

-RESEARCH ARTICLE-

RISK INTELLIGENCE IN ACTION: HOW RISK MANAGEMENT SHAPES FIRM VALUE IN THAILAND'S EMERGING MARKETS?

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—Abstract—

This study investigates the extent of Firm Risk Management Disclosure (FRMD) and its impact on Firm Value (FV) among 142 companies listed on the Market for Alternative Investment (MAI) in Thailand between 2017 and 2021. FRMD was classified into four categories, namely Strategic Risk (STR), Operating Risk (OPR), Financial Risk (FIR), and Compliance Risk (COR), while FV was assessed through

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stock market prices. Data were obtained from Thai 56-1 reports, and content analysis was undertaken using a structured checklist. The Disclosure Quality Level (DQL) was determined as the ratio of Actual Disclosure Scores to Maximum Disclosure Scores, with classification following the Corporate Governance Report standards of the Thailand Securities and Exchange Commission (SEC). Multiple Regression Analysis was applied, incorporating control variables such as Firm Size, Firm Age, Financial Auditor, Net Profit, Return on Assets (ROA), Return on Equity (ROE), and Leverage. The findings indicate that overall FRMD among MAI companies reached a “Good” level (79.45%). However, only 28.87% of firms disclosed information across all four risk categories. STR and OPR achieved a “Very Good” rating (88.73% and 85.21% respectively), FIR was rated as “Good” (79.58%), whereas COR was evaluated at the “Pass” level (55.63%). The analysis further revealed varying effects of FRMD components on FV. STR demonstrated a negative association with FV, OPR exhibited a positive association, while FIR and COR showed no statistically significant relationships. Among the control variables, the quality of Financial Auditor and ROA were found to have a positive influence on FV. These outcomes enhance the understanding of risk disclosure practices in emerging markets and underscore the context-specific significance of risk communication effectiveness for small and medium-sized enterprises (SMEs) operating within Thailand’s alternative investment sector.

Keywords: Risk Management, Disclosure, Firm Value, Stock Exchange of Thailand, MAI.

INTRODUCTION

Within the current economic paradigm, firm risk refers to uncertainties and vulnerabilities that may affect an organisation’s operations, profitability, and overall stability (Mansour et al., 2025). Such risks can stem from external influences, including market volatility, regulatory changes, or economic shocks, as well as internal issues, such as operational inefficiencies, weak financial management, or inadequate governance structures. Effective risk management is therefore essential for sustaining organisational resilience and ensuring long-term success (Hoang et al., 2025). Risk management is a strategic approach that involves identifying, assessing, and implementing proactive measures to mitigate the likelihood or impact of potential risks. The efficiency of this process allows firms to address challenges while safeguarding assets, reputation, and stakeholder confidence (Settembre-Blundo et al., 2021).

Consistent FRMD can further generate economic benefits, as it enhances investor confidence, encourages capital inflows, promotes innovation, and supports job creation. It also contributes to managerial transparency and stabilises systems by reducing uncertainty in the economic environment (Zadorozhnyi et al., 2021). Enterprise Risk

Management (ERM) represents a systematic framework for evaluating potential risks across all areas of business activity in accordance with securities exchange regulations. It encompasses various risk categories, including STR, OPR, FIR, and COR (ERM., 2023). FRMD is further shaped by regulatory requirements set by capital market authorities, which determine appropriate reporting standards and formats for each exchange (Dewiyanti, 2025; Ho et al., 2023). Empirical studies highlight that investors attach substantial importance to the quality of FRMD, particularly when disclosures reflect sound capital stewardship and strong governance. High-quality disclosures exert a positive and direct influence on FV (Dewiyanti, 2025).

Nevertheless, disclosure practices differ widely in terms of quality and comprehensiveness across firms and industries. While some firms provide clear and detailed information, others fall short of established standards, resulting in inconsistencies in the preparation and reporting of risk management activities. Strengthened FRMD practices not only benefit organisations but also provide stakeholders with clearer insights into how firms address uncertainties. The SET mandates that such disclosures be reported through the Thai 56-1 document, distributed across multiple platforms to facilitate accessibility and reinforce credibility. Consequently, firms are required to provide risk management information to investors and the wider market in order to foster a positive effect on both FV and overall disclosure practices (Elsayed et al., 2024). This study specifically examines the MAI, which largely comprises SMEs. These firms face considerable operational and value-creation challenges, making it imperative for them to demonstrate effective disclosure of risk management practices. The study's objective is to evaluate the level of FRMD and its influence on FV. The assessment of FRMD considers disclosures related to STR, OPR, FIR, and COR. Additionally, the analysis includes control variables such as firm size, firm age, the company's top four financial auditors (CFA), NP, ROA, and the debt-to-equity ratio (D/E).

LITERATURE REVIEW

Enterprise Risk Management (ERM) Theory Framework and Firm Value

Signalling Theory suggests that FRMD functions as a mechanism through which firms convey their competence, governance quality, and effectiveness in managing risks to investors (Connelly et al., 2011; Spence, 1973). Reports encompassing STR, OPR, FIR, and COR serve as communication tools, and within the context of this theory, they influence FV (Verrecchia, 2001). When firms send strong and credible signals through FRMD, investors respond positively, which in turn enhances FV. Agency Theory also provides a lens to interpret the role of FRMD. This theory focuses on the agency relationship between managers and shareholders (Jensen, 1976). Within this framework, FRMD is regarded as a governance mechanism that fosters transparency and reveals the strategies adopted to manage risks. Evidence from confirmatory factor

analysis (CFA) supports the notion that FRMD strengthens governance and has a positive effect on FV (Wijaya & Langgeng, 2020).

