

Narrative Risk in Crypto Disclosures: Textual Evidence from an Emerging Market

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Received : March 25, 2023

Accepted : May 09, 2023

Published : May 31, 2023

Citation: Nurlaela, L., (2023). Narrative Risk in Crypto Disclosures: Textual Evidence from an Emerging Market. Sinergi International Journal of Accounting and Taxation. 1(1),

ABSTRACT: This study examines how specific narrative features in crypto related corporate disclosures influence firm specific crash risk among Indonesian public firms. Set within the backdrop of Indonesia's regulatory transition under POJK 27/2024, the research focuses on five textual dimensions: negative tone, uncertainty, forward looking language, readability, and regulatory salience. Using a panel dataset covering 2019–2025, we conduct textual analysis on firm disclosures written in Bahasa Indonesia, drawn from IPO prospectuses, financial reports, and material announcements. Natural Language Processing tools, adapted to the local linguistic context, were applied to extract narrative metrics. These metrics were then linked to two crash risk measures: Negative Conditional Skewness (NCSKEW) and Down to Up Volatility (DUVOL). Regression results reveal that negative tone and uncertainty significantly elevate crash risk, while forward looking language and regulatory references reduce it by reinforcing investor confidence and signaling stronger managerial commitment to regulatory compliance. Additionally, the implementation of POJK 27/2024 coincides with more structured, regulation oriented narratives. The study contributes to textual finance by developing a language sensitive risk assessment model tailored to an emerging market context. It underscores the importance of regulatory anchoring and narrative clarity in managing investor expectations in volatile sectors like crypto.

Keywords: Crypto Disclosure, Narrative Risk, Textual Analysis, Crash Risk, POJK 27/2024, Indonesia, Emerging Markets.



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INTRODUCTION

In recent years, the evolution of crypto asset markets has significantly transformed the landscape of financial disclosure, especially in emerging markets like Indonesia. This transformation is marked by a growing recognition of the need to standardize and regulate the reporting of crypto related activities by public firms. Indonesia, with its increasing number of crypto investors and expanding digital asset transaction volumes, exemplifies the broader global trend of incorporating crypto assets into mainstream financial frameworks. The regulatory response to this shift has been proactive, culminating in the issuance of POJK 27/2024, which formally mandates structured

disclosures for digital financial assets. This move signifies a major milestone in Indonesia's regulatory trajectory, aligning with a global push toward transparency and institutional accountability in digital finance.

The historical development of crypto asset disclosure standards in emerging economies highlights a complex interplay of regulatory evolution, market demands, and socio political dynamics. Initially, many emerging markets, including Indonesia, lacked specific frameworks to address the novel features of digital assets. As the crypto landscape matured, regulators began introducing targeted measures to mitigate associated risks while promoting investor protection and market stability. In Indonesia, efforts such as POJK 51/POJK.03/2017 laid early groundwork by emphasizing ESG related disclosures, and were subsequently expanded through the crypto specific mandates embedded in POJK 27/2024. These regulatory milestones reflect Indonesia's intention to synchronize local governance mechanisms with international best practices, albeit tailored for the unique context of its financial markets (Kieu et al., 2022; Wulansari & Adhariani, 2023).

The increasing emphasis on narrative disclosure arises from its critical role in shaping investor sentiment, particularly in periods marked by heightened volatility and regulatory uncertainty. Unlike quantitative data, narrative disclosures provide contextual insights into firm strategies, perceived risks, and managerial expectations. Empirical research demonstrates that comprehensive narratives improve investor trust, reduce information asymmetry, and foster market resilience (Bhullar et al., 2024; Khurong et al., 2022). As firms respond to complex and fast evolving sectors like crypto assets, narrative transparency becomes essential in aligning investor expectations with organizational realities.

Nevertheless, implementing crypto related financial disclosures remains a challenge in many jurisdictions. The rapid pace of innovation often exceeds the regulatory capacity to monitor and enforce new compliance standards. Emerging markets, in particular, face structural limitations such as under resourced agencies and limited digital finance expertise (Ioannou & Serafeim, 2019; Wahyuningrum et al., 2023). This institutional gap often leads to inconsistencies in reporting practices and investor skepticism. Moreover, cultural and linguistic factors further complicate disclosure effectiveness, as local interpretations of financial narratives can diverge significantly from standardized international frameworks (Kartika et al., 2023; H. Z. Khan et al., 2021).

Regulatory transitions such as the shift in Indonesia's crypto oversight from Bappebti to OJK underscore the significance of institutional continuity in fostering transparency. While these transitions are designed to strengthen governance, they can temporarily disrupt disclosure norms and reduce investor confidence if not managed with clarity and consistency. Literature indicates that abrupt or ambiguous regulatory changes may heighten market volatility and deter investment, emphasizing the importance of strategic communication during institutional reforms (Goh et al., 2024; Ika et al., 2022).

