

Research Article

Survival of ASEAN Firms: Understanding Profitability, Liquidity, and Solvency Dynamics During Financial Distress

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ORCIDIzza Ashsifa: <http://orcid.org/0009-0002-0359-402X>**Abstract.**

In the dynamic landscape of business, a firm's financial sustainability is paramount for long-term growth and operational stability. Key components of a firm's financial structure include profitability, liquidity, and solvency. This study examines their impact on financial distress within the ASEAN region from 2012 to 2021, utilizing a sample of 44,800 observations. The findings reveal that profitability and liquidity exhibit a negative relationship with financial distress, suggesting that firms with higher profitability and liquidity are less susceptible to financial difficulties. Conversely, solvency demonstrates a positive association with financial distress, indicating that firms with greater solvency may face heightened risks of encountering financial distress. These findings hold significant implications for corporate decision-makers, financial analysts, and policymakers. Understanding the interplay among profitability, liquidity, and solvency enables firms to develop robust financial strategies to mitigate the likelihood of financial challenges. This research contributes valuable insights to the discourse on managing financial risks, offering guidance for prudent financial decision-making amidst evolving business landscapes.

Keywords: profitability, liquidity, solvency, financial distress

1. Introduction

The firm's financial sustainability is crucial to ensuring long-term growth and operational continuity in the midst of changing firm conditions. The firm was created to sustain long-term operations, and one goal was maximizing earnings. Effective firm management is critical in the ever-changing global economy. Firms must continually improve their performance across all industries to keep ahead of rising commercial competition. In today's world, firm competition is fierce, needing ongoing innovation for survival and competitiveness. The ability of a firm to compete directly is determined by its performance. Firms that are unable to keep up with the competition may experience steady losses, resulting in financial distress. (1) defines financial distress as a period of worsening in financial situations before bankruptcy or liquidation. Failure to address

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this issue swiftly can have serious ramifications for huge organizations, including the erosion of confidence among stakeholders and, in extreme situations, the possibility of bankruptcy.

A firm in a financial crisis faces the possibility of insolvency or corporate failure (2). A firm's inability to meet debt payment commitments, typically in conjunction with the absence of dividend payments to investors, is a strong indicator of financial distress (3). Sustained financial losses indicate the firm's demise from an economic standpoint. If the firm does not address this issue, it may face insolvency. Firms in financial distress have a history of not issuing dividends for more than a year and a net operating income that has been continuously negative over several years. Financial distress may arise when a firm cannot manage and stabilize its financial performance. This is due to his failure to market the product. As a result, the sales value falls (4). Sales declines resulted in lower operating income and a net loss for the year. Losses sustained due to capital shortages are caused by a decrease in the value of retained earnings, resulting in less total equity. If this pattern continues, the firm's liabilities exceed its total assets. This condition will cause financial strain, and the firm will go bankrupt if suitable action is not taken (5). (6) brought attention to an alternative viewpoint that quantifies financial distress using the interest coverage ratio. In the context of firm performance and financial indicators, these varied criteria offer insights into various aspects of financial distress.

Financial distress has been exacerbated by several economic issues that have affected ASEAN nations. One noteworthy event is the increased volatility of international markets, which affects the export-oriented economies of several ASEAN members. The financial stability of enterprises has been impacted by fluctuations in commodity prices, currency exchange rates, and trade disputes on a global scale, which have resulted in greater risk and uncertainty (7). Several firms have experienced financial distress that has resulted in bankruptcy, including PT. Citra Maharlika Nusantara Corpora Tbk, PT. Merpati Nusantara Airlines, PT. Humpuss Sea Transport Pte. Ltd, PT. Telekomunikasi Indonesia, Mobile-8 Telecom, Tbk, and PT. Dwi Aneka Jaya Kemasindo Tbk. The difficulties are present in many different industries, but they are most acute in the textile and apparel subsector. Several reasons have made firm worries more critical, such as rising gasoline prices (BBM), energy tariffs, telephone tariffs, transportation expenses, and growing raw material prices. Due to its substantial reliance on the sale of goods like rubber and palm oil, Malaysia has been vulnerable to changes in the price of commodities globally and in exchange rates. Global economic shocks like the COVID-19 epidemic and the 2008 financial crisis have impacted Thailand, a major player in the tourism industry. This has resulted in financial issues for enterprises in the

hotel and tourism sectors. The situation has been made more complex by the increase in imports of textiles and textile products from the ASEAN region, especially the China Free Trade Area, which has had a major effect on this industry. The intricate situation highlights the increasing financial strain that these industries' firms are facing.