Information Asymmetry Theory (Akerlof, 1970) highlights the challenges arising from unequal access to information between firms and external stakeholders, particularly investors. Asymmetric information can lead to inefficiencies in the capital market when buyers cannot fully assess the quality or reliability of the available information. Empirical studies demonstrate that high-quality FRMD reduces information asymmetry, thereby influencing valuation positively (Dewiyanti, 2025; Ho et al., 2023). Al Natour et al. (2022) further argued that the quality of disclosures and the extent of information asymmetry can generate either favourable or adverse effects on FV depending on the reporting strength of a firm. The integration of these theoretical perspectives, as discussed by Zadorozhnyi et al. (2021), offers a more comprehensive understanding. This integrated framework connects the insights from Signalling Theory, Agency Theory, and Information Asymmetry Theory, establishing stronger theoretical foundations for explaining the relationship between FRMD and FV in firms listed on the MAI (Al Natour et al., 2022). The literature suggests that FRMD components interact differently with FV depending on the risk categories. Future research could expand on these interactions, particularly in SMEs and within emerging economies.

A systematic review of the literature further indicates that ERM contributes significantly to FV in publicly listed firms, although findings across studies are mixed. Li et al. (2025) observed that high-quality FIR and FRMD reduce uncertainty and financial costs, thereby increasing FV. In contrast, Florio and Leoni (2017) found that ERM implementation in Europe did not always correspond to improved FV. Nevertheless, other studies confirmed the positive impact of FRMD on FV (Hoang et al., 2025; Mansour et al., 2025). The extent of this relationship varies across categories of STR, OPR, FIR, and COR. For instance, Tunpornchai and Hensawang (2018) reported that ERM, STR, and FIR significantly improved FV among SMEs. Similarly, Hoyt and Liebenberg (2011) identified a strong positive correlation between ERM, especially OPR and COR, and FV in the U.S. insurance sector. Further evidence from Thailand associated robust COR with greater FV among SET100 companies due to enhanced transparency and disclosure (Tunpornchai & Hensawang, 2018).

Research focused on SMEs and developing markets suggests that ERM implementation is more challenging in such contexts because of limited resources and expertise (Dvorsky et al., 2021). SMEs often prioritise FIR while giving less attention to STR, and ERM is rarely embedded strategically (Mansour et al., 2025; Syrová & Špička, 2023). The disparities in disclosure levels largely depend on firms' internal reporting capabilities. Overall, the literature underscores that implementing ERM is complex and requires integration into organisational processes (Al Natour et al., 2022). Drawing

from these theoretical and empirical foundations, the present study proposes hypotheses H1–H4.

H1: *STR is associated with FV.*

H2: *OPR is associated with FV.*

H3: *FIR is associated with FV.*

H4: *COR is associated with FV.*

Disclosure Quality on Firm Information

High-quality disclosure reflects the overall standard of corporate information provided and enhances the attractiveness of capital markets for investors seeking transparent and dependable data (Dewiyanti, 2025; Ho et al., 2023). Investors generally prefer disclosures of a higher standard, as they interpret such information as evidence of sound corporate performance, effective financial management, and robust governance practices. Consequently, comprehensive and transparent reporting is considered an essential component of good corporate governance, as it conveys a complete and accurate representation of a firm's operations without concealing material details (Dewiyanti et al., 2025).

Reliable disclosure not only ensures that report users have access to accurate information for informed decision-making (Tran Thanh Thuy, 2025) but also functions as a safeguard against fraudulent practices (Li et al., 2025). Nonetheless, information asymmetry may persist when investors are unable to access the full extent of corporate information. Such disparities can result either from deliberate concealment or from inadvertent omissions (Boubaker et al., 2020). The literature presents mixed evidence regarding the consequences of disclosure quality, with studies reporting both positive and negative effects on reducing information asymmetry and improving organisational performance (Boubaker et al., 2020; Tran Thanh Thuy, 2025). To evaluate disclosure quality, the DQL is calculated as the ratio of Actual Disclosure Scores (%) to Maximum Disclosure Scores. According to Syrová and Špička (2023), when applied within the framework of ERM, certain elements such as STR are particularly relevant to large firms, similar to the role of FIR.

Control Variable and Its Effect to Firm Value

Firm Size (FS) and Firm Age (FA)

Control variables play a vital role in determining FV and are essential when examining the relationship between risk-management disclosure (RMD) and FV. In this study, the selected control variables are FS, FA, CFA, NP, ROA, and D/E. Incorporating these measures strengthens both the comprehensiveness and the validity of the analysis.