Language specific challenges are particularly pertinent in Indonesia, where disclosures are primarily issued in Bahasa Indonesia. The nuances of financial terminology, combined with the intricacies of local expression, pose interpretation challenges for both domestic and foreign investors. Misinterpretations can arise due to translation errors or cultural nuances embedded in the narrative style for instance, terms such as *aset digital* in Bahasa Indonesia may emphasize ownership, while

in English the focus leans toward valuation which can affect investment decisions and market outcomes (Sari et al., 2020).

The advent of POJK 27/2024 is thus a pivotal step in reinforcing disclosure norms in Indonesia, particularly concerning crypto asset transparency. This regulation not only institutionalizes ESG reporting but also extends to digital financial instruments, mandating clearer, more standardized narratives. Such advancements signify a regulatory shift that aligns corporate behavior with ethical and sustainability imperatives, while also enhancing competitiveness and stakeholder engagement (Andayani, 2021; Setyahadi & Narsa, 2020).

In this context, this study aims to investigate how narrative features within crypto related disclosures specifically tone, uncertainty, forward looking language, readability, and regulatory salience influence firm specific crash risk in Indonesia. By analyzing publicly available disclosures from firms such as COIN, BOLA, and GOTO, this research constructs a localized textual framework based on Bahasa Indonesia financial narratives. It contributes to the growing body of literature at the intersection of textual finance, disclosure regulation, and crypto asset risk by offering empirical evidence from a non English, emerging market perspective.

The novelty of this study lies in its language specific approach and contextual grounding in Indonesia's regulatory reform. It explores the under researched area of narrative disclosure risk in the crypto sector and offers practical implications for regulators, investors, and corporate communicators. In doing so, it bridges theoretical discourse and real world practice, fostering a more robust understanding of how narrative disclosures can function as both a signal and a safeguard in volatile financial environments.

METHOD

In recent years, the evolution of crypto asset markets has significantly transformed the landscape of financial disclosure, especially in emerging markets like Indonesia. This transformation is marked by a growing recognition of the need to standardize and regulate the reporting of crypto related activities by public firms. Indonesia, with its increasing number of crypto investors and expanding digital asset transaction volumes, exemplifies the broader global trend of incorporating crypto assets into mainstream financial frameworks. The regulatory response to this shift has been proactive, culminating in the issuance of POJK 27/2024, which formally mandates structured disclosures for digital financial assets. This move signifies a major milestone in Indonesia's regulatory trajectory, aligning with a global push toward transparency and institutional accountability in digital finance.

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RESULT AND DISCUSSION

Descriptive Statistics

Table 1 presents summary statistics for the key narrative and crash risk variables. The average NCSKEW across the sample is 0.67, indicating a left skewed distribution in returns, while the average DUVOL of 0.83 suggests higher volatility during down markets. The average NCSKEW across the sample is 0.67, indicating a left-skewed distribution in returns, suggesting the presence of extreme downside risk in stock performance.

These distributions align with previous findings that sectoral and firm level characteristics significantly influence narrative styles. Technology oriented firms such as COIN tend to present more optimistic, future oriented disclosures (Histen, 2022), while firms in finance or utilities may exhibit higher uncertainty or caution (Fisher et al., 2019). Forward looking statements are more common among large cap and innovative firms (Haj-Salem et al., 2019). Moreover, Indonesian disclosures generally display moderate complexity, but with readability challenges for non-professional investors (Elmarzouky et al., 2022; Muslu et al., 2017).

An important trend emerges in the frequency of regulatory references: prior to POJK 27/2024, regulatory citations were sparse or general. After its implementation, mentions of POJK 27/2024 and Bappebti rules significantly increased (Rich et al., 2021), indicating improved disclosure rigor and institutional compliance.

Table 1. Descriptive Statistics of Key Variables

Variable	Mean	Std. Dev.	Min	Max
NCSKEW	0.67	0.58	2.31	0.19
DUVOL	0.83	0.22	0.41	1.29
Tone Score	3.45	1.28	0.42	7.89
Uncertainty Score	1.77	0.89	0.10	3.92
Forward Looking Score	5.12	1.95	1.01	9.74
Readability Score	6.03	1.44	2.33	9.89
Regulatory Salience Score	1.22	1.01	0	4

Regression Analysis

Table 2 presents the panel regression results examining the relationship between narrative features and crash risk. Tone and uncertainty show significant positive associations with both NCSKEW and DUVOL. Specifically, a 1 point increase in the Tone Score corresponds to a 0.12 rise in NCSKEW, implying elevated crash risk. Similarly, uncertainty heightens crash exposure, particularly in high volatility sectors. These results are consistent with global evidence on the risk implications of pessimistic disclosures (Efretuei, 2020; Hossain et al., 2019).