By evaluating a firm's capacity to produce a net profit concerning its sales, assets, and share capital, the profitability ratio is an effective instrument for forecasting financial distress circumstances. Profitability assesses a firm's ability to turn a profit utilizing its assets, showing how effectively and efficiently assets are used (12). Return on Assets (ROA) is proposed by (13) as a measure of a firm's profitability. When assets are used effectively, costs can be decreased, money can be saved, and enough cash can be supplied for operations. Consequently, having enough money lessens the chance of financial distress.

Liquidity indicates a firm's ability to settle all short-term financial commitments when they mature using available current assets (14). (2) defines a firm's failure to meet its urgent responsibilities as an extreme condition. Liquidity issues may necessitate the sale of investments and assets, potentially resulting in bankruptcy and financial distress. The inability to meet obligations on time directly impacts creditors, particularly those linked with the firm's operations, such as suppliers (15). This condition can be a distress signal, producing delivery delays and product quality difficulties. The danger of financial trouble decreases if a firm can properly finance and settle its short-term obligations. The liquidity ratio, as measured by the Current Ratio, quantifies this capacity by comparing a firm's total current assets to its short-term liabilities (2,10).

The solvency ratio is a measure used to determine the extent to which a firm's assets are funded by debt, indicating its capacity to satisfy all of its short-term and long-term commitments in the event of dissolution (liquidation). Debt financing exerts a constant strain on the firm (16). emphasizes the importance of debt financing, stating that solvency indicates the percentage of firm assets supported by debt financing. A higher level of debt increases the likelihood of a firm experiencing financial distress and insolvency (15). The path to bankruptcy frequently begins with a point of default because the greater the quantity of debt, the greater the likelihood of default. This emphasizes the critical function of debt management in avoiding financial trouble and bankruptcy (17).

Signaling theory provides valuable insights into how companies use various signals to communicate information about their financial health, particularly in the context of potential financial distress (18). The interplay between signaling theory and key financial metrics such as profitability, liquidity, and solvency is evident in how companies strategically convey their conditions to external stakeholders. In times of financial distress,

firms with robust profitability may employ signaling mechanisms, such as increased dividends or share buybacks, to convey confidence in their ability to weather challenges. Likewise, maintaining healthy liquidity levels signals a company's capability to meet short-term obligations, alleviating concerns about immediate financial pressures. On the other hand, firms facing solvency issues might resort to signaling actions like debt restructuring or asset sales to reassure stakeholders about their commitment to addressing financial challenges (19).

Conversely, a lack of strategic signaling or inconsistent signals may raise suspicions among investors and creditors, potentially exacerbating the risk of financial distress. In this context, signaling theory underscores the importance of aligning financial metrics with deliberate signaling strategies to manage perceptions effectively. Understanding the intricate relationship between profitability, liquidity, and solvency within the signaling framework is essential for companies aiming to navigate financial distress successfully and maintain stakeholder confidence in their long-term viability (19).

This research problem centers on the need to comprehensively assess and understand the interconnectedness of profitability, liquidity, and solvency. How these elements influence each other during financial distress in the ASEAN context requires thorough examination. ASEAN countries often experience economic volatility influenced by various factors. The problem lies in understanding how these regional dynamics impact the financial health of firms and contribute to the challenges of survival during periods of financial distress. This study aims to examine and analyze the impact of financial ratios on financial distress in ASEAN firms over the period 2012-2021. The financial ratios presented in this study are profitability, liquidity, and solvency. The study aims to gain insights into ASEAN firms' financial health and stability during the specified timeframe by investigating these key financial metrics. This analysis could provide valuable information about the relationships between profitability, liquidity, solvency, and the occurrence of financial distress in the firm landscape of ASEAN countries over the past decade.