FIRM SIZE (FS) AND FIRM AGE (FA)

FS is generally measured by the total assets of a firm, expressed as the natural logarithm of total assets (Shalit et al., 1977). Quantitative analysis examined the extent to which FS and FA influence FV. Their results indicated that FS has a positive effect on FV, whereas FA does not demonstrate a similar impact. These relationships were observed in the context of corporate social responsibility disclosure and environmental performance. The study further highlighted that FS and FA are indicative of a firm's long-term stability and credibility (Kristi, 2020). Supporting this, Bercovitz et al. (2007) reported that larger firms tend to exhibit greater operational strength and credibility, with results showing statistical significance. Drawing upon these findings, the present study proposes the following hypotheses.

H6: *FS is associated with Stock Price.*

H7: *FA is associated with Stock Price.*

Company of Financial Auditor (CFA)

Wijaya and Langgeng (2020) examined the influence of CFA on FV in companies listed on the Indonesian Stock Exchange. The study revealed that CFA quality positively affects FV, as higher-quality auditors in the Indonesian capital market are perceived to enhance the credibility of financial reporting. Such auditors are expected to reduce agency costs, address information asymmetry, and thereby strengthen FV. Firms are therefore advised to employ high-quality auditors as a strategic measure to improve their market valuation. The distinction between Big 4 and non-Big 4 auditing firms has also been shown to have a positive effect on FV within listed manufacturing firms. In a similar vein, Cameran et al. (2022) reported that CFA consistently influences FV in the United Kingdom across individual auditors, audit firms, and audit partners. This outcome indicates that when audit standards are consistently applied, quality variations across auditors and firms should theoretically diminish. Based on these findings, the present study sets out the following hypothesis.

H8: *CFA is associated with Stock Price.*

Net Profit (NP)

Hussein and Nounou (2022) reported that there is no significant distinction between firms with FR and those without FR, particularly concerning NP, which plays a central role in forecasting stock returns and, consequently, influences stock price. The acceptance of the hypothesis regarding the relationship with FV was confirmed by the MRA results, which demonstrated a significant association. Nonetheless, within the examined sample, FR and NP were found to exert a significant impact on FV. This suggests that differences in the level of information disclosure may arise depending on the efficiency measures employed. Accordingly, the following hypothesis is proposed.

H9: *NP is associated with Stock Price.*

Return on Asset (ROA) and Return on Equity (ROE)

ROA and ROE are key ratios that assess how effectively a company transforms its assets, equity, or sales into profit. Kristi (2020) observed that higher environmental performance and CSR disclosure were associated with lower ROA and ROE, although these outcomes were statistically insignificant in relation to FV. Conversely, Bercovitz et al. (2007) indicated that insufficient CSR practice adversely affects investment decisions and, in turn, reduces FV. While their calculation of FV applied the formula $(\text{Market Value of Equity} + \text{Total Debt}) / \text{Total Assets}$, the present study adopts stock price as the measure of FV. In line with these insights, the following hypotheses are proposed.

H10: *ROA is associated with Stock Price.*

H11: *ROE is associated with Stock Price.*

Debt/Equity Ratio (D/E)

The D/E ratio, commonly referred to as leverage, represents the extent to which a company relies on debt to finance its assets and enhance shareholder returns. This ratio is frequently employed as a control variable in studies that analyse corporate data and its influence on FV (Omoriegbe, 2025). Empirical findings, however, present both positive and negative associations between D/E, FV, and dividend distributions (Omoriegbe, 2025). The link between dividends per share and D/E is often interpreted as a monitoring tool intended to minimise agency costs, which could otherwise constrain dividend policies and diminish FV. Fatima (2022) further substantiated the negative relationship in their examination of the Saudi Arabian stock market. Drawing upon these findings, the current study advances the following hypothesis.

H12: *D/E is associated with Stock Price.*

Disclosure Quality on Firm Information

High-quality disclosure signifies the reliability of corporate information and enhances the attractiveness of firms to investors seeking greater transparency in operations (Dewiyanti, 2025; Ho et al., 2023). According to Tran Thanh Thuy (2025), such disclosure provides report users with dependable data, which underpins effective decision-making processes. Li et al. (2025) further observed that comprehensive and accurate disclosure can function as a safeguard against fraud and financial risk. Nonetheless, Boubaker et al. (2020) cautioned that inadequate or selectively communicated information may generate information asymmetry, whether through deliberate concealment or unintentional omission. A comparison of findings also highlights important nuances. For instance, Ho et al. (2023) demonstrated that transparency and structured disclosure rating systems reduce default risk, reporting an overall negative association between disclosure and default risk. In contrast, the present study identifies differentiated relationships between particular disclosure categories

(STR, OPR, FIR, COR) and FV. Such discrepancies are likely shaped by contextual characteristics of capital markets and the approaches employed for variable measurement. Ultimately, the study supports the view that FV, proxied by share price, may be significantly affected by the quality of corporate disclosures.

Good Corporate Governance and Thai 56-1 Report

In 2002, the Thailand Securities and Exchange Commission (SEC) introduced the Principles of Good Corporate Governance for Listed Companies, which were subsequently revised in 2012 and 2017 (Nottage, 2021). These revisions aimed to strengthen governance practices, highlight effective risk management, and reinforce internal control mechanisms. A key component of the revisions was the mandatory disclosure of governance practices and FRMD. Such disclosure is intended to improve the functioning of the capital market, foster investor confidence, and support more efficient capital mobilisation from both domestic and international investors (Friedman, 2019; Ho et al., 2023; Pinheiro et al., 2025). To promote practical adoption, the principles were aligned with the framework of the Committee of Sponsoring Organizations (COSO) and its COSO ERM model (ERM., 2023). The COSO ERM framework provides a comprehensive tool to help firms achieve strategic objectives by enhancing the overall structure and effectiveness of risk management (ERM., 2023).