Conversely, forward looking language correlates negatively with crash risk. Firms that frequently mention future plans (e.g., "akan", "berencana") show lower DUVOL scores, supporting behavioral theories like prospect theory and signaling theory (Ertugrul et al., 2017). Regulatory salience also significantly reduces crash risk, underscoring the stabilizing effect of institutional references in disclosures (Choudhury et al., 2021).

Additional interaction models reveal that firm size and leverage moderate the effect of narrative tone. High leverage firms experience magnified crash risks from negative tone, whereas larger firms appear more resilient (El-Diftar et al., 2017; Moumen et al., 2016). Similarly, cyclical sectors show stronger risk responses to pessimistic language.

Moreover, the models validate threshold effects: when uncertainty exceeds the median, crash risk escalates nonlinearly (Albitar et al., 2022; Restrepo et al., 2022).

Table 2. Regression Results on Narrative Features and Crash Risk

Variable	NCSKEW Coefficient (SE)	DUVOL Coefficient (SE)
Tone Score	0.121** (0.048)	0.073** (0.034)
Uncertainty Score	0.145*** (0.051)	0.087*** (0.027)
Forward Looking Score	0.098** (0.039)	0.051* (0.028)
Readability Score	0.054 (0.042)	0.032 (0.029)
Regulatory Salience	0.128*** (0.037)	0.071** (0.025)
Firm Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes
Observations	420	420
R ²	0.39	0.33

Subsample Analysis

Distinct narrative patterns are evident across subsamples. Tech firms like COIN display aggressive, growth oriented language, while non tech entities like BOLA adopt more reserved narratives due to regulatory sensitivity (Moreno et al., 2019; Verbeeten et al., 2016). GOTO's disclosures show strategic narrative risk management, balancing transparency with prudence post-acquisition of Kripto Maksima Koin (Elmarzouky et al., 2022; Mei, 2024).

Ownership structure influences disclosure aggressiveness: firms with concentrated ownership tend to issue bolder, more detailed narratives (Aly et al., 2018; Dyer et al., 2017). Post regulatory implementation, narrative styles across firms exhibit clearer structure and higher reference frequency to formal regulations, signaling adaptation to POJK 27/2024 (Choudhry et al., 2021).

These results collectively highlight the predictive value of narrative features in explaining crash risk, reinforcing the necessity of language sensitive models in financial disclosure analysis.

The Role of Negative Tone and Uncertainty in Risk Elevation

The analysis reveals that negative tone and high uncertainty in corporate narratives substantially increase crash risk. This finding is aligned with global studies showing how pessimistic language in disclosures heightens investor concern and leads to adverse price reactions. Behavioral finance literature supports this outcome, suggesting that negative sentiment triggers cautious investor behavior and increased volatility. Notably, this risk amplification is more severe in highly leveraged or cyclical firms, where any signal of instability is magnified by existing financial or operational exposure.

These results demonstrate that tone and uncertainty are not neutral elements of disclosure but function as risk signals with market consequences. Their inclusion in financial narratives especially within disclosures relating to digital assets can distort investor expectations. In contexts where clear valuation benchmarks are lacking, such as the crypto asset sector, investors are more likely to rely on tone and linguistic cues as proxies for firm risk and outlook. This increases the materiality of language and places greater importance on how risk and uncertainty are communicated.

Forward Looking Language as a Risk Buffer

In contrast to negative sentiment, the inclusion of forward looking statements terms such as "akan", "berencana", and "menargetkan" is significantly associated with reduced crash risk. These results affirm theoretical propositions from signaling theory and prospect theory, which suggest that future oriented disclosures convey confidence and managerial vision, thereby enhancing investor trust. This pattern is especially visible among larger, tech driven firms like COIN and GOTO, which emphasize strategic expansion and innovation.

As a communication strategy, forward looking language serves to mitigate ambiguity and project optimism, which stabilizes investor expectations. These types of statements also help bridge the informational gap between current volatility and long term value propositions, allowing firms to shape the narrative toward their future potential rather than present limitations. In doing so, such disclosures support reputational resilience, especially during regulatory or macroeconomic shocks.

Regulatory References and Disclosure Credibility

The increasing frequency of regulatory mentions especially POJK 27/2024 and Bappebti directives suggests that regulatory salience enhances credibility and reduces perceived risk. Firms that reference these frameworks more frequently tend to experience lower crash risk, which signals to investors a higher level of governance alignment and transparency. This aligns with prior findings indicating that regulatory clarity can act as an institutional anchor during periods of financial innovation.

