the episode construction algorithm with its consecutive-year grouping, minimum duration filter, and sustained recovery requirement yields analytically clean, non-overlapping units that maintain temporal precision. The algorithm is fully transparent and replicable, requiring only standard financial statement data and publicly available risk-free rate information, making it accessible to researchers in diverse institutional contexts. Third, the combination of episode-level analysis with cluster-robust standard errors appropriately addresses the statistical dependence among episodes contributed by the same firm without sacrificing analytical power. This approach balances the need for correct inference with the practical constraints of relatively small samples common in emerging market turnaround research.

Applied to the Indonesian context (2000–2024), this approach identifies 96 distress episodes from 87 firms, with 10.3% of firms contributing multiple episodes—empirically demonstrating that firm-level designs would lose information from repeat occurrences. The descriptive findings reveal meaningful patterns in strategy deployment and turnaround success rates that vary across time periods, and early empirical validation confirms the approach's analytical viability with excellent model fit diagnostics ($AUC = 0.817$). For turnaround researchers, this paper offers a replicable methodological template applicable to any market context where longitudinal firm-level data and appropriate distress thresholds can be identified. The approach is particularly valuable for emerging market research where extended observation windows frequently capture multiple macroeconomic cycles and where the same firms may experience repeated distress. For practitioners and policymakers, the episode-based perspective emphasizes that turnaround is not a one-time challenge but a potentially recurring organizational phenomenon requiring sustained attention to institutional resilience and adaptive capacity.

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References

- Altman, E. I., Iwanicz-Drozowska, M., Laitinen, E. K., & Suvas, A. (2019). 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. <https://doi.org/10.1111/jifm.12053>
- Arogyaswamy, K., Barker, V. L., III, & Yasai-Ardekani, M. (1995). Firm turnarounds: An integrative two-stage model. *Journal of Management Studies*, 32(4), 493–525. <https://doi.org/10.1111/j.1467-6486.1995.tb00786.x>
- Barker, V. L., III, & Duhaime, I. M. (1997). Strategic change in the turnaround process: Theory and empirical evidence. *Strategic Management Journal*, 18(1), 13–38. [https://doi.org/10.1002/\(SICI\)1097-0266\(199701\)18:1<13::AID-SMJ843>3.0.CO;2-X](https://doi.org/10.1002/(SICI)1097-0266(199701)18:1<13::AID-SMJ843>3.0.CO;2-X)
- Bibeault, D. B. (1982). *Corporate turnaround: How managers turn losers into winners*. McGraw-Hill.
- Cameron, A. C., & Trivedi, P. K. (2005). *Microeconometrics: Methods and applications*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511811241>
- Claessens, S., Djankov, S., & Klapper, L. (2003). Resolution of corporate distress in East Asia. *Journal of Empirical Finance*, 10(1–2), 199–216. [https://doi.org/10.1016/S0927-5398\(02\)00023-3](https://doi.org/10.1016/S0927-5398(02)00023-3)
- Filatovchev, I., & Toms, S. (2006). Corporate governance and financial constraints on strategic turnarounds. *Journal of Management Studies*, 43(3), 407–433. <https://doi.org/10.1111/j.1467-6486.2006.00596.x>
- Giriati. (2018). Turnaround strategy of manufacturing companies listed on the Indonesia Stock Exchange. *Jurnal Economia*, 14(1), 87–100. <https://doi.org/10.21831/economia.v14i1.19761>
- Gustina, I., Wijantini, & Sari, R. C. (2024). Asset retrenchment and corporate turnaround: Evidence from Indonesian listed firms. *Cogent Business & Management*, 11(1), 2312890. <https://doi.org/10.1080/23311975.2024.2312890>
- Habib, A., Costa, M. D., Huang, H. J., Bhuiyan, M. B. U., & Sun, L. (2020). Determinants and consequences of financial distress: Review of the empirical literature. *Accounting & Finance*, 60(S1), 893–921. <https://doi.org/10.1111/acfi.12400>
- Hofer, C. W. (1980). Turnaround strategies. *Journal of Business Strategy*, 1(1), 19–31. <https://doi.org/10.1108/eb038886>
- Hosmer, D. W., Lemeshow, S., & Sturdivant, R. X. (2013). *Applied logistic regression* (3rd ed.). John Wiley & Sons. <https://doi.org/10.1002/9781118548387>
- James, S. D. (2016). Strategic bankruptcy: A stakeholder management perspective. *Journal of Business Research*, 69(2), 492–499. <https://doi.org/10.1016/j.jbusres.2015.05.006>
- Lancaster, T. (1990). *The econometric analysis of transition data*. Cambridge University Press. <https://doi.org/10.1017/CCOL0521265967>
- Liou, D.-K., & Smith, M. (2007). Financial distress and corporate turnaround: A review of the literature and agenda for research. *Accounting, Accountability & Performance*, 13(1), 74–114. <https://doi.org/10.2139/ssrn.925596>
- Mallinguh, E., & Zéman, Z. (2020). Financial distress, prediction, and strategies by firms: A systematic review of literature. *Periodica Polytechnica Social and Management Sciences*, 28(2), 168–183. <https://doi.org/10.3311/PPso.13204>
- Miglani, S., Ahmed, K., & Henry, D. (2020). Corporate governance and turnaround: Evidence from Australia. *Australian Journal of Management*, 45(4), 549–578. <https://doi.org/10.1177/0312896220902225>
- Morrow, J. L., Johnson, R. A., & Busenitz, L. W. (2004). The effects of cost and asset retrenchment on firm performance: The overlooked role of a firm's competitive environment. *Journal of Management*, 30(2), 189–208. <https://doi.org/10.1016/j.jm.2003.01.002>
- Dewi, N. P. N. C., & Nasution, D. A. D. (2023). Pentingnya Penerapan E-Commerce Bagi UMKM Sebagai Salah Satu Bentuk Pemasaran Digital Dalam Menghadapi Revolusi Industri 4.0. *Jurnal Pijar*, 1(3), 566–577.