Firms listed on the Thai capital market are required to submit relevant information through their annual disclosure report, known as the Thai 56-1 report. Reporting is supported by platforms such as SETSMART (SET Market Analysis and Reporting Tool), company websites, the SEC portal, and the Stock Exchange of Thailand (SET) website (<http://www.set.or.th>), which function as central sources for information exchange and stakeholder engagement. Al Natour et al. (2022) highlighted the importance of firms disclosing information to both the market and investors, reflecting the expectation that such practices can positively influence FV. Nonetheless, the extent of disclosure remains inconsistent, as it is largely determined by each company's capacity and willingness to provide comprehensive reporting.

RESEARCH METHODOLOGY

This study employs publicly disclosed corporate data from companies listed on the stock exchange, classified as secondary data. The disclosure of such information is governed by securities regulatory authorities, which enhances its reliability and credibility. The research adopts a well-established methodological framework and utilises advanced analytical techniques to derive robust inferences. This approach is

widely recognised and applied across disciplines including business administration, accounting, economics, and related academic fields (Pinheiro et al., 2025).

Population and Sample Scope

The population and sample for this study consist of Thai firms listed on the MAI, with particular emphasis on SMEs and innovation-oriented enterprises in Thailand. The MAI has eased certain listing requirements to provide opportunities for SMEs that do not meet the criteria for listing on the SET. This initiative also supports the venture capital sector and seeks to expand the number of publicly listed firms by offering an alternative platform for long-term fundraising for businesses with high growth potential. The study employs purposive sampling, selecting companies from all industry sectors except the financial sector. Excluded from the sample are companies undergoing rehabilitation, those subject to delisting, and firms whose fiscal year-end does not coincide with 31 December. Following the application of these criteria, the final sample comprises 142 companies distributed across seven industry groups, yielding 710 firm-year observations, with each One Report serving as a unit of analysis. The distribution of the sample across industry groups is as follows: SERVICE (28.2%) constitutes the largest segment, followed by INDUS (Industrial Product, 23.2%) and PROPCON (Real Estate & Construction, 20.4%). Smaller segments include CONSUMP (Consumer Product, 7.8%), TECH (Technology, 7.8%), RESOURC (Resources, 7.0%), and AGRO (Agriculture & Food Industry, 5.6%).

Data Collection Process

The study utilises secondary data obtained from the Thai 56-1 One Report of companies listed on the MAI of the Stock Exchange of Thailand. These reports are widely acknowledged and frequently employed for diverse academic analyses and research purposes (Feng et al., 2025). Data were systematically gathered from reliable and authoritative sources, including the Stock Exchange of Thailand (<https://www.set.or.th>), SETSMART (<https://www.setsmart.com>) and The Securities and Exchange Commission, Thailand (<https://www.sec.or.th>). The research spans a five-year period from 2017 to 2021, producing a total of 710 firm-year observations for analysis.

Data Analysis

The data were analysed by classifying the variables into three primary groups and employing Multiple Regression Analysis (MRA) using the following model structure:

Independent Variable: Financial Risk Management Disclosure (FRMD)

FRMD was evaluated using content analysis of the Thai 56-1 reports, with attention directed towards disclosures within four principal risk components:

STR: Covers disclosures associated with risks to business strategy, competitive positioning, industry evolution, and long-term planning. For example, this includes information on market share risks, modifications to business models, or strategic alliances.

OPR: Encompasses disclosures related to daily operational challenges, supply chain management, and resource allocation. Examples include production interruptions, workforce shortages, or failures in IT systems.

FIR: Pertains to disclosures on financial risks such as liquidity, credit, and market exposures. Illustrative examples include strategies for managing foreign exchange risk, debt structuring, or interest rate hedging.

COR: Involves disclosures concerning regulatory adherence, legal obligations, and governance frameworks. This includes data on regulatory changes, litigation matters, or compliance review programmes.

Content analysis was conducted using a systematic checklist approach, with each Thai 56-1 report independently examined by two trained coders. Inter-coder reliability was assessed using Cohen's Kappa coefficient ($k = 0.87$), indicating a high level of agreement. Any discrepancies between coders were resolved through discussion with a third researcher to ensure consistent application of coding criteria. A binary scoring system was employed to minimise subjectivity, with a score of 5 assigned when a company disclosed a specific risk item and a score of 0 assigned in cases of non-disclosure (Suwansin, 2019). This approach provided a reliable and objective evaluation of FRMD across all sample companies.

Disclosure Quality Level (DQL) Calculation

The DQL was calculated using the formula: $DQL = 100 \times ADS / MDS$. ADS represents the total score obtained by a company for disclosures across all risk categories, while MDS denotes the maximum possible score if all risk items were disclosed. The resulting DQL percentage was classified according to the criteria outlined in the Corporate Governance Report for Thai Listed Companies (CGR) as established by the Office of the SEC: 90–100% = Excellent, 80–89% = Very Good, 70–79% = Good, 60–69% = Satisfactory, 50–59% = Pass, and below 50% = N/A. This classification system facilitates a consistent assessment of disclosure quality across companies and provides a benchmark aligned with recognised governance standards within the Thai capital market.