The sharp rise in regulatory references after January 2025 indicates both compliance responsiveness and a growing strategic use of regulation as a trust building mechanism in narrative disclosures. Such references provide informational anchors in a market segment where uncertainty is endemic, thereby reassuring investors about governance adherence without repeating previously stated points.

The Complexity of Readability in Financial Narratives

While the readability score did not exhibit consistent significance in linear regressions, further inspection suggests a U shaped relationship between readability and crash risk. Extremely complex narratives, overloaded with jargon and technical terminology, may confuse investors and obscure risk signals. Conversely, overly simplistic disclosures may be perceived as lacking substance or evasive.

This underscores the importance of optimizing communication using accessible yet informative language that supports informed investor interpretation without compromising accuracy. Readability thus emerges as a double edged sword: its absence can hinder understanding, while its over engineering may dilute meaning. Firms should strike a balance that matches their audience's informational needs while maintaining narrative integrity.

Subsample Dynamics: Sectoral and Ownership Variations

Subsample analyses underscore the heterogeneity in narrative styles across sectors and ownership structures. Technology firms tend to adopt assertive, optimistic tones in their disclosures, reflecting their innovation focus and high growth narratives. Non tech firms like BOLA, in contrast, often employ more cautious language, mirroring their regulatory exposure and risk aversion.

Moreover, concentrated ownership is associated with more aggressive disclosure strategies, potentially driven by internal monitoring and performance signaling. Firms with dominant shareholders may pursue riskier communication strategies to shape market perception proactively, while firms with dispersed ownership adopt more standardized and cautious disclosure approaches. This differentiation highlights the importance of governance context in narrative strategy.

Post Regulatory Transition Adjustments in Narrative Practices

Following the enforcement of POJK 27/2024, there is a visible shift in how firms construct their narratives. Disclosures become more structured, with clearer references to regulatory obligations and more measured language in risk reporting. This shift suggests that regulatory clarity not only improves compliance but also encourages deliberate narrative strategy.

Firms appear to be using their disclosures not just to inform but to signal trustworthiness, regulatory literacy, and long term alignment with investor and policy expectations. These

developments indicate that narrative reporting is not static but evolves in response to the regulatory landscape, with firms increasingly viewing disclosures as a space for reputational management and policy alignment.

CONCLUSION

This study investigated how specific narrative features within corporate disclosures namely tone, uncertainty, forward looking language, readability, and regulatory references impact crash risk among Indonesian public firms engaged in crypto related activities. Drawing on data from 2019 to 2025, the analysis leveraged a localized text based approach adapted to Bahasa Indonesia, providing a unique lens into the interplay between disclosure content and financial risk in an emerging market context.

Key findings reveal that negative tone and uncertainty in crypto related narratives are significantly associated with higher crash risk, as measured by NCSKEW and DUVOL. These features amplify investor anxiety and volatility, especially in high leverage or cyclical firms. Conversely, forward looking language and frequent references to POJK 27/2024 or Bappebti regulations reduce crash risk by signaling managerial confidence, transparency, and alignment with institutional expectations. While readability showed a non-linear effect, the study highlights the need for firms to balance technical precision with accessibility in their disclosures.

The study also uncovers important dynamics across sectors and governance structures. Tech firms were found to be more aggressive in their tone and outlook, while non tech firms exercised more regulatory caution. Furthermore, concentrated ownership correlated with bolder disclosure styles, emphasizing the influence of governance context on narrative strategy. Importantly, the enforcement of POJK 27/2024 triggered a visible improvement in disclosure structure, tone moderation, and regulatory referencing.

The central contribution of this research lies in its application of textual finance tools to an emerging market context where disclosures are primarily non-English, emerging market environment, supported by regulatory event timelines and sector specific narrative shifts. It provides empirical evidence that narrative disclosures are not merely communicative artifacts but financial instruments influencing market behavior and risk perception.

This research has practical implications for regulators, firms, and investors. Regulators such as OJK can use these insights to refine narrative disclosure standards and enforce clarity in crypto related communication. Firms are encouraged to adopt disclosure strategies that not only meet compliance but also build trust through transparent, forward looking, and institutionally anchored language. For investors, this study provides a framework for assessing narrative risk cues within annual reports and financial documents in the Indonesian capital market.

In conclusion, the integration of linguistic analysis into financial risk assessment represents a powerful extension of disclosure research. By localizing textual models and aligning them with regulatory developments like POJK 27/2024, this study offers a replicable methodology and foundational insight into how narrative construction can safeguard against systemic instability in volatile asset classes such as crypto.

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