- Nasution, D. A. D., Muda, I., Sumekar, A., & Abubakar, E. (2021, March). Analysis of the Economic Behavior of Society E-Commerce as an Impact on the Development of the 4.0 Industrial Revolution and Society 5.0. In BICED 2020: Proceedings of the 2nd EAI Bukittinggi International Conference on Education, BICED 2020, 14 September, 2020, Bukittinggi, West Sumatera, Indonesia (p. 217). European Alliance for Innovation.
- Pearce, J. A., II, & Robbins, D. K. (1993). Toward improved theory and research on business turnaround. *Journal of Management*, 19(3), 613–636. <https://doi.org/10.1177/014920639301900306>
- Rico, M., & Puig, F. (2019). Successful turnarounds in bankrupt firms? Assessing retrenchment in the most severe form of crisis. *BRQ Business Research Quarterly*, 22(3), 177–193. <https://doi.org/10.1016/j.brq.2019.06.002>
- Robbins, D. K., & Pearce, J. A., II. (1992). Turnaround: Retrenchment and recovery. *Strategic Management Journal*, 13(4), 287–309. <https://doi.org/10.1002/smj.4250130404>
- Schendel, D., Patton, G. R., & Riggs, J. (1976). Corporate turnaround strategies: A study of profit decline and recovery. *Journal of General Management*, 3(3), 3–11. <https://doi.org/10.1177/030630707600300301>
- Schweizer, L., & Nienhaus, A. (2017). Corporate distress and turnaround: Integrating the literature and directing future research. *Business Research*, 10(1), 3–47. <https://doi.org/10.1007/s40685-016-0041-8>
- Smith, M., & Graves, C. (2005). Corporate turnaround and financial distress. *Managerial Auditing Journal*, 20(3), 304–320. <https://doi.org/10.1108/02686900510585627>
- Sudarsanam, S., & Lai, J. (2001). Corporate financial distress and turnaround strategies: An empirical analysis. *British Journal of Management*, 12(3), 183–199. <https://doi.org/10.1111/1467-8551.00193>
- Syahida, A., & Ameer, R. (2010). Turnaround prediction of distressed companies: Evidence from Malaysia. *Journal of Financial Reporting and Accounting*, 8(2), 143–159. <https://doi.org/10.1108/19852511011088398>
- Tangpong, C., Lehmborg, D., & Li, Z. (2021). CEO replacement, top management vacancy, and the sequence of top management team changes in high technology turnaround companies. *Long Range Planning*, 54(2), 102103. <https://doi.org/10.1016/j.lrp.2021.102103>
- Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319–1350. <https://doi.org/10.1002/smj.640>
- Trahms, C. A., Ndofor, H. A., & Sirmon, D. G. (2013). Organizational decline and turnaround: A review and agenda for future research. *Journal of Management*, 39(5), 1277–1307. <https://doi.org/10.1177/0149206312471390>
- Wijantini. (2020). Strategy for recovery from Indonesian financially distressed companies in crisis. *International Research Journal of Business Studies*, 13(1), 49–62. <https://doi.org/10.21632/irjbs.13.1.49-62>