Dependent Variable: Firm Value (FV)

FV is determined using the stock price, which is consistent with prior research on the effects of disclosure (Suwansin, 2019). Specifically, the share price at the end of May

in each year of the study is employed. This date coincides with the regulatory deadline for submission of annual reports as stipulated by the Office of the SEC (Hweanthongkum, 2020). The choice of 31 May ensures that complete risk disclosure information has been made available to the market, providing investors sufficient time to process the information and incorporate it into their valuation decisions.

Control Variables

To examine the relationship between FRMD and FV, control variables were incorporated based on theoretical rationale and evidence from prior studies, as presented in Table 1.

Table 1: Description and Calculation of Control Variables Used in the Study

Control Variable	Description and Formula
Firm Size (FS)	Calculated as: $FS = \text{Log}(\text{Total Assets})$
Firm Age (FA)	Refers to the number of years the company has been listed on the Stock Exchange of Thailand
Characteristics of Financial Auditors (CFA)	Auditor reputation is scored as: “1” if the company uses one of the Big 4 audit firms (PwC, Deloitte, EY, or KPMG) and “0” if a non-Big 4 audit firm is used
Net Profit Margin (NP)	Calculated as: $NP (\%) = \text{Net Profit} / \text{Net Sales}$
Return on Assets (ROA)	Calculated as: $ROA = \text{Net Profit} / \text{Total Assets}$
Return on Equity (ROE)	Calculated as: $ROE = \text{Net Profit} / \text{Shareholders' Equity}$
Debt to Equity Ratio (D/E)	Calculated as: $D/E \text{ Ratio} = \text{Total Liabilities} / \text{Shareholders' Equity}$

Statistical Model

MRA was employed to investigate the relationship between FRMD and FV, as it is appropriate for assessing the influence of multiple independent variables on a continuous dependent variable while simultaneously controlling for potential confounding factors. The model specifications are presented as follows:

$$FV_{it} = \beta_0 + \beta_1 STR_{it} + \beta_2 OPR_{it} + \beta_3 FIR_{it} + \beta_4 COR_{it} + \beta_5 FS_{it} + \beta_6 FA_{it} + \beta_7 CFA_{it} + \beta_8 NP_{it} + \beta_9 ROA_{it} + \beta_{10} ROE_{it} + \beta_{11} D/E_{it} + \epsilon_{it}$$

Whereas, $\beta_0, 1, 2, \dots, n$ = Constants and Coefficient of Variables ϵ_{it} = Error Value

ADDRESSING ENDOGENEITY

To address potential endogeneity concerns, particularly reverse causality between FV and disclosure quality, several robustness tests were conducted to ensure that FRMD

precedes changes in firm value. These tests included: (1) Two-stage least squares (2SLS), (2) Propensity score matching to correct for potential selection bias, and (3) Fixed effects models to account for unobserved time-invariant firm-specific characteristics. Collectively, these approaches enhance causal inference by mitigating endogeneity arising from omitted variables, simultaneity, and measurement errors.

MODEL ASSUMPTIONS AND DIAGNOSTICS

Prior to conducting the analysis, the data were examined for compliance with the assumptions of MRA. Multicollinearity was assessed using Variance Inflation Factors (VIF), with all values below 5, indicating an acceptable level of multicollinearity. Heteroscedasticity was evaluated using White's test, and heteroscedasticity-robust standard errors were applied in the MRA. Normality was assessed via the Shapiro-Wilk test, which revealed non-normal distributions. Linearity was examined through scatterplots of residuals to confirm a linear relationship. These diagnostic procedures ensured the validity of the statistical inferences and the reliability of the study's findings.

RESEARCH RESULT

The study results are presented as follows:

Descriptive Result

The study analysed FRMD across 439 firm-year observations and found the overall disclosure level to be 79.45%, which is categorised as "Good." Among the 142 MAI-listed companies, only 41 firms (28.87%) disclosed risk management information across all four dimensions. In terms of disclosure quality levels, 46 companies (32.39%) were rated "Excellent," 11 companies (7.75%) "Very Good," 25 companies (17.61%) "Good," 19 companies (13.38%) "Satisfactory," 17 companies (11.97%) "Pass," and 24 companies (16.90%) were classified as "N/A." This indicates that while a substantial proportion of companies achieved high-quality disclosure, a significant number of firms failed to meet the expected standards, reflecting an imbalance in FRMD practices.

When examined by risk category, STR was disclosed by 126 companies with an average score of 88.73%, receiving a "Very Good" rating. OPR disclosures were reported by 121 companies, averaging 85.21% and also rated "Very Good." FIR disclosures appeared in 113 companies, with an average score of 79.58% and rated "Good," while COR disclosures were the lowest, reported by 79 companies with an average score of 55.63%, rated "Pass." The average FRMD across the four dimensions varied by industry group, with AGRO at 83.1%, CONSUMP at 84.5%, INDUS at 72.4%, PROPCON at 81.0%, RESOURC at 73.0%, SERVICE at 77.8%, and TECH at 73.2%. The overall FRMD percentage for all MAI-listed companies was 77.3%, demonstrating

significant variation in disclosure levels across both risk types and industry sectors as shown in [Table 2](#).

Table 2: Descriptive Statistics of Data Management Information Disclosure of MAI Listed Companies

Data Management Information Disclosure	n	%	Overview of Disclosure	
Risk management disclosure is complete across all four dimensions.	41	28.87		
Risk management disclosure is incomplete across all four dimensions.	101	71.13		
Total	142	100		
Excellent	46	32.39		
Very Good	11	7.75		
Good	25	17.61		
Satisfactory	19	13.38		
Pass	17	11.97		
N/A	24	16.90		
Total	142	100		
STR	126	88.73	Very Good	
OPR	121	85.21	Very Good	
FIR	113	79.58	Good	
COR	79	55.63	Pass	
FRMD	439	79.45	Good	
Industrial Group	STR	OPR	FIR	COR
1. AGRO	100.0	92.5	92.5	47.5
2. CONSUMP	87.3	100.0	90.9	60.0
3. INDUS	83.6	73.3	86.7	46.1
4. PROPCON	95.2	82.1	86.2	60.7
5. RESOURC	80.0	84.0	82.0	46.0
6. SERVICE	90.0	90.0	67.0	64.0
7. TECH	87.3	90.9	61.8	52.7
Total	88.73	85.21	79.58	55.63

Multiple Regression Analysis (MRA)

MRA was employed to investigate the relationship between FRMD components (STR, OPR, FIR, and COR) and FV among MAI-listed companies in Thailand. The analysis incorporated control variables, namely FS, FA, CFA, NP, ROA, ROE, and D/E, to account for potential confounding effects. Prior to running the MRA, Pearson's correlation analysis was conducted to examine the independence of variables and to verify compliance with the preliminary assumptions of the regression analysis. The results of this correlation analysis are presented in [Table 3](#).

Table 3: Pearson' Correlation Coefficients

Variable	STR	OPR	FIR	COR	CFA	FS	FA	NP	ROA	ROE	D/E	VIF
STR	1											1.100
OPR	.031	1										1.129
FIR	.146**	.104**	1									1.091
COR	.204**	.292**	.210**	1								1.197
CFA	.091**	-.088*	-.040	-.019	1							1.063
FS	.037	.009	.083*	-.004	.077*	1						1.025
FA	-.121*	.056	-.058	-.067*	-.058	-.103*	1					1.058
NP	.035	.007	-.010	.074*	-.024	-.020	-.058	1				1.098
ROA	.017	.076*	.122**	.088**	.156**	.029	-.147*	.275**	1			1.396
ROE	-.013	.026	.015	.075*	.085*	.007	-.038	.149**	.436**	1		1.252
D/E	.115**	.072*	-.009	-.046	.024	.016	.023	-.018	-.021	-.084*	1	1.036
FV	-.070*	.103**	.003	-.017	.153**	.006	-.033	.075*	.272**	.163**	-.011	-

** . Correlation is significant at the 0.01 level (1-tailed).
* . Correlation is significant at the 0.05 level (1-tailed).

Based on the Pearson's Correlation Coefficients and Variance Inflation Factor (VIF) analyses conducted for the variables in this study, no correlations were observed that would indicate multicollinearity issues. Consequently, the dataset was considered suitable for MRA. The results of the MRA are presented in [Table 4](#).

Table 4: Multiple Regression Analysis of FRMD and FV of Thailand MAI Listed company

Variable	Model 1				Model 2			
	B	Beta	t	Sig	B	Beta	t	Sig
(Constant)	3.160	-	4.177	.000**	3.123	-	3.714	.000**
STR	-1.068	-.067	-1.740	.082	-1.293	-.082	-2.184	.029*
OPR	1.654	.117	2.989	.003**	1.575	.113	2.963	.003**
FIR	.105	.008	.219	.826	-.194	-.016	-.424	.671
COR	-.403	-.040	-.989	.323	-.442	-.045	-1.131	.259
CFA	-	-	-	-	1.219	.121	3.276	.000**
FS	-	-	-	-	-.000	-.008	-.210	.834
FA	-	-	-	-	-.006	-.015	-.411	.681
NP	-	-	-	-	.000	.012	.318	.751
ROA	-	-	-	-	.059	.222	5.244	.000**
ROE	-	-	-	-	.004	.053	1.321	.187
D/E	-	-	-	-	-.001	-.006	-.160	.873
R Square			.017		.109			
Adj R Square			.012		.095			
F-Value (Sig)			3.146 (.016*)		7.445 (.000**)			
N			710		710			

Remark** : Found at a significance level of 0.01. * Found at a significance level of 0.05.

Model 1 presents the results of the MRA investigating the relationship between FRMD (STR, OPR, FIR, and COR) and FV among Thailand MAI-listed companies. The

analysis shows that FRMD accounts for 1.2% of the variance in FV, which is statistically significant at the 0.01 level. Examining the individual components of FRMD, only OPR exhibits a statistically significant positive effect on FV (Beta = 0.117, $t = 2.989$, Sig = 0.003**). STR, FIR, and COR do not show statistically significant effects, although FIR demonstrates a positive directional tendency, while STR and COR display negative directional tendencies that could influence FV.

Model 2 extends this analysis by incorporating control variables, including FS, FA, CFA, NP, ROA, ROE, and DE. In this extended model, FRMD explains 9.5% of the variance in FV, remaining statistically significant at the 0.01 level. At the component level, STR exhibits a statistically significant negative effect on FV (Beta = -0.082, $t = -2.184$, Sig = 0.029), while OPR maintains a statistically significant positive effect (Beta = 0.113, $t = 2.963$, Sig = 0.003**). Among the control variables, CFA (Beta = 0.121, $t = 3.276$, Sig = 0.000**) and ROA (Beta = 0.222, $t = 5.244$, Sig = 0.000**) demonstrate statistically significant positive impacts on FV.

Hypothesis Summary

Based on the Hypothesis Summary (Table 5), the statistically supported (accepted) hypotheses are:

- H1: STR is negatively associated with FV, indicating that higher STR disclosure corresponds with a decrease in stock price.
- H2: OPR is positively associated with FV, suggesting that increased OPR disclosure is linked to higher stock price.
- Among the control variables, H8: CFA and H10: ROA demonstrate positive relationships with FV, implying that increases in CFA and ROA are associated with higher stock price.

Table 5: Hypothesis Summary

Hypothesis	Hypothesis Description	Result	H-Summary
H1	STR is associated with Stock Price	Negative	Accepted
H2	OPR is associated with Stock Price	Positive	Accepted
H3	FIR is associated with Stock Price	No Relationship	Rejected
H4	COR is associated with Stock Price	No Relationship	Rejected
H6	FS is associated with Stock Price	No Relationship	Rejected
H7	FA is associated with Stock Price	No Relationship	Rejected
H8	CFA is associated with Stock Price	Positive	Accepted
H9	NP is associated with Stock Price	No Relationship	Rejected
H10	ROA is associated with Stock Price	Positive	Accepted
H11	ROE is associated with Stock Price	No Relationship	Rejected
H12	D/E is associated with Stock Price	No Relationship	Rejected

Conversely, the statistically unsupported (rejected) hypotheses are:

- H3: FIR shows no significant association with FV, indicating no meaningful impact

on stock price.

- H4: COR exhibits no significant relationship with FV and is therefore rejected.

Among the control variables, H6: FS, H7: FA, and H9: NP do not display significant relationships with FV, leading to the rejection of these hypotheses.

DISCUSSION AND CONCLUSION

Synthesis of Key Findings

This study analysed the level of FRMD and its impact on FV among 142 companies listed on the MAI in Thailand over the period 2017–2021. Overall, FRMD was rated at a “Good” level (79.45%), although notable variations were observed across both risk categories and individual firms. Only 28.87% of the sampled companies disclosed all four risk dimensions. In terms of DQL, 32.39% of firms attained an “Excellent” rating, whereas 16.90% were classified as “N/A,” reflecting considerable differences in disclosure practices. When considered by risk category, STR and OPR achieved “Very Good” ratings (88.73% and 85.21%, respectively), FIR was rated “Good” (79.58%), while COR lagged with a “Pass” rating (55.63%). MRA results indicated that the components of FRMD had differential effects on FV: STR exhibited a significant negative relationship, OPR demonstrated a significant positive relationship, and FIR and COR did not show statistically significant effects. Among the control variables, CFA and ROA were positively associated with FV at a statistically significant level.

Comparison with Previous Research

The Negative Relationship between STR and Firm Value

The observed negative relationship between STR and FV appears to contradict certain theoretical expectations but aligns with several empirical studies. This finding differs from (Tunpornchai & Hensawang, 2018), who reported a positive effect of STR on FV among SET-listed firms. This variation may be attributed to differences in firm size, as their sample predominantly comprised large firms, whereas the present study focuses on SMEs listed on the MAI. Syrová and Špička (2023) noted that many small firms engage in what they term “pretend ERM,” particularly concerning STR. Their findings suggest that MAI-listed companies may disclose STR activities primarily to satisfy regulatory obligations rather than to genuinely exhibit strategic risk management competence. Investors may interpret such disclosures as indicators of latent strategic weaknesses rather than effective risk governance, resulting in a negative influence on FV (Connelly et al., 2011; Spence, 1973).

This outcome is also consistent with Signalling Theory (Connelly et al., 2011; Spence, 1973), albeit in a manner indicating that investors perceive extensive STR disclosures as negative signals regarding the firm’s prospective performance. (Mansour et al., 2025)

reported that uncertainty concerning strategic direction can significantly undermine investor confidence, particularly in emerging markets such as Thailand's MAI, where information asymmetry is more pronounced. Finally, the negative association may reflect the specific characteristics of Thailand's MAI, which is predominantly composed of SMEs with limited resources. These firms often encounter challenges in implementing comprehensive STR and instead prioritise OPR and FIR management. Consequently, investors may be less inclined to value firms that appear to struggle with strategic issues, rather than demonstrating proactive and forward-looking risk management practices (Dvorsky et al., 2021).

The Positive Impact of OPR on Firm Value

The positive association between OPR and FV corroborates the observations of (Hoyt & Liebenberg, 2011), who reported similar patterns across different market contexts. This indicates that investors assign considerable importance to transparency in relation to OPR. The beneficial impact of OPR on FV can be interpreted through several theoretical lenses. Under the framework of Agency Theory (Jensen, 1976), comprehensive OPR disclosures reduce information asymmetry between management and shareholders, thereby lowering agency costs. Greater transparency allows investors to more accurately evaluate managerial competence in managing daily operational challenges, which enhances investor confidence and positively influences firm valuation. OPR is likely regarded as more concrete and actionable than STR, particularly for firms listed on the MAI. DQL largely depends on a company's reporting capabilities, and that OPR-related information tends to be more directly observable and verifiable than STR-related disclosures. Furthermore, existing research indicates that investors in the MAI may place higher relevance on a firm's ability to manage short-term operational risks rather than long-term strategic uncertainties, which could explain the stronger effect of OPR disclosures on FV. This finding examined SET-listed firms, which are typically larger, resource-rich organisations with differing investor expectations and approaches to risk management.

NON-SIGNIFICANT FINDINGS FOR FIR AND COR

The lack of a statistically significant relationship between FIR, COR, and FV presents a notable divergence from prior literature. (Tunpornchai & Hensawang, 2018) reported a significant positive effect of FIR on FV among SET100 firms in Thailand, suggesting that valuation of risk disclosure may differ between large firms and SMEs. (Ho et al., 2023) also highlighted that COR can mitigate default risk. The absence of significance in the present study may be explained by several factors. Firstly, as noted by (Dewiyanti, 2025), the relationship between DQL and FV is often complex and mediated by intervening variables. In an SME context, investors may prioritise overall disclosure quality rather than the specifics of FIR and COR content. Additionally, the binary scoring methodology employed in this study may not fully capture the nuances of

disclosure quality. Secondly, the relatively low level of COR disclosure, with only 55.63% of firms meeting the “Pass” threshold, indicates that COR practices remain underdeveloped among MAI-listed companies. This underdevelopment may account for the absence of a clear association with FV, as the comprehensiveness or quality of such disclosures may not yet be sufficient to affect investor perceptions meaningfully. Lastly, from the perspective of Information Asymmetry Theory (Akerlof, 1970), the nonsignificant findings could suggest that investors in the MAI already access FIR and COR information via alternative sources, or that these disclosures are not perceived as sufficiently credible to influence firm valuation decisions.

THE SIGNIFICANCE OF CONTROL VARIABLES

The positive associations between CFA, ROA, and FV align with the findings of Wijaya and Langgeng (2020) and Cameran et al. (2022), who highlighted the value-enhancing effects of engaging reputable auditors. These results confirm that, even within the context of the MAI, the credibility signal conveyed by a recognised audit firm positively influences investor perceptions and enhances firm valuation. Concerning ROA, it exhibited a statistically significant effect, in contrast to other performance indicators such as ROE and NP, which were not significant. This suggests that investors in the MAI may place greater emphasis on the efficiency of asset utilisation rather than on profitability ratios or equity-based returns. The finding underscores investor concerns regarding the effective management of limited resources, which is particularly relevant for small-sized firms. These results are consistent with the observations of Kristi and Yanto (2020) and reinforce the importance of demonstrating efficient resource use in SMEs.

THEORETICAL AND PRACTICAL IMPLICATIONS

Theoretical Implications

The present study contributes to the theoretical understanding of FRMD in several meaningful ways. Firstly, it provides empirical evidence on the application of Signalling Theory within an emerging market context, indicating that distinct categories of risk disclosures convey differing signals to investors. Specifically, OPR functions as a positive signal, whereas STR serves as a negative signal within the MAI context, thereby demonstrating the limitations of applying Signalling Theory in a simplistic manner to FRMD practices. Secondly, the findings enhance the growing body of literature that emphasises the contingent nature of risk disclosure effectiveness. This aligns with the integrative framework proposed by Santoso et al. (2023), which combines Signalling Theory, Agency Theory, and Information Asymmetry Theory. The present results support this model by illustrating that different risk categories can exert distinct theoretical influences on FV. Thirdly, the research extends the application of risk disclosure theories to SMEs operating in emerging markets, highlighting how

resource constraints and market-specific conditions can modify theoretical expectations derived from studies of larger firms in more developed markets. These insights underscore the importance of situating FRMD policies within the structural limitations of smaller firms and less mature capital markets.

CONCLUSION

The study provides empirical insights into the complex relationship between FRMD and FV within the MAI in Thailand. The results indicate that distinct categories of risk disclosure exert differential effects on FV: OPR disclosures are positively associated with FV, whereas STR disclosures are negatively associated. These nuanced relationships emphasise the importance of examining the content of disclosures while considering the market context to evaluate the effectiveness of risk communication. The findings suggest that investors in the MAI place greater value on tangible and actionable information, such as that provided through OPR, while STR disclosures may be interpreted as reflecting strategic uncertainty or managerial inadequacy. This distinction carries significant implications for corporate managers seeking to optimise their risk communication strategies, as well as for regulators aiming to enhance market transparency without imposing disclosure requirements that could inadvertently reduce firm value.

FUTURE RESEARCH SUGGESTIONS

Further research is required to explore these relationships across varied market environments and to establish more sophisticated approaches for evaluating DQL beyond simple disclosure presence. As emerging markets continue to evolve and SMEs gain greater access to capital markets, the complexities of FRMD will remain a critical focus for both academic investigation and practical application.

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