2. Method

This study employed a quantitative approach and utilized secondary data. The focus was on firms within ASEAN countries from 2012 to 2021. The research sample was selected using purposive sampling criteria, as detailed in Table 1. The total sample size for this study was 44,800. Multiple regression analysis was conducted using *Eviews* software.

TABLE 1: Sampling Selection.

Description	Total
ASEAN Firms in the Period 2012-2021	5139
Firms not publishing financial reports	(230)
Firms without complete research-related data	(309)
Total Firms	4480
Total research sample (4480 x 10 years)	44800

3. Result and Discussion

3.1. Results

Table 2 presents descriptive data for the financial distress, profitability, liquidity, and solvency variables. The financial distress variable has a mean value of 0.157526 and a standard deviation of 0.364301, with a maximum value of 1.000000 and a minimum value of 0.000000. Profitability has a mean of 2.970519 and a standard deviation of 11.37698. The liquidity variable has a mean of 2.943690 and a standard deviation of 5.802685. The solvency variable has a mean value of 117.3260 and a standard deviation of 189.6031.

TABLE 2: Descriptive Statistics.

Variables	N	Mean	Maximum	Minimum	Std. Dev.
Financial Distress	44,800	0.157526	1.000000	0.000000	0.364301
Profitability	44,800	2.970519	94.45000	-99.83000	11.37698
Liquidity	44,800	2.943690	99.79000	0.000000	5.802685
Solvency	44,800	117.3260	999.7300	-100.0000	189.6031

The Chow and Hausman tests were conducted to select the appropriate estimator for the regression analysis. The Chow test determines the better model between the fixed effect model and the common effect model. Table 3 presents the outcomes, with a fixed effect model selected if the probability value is less than 0.05.

TABLE 3: Chow Test.

Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.642331	(4479.28541)	0.0000
Cross-section Chi-Square	14929.933807	4479	0.0000

The statistical probability value of 0.0000 for the Chow test is displayed in Table 3, demonstrating that the probability value is less than 0.05 ($0,0000 < 0,05$). Thus, a fixed

effect model was used for the Chow test. The choice between a fixed effect model and a random effect model was then made using the Hausman test. A fixed effect model is chosen if the probability value is less than 0.05. A random effect model is selected if the probability value exceeds 0.05.

TABLE 4: Hausman Test.

Test Summary	Chi-sq. Statistics	Chi-sq. d.f.	Prob.
Cross-section random	9.076089	3	0.0283

Table 4 displays the statistical probability value of the Hausman test as 0.0283, indicating that the probability value is less than 0.05 ($0.0283 < 0.05$). The Hausman test has been conducted, and based on the results, the chosen panel data regression model is a fixed effect model (FEM). This decision indicates that the fixed effect model is deemed more appropriate for capturing the impact within the dataset under investigation after careful testing and consideration. The fixed effect model is well-suited for this analysis, considering the specific characteristics and variations observed in the panel data over the given period.

3.2. Coefficient of Determination (R^2) Test

Table 5 indicates that the coefficient of determination (R^2) is 0.364490. This result implies that 36.45% of the variations in financial distress can be explained by the variations in the solvency, liquidity, and solvency datasets included in the model. Conversely, 63.55% of the variations in firm performance are attributed to factors outside the model—other variables or influences not considered in the current analysis.

TABLE 5: Coefficient of Determination (R^2) and F-Test.

R-squared	0.364490	Mean dependent var	0.155160
Adjusted R-squared	0.264691	SD dependent var	0.362063
SE of regression	0.310469	Sum squared resid	2751.099
F-statistic	3.652245	Durbin-Watson stat	1.952269
Prob(F-statistic)	0.000000	Log Likelihood	5822.842

3.3. F-Test (Simultaneous Test)

The F-statistical test in Table 5 reports a probability value of 0.00000. This number denotes statistical significance because it is less than 0.05 ($0.00000 < 0.05$). Regarding

the F-test, profitability, liquidity, and solvency combined have a statistically significant effect on financial distress if the probability value is less than 0.05.

T-Test (Parsial Test)

The Fixed Effect Model (FEM) is the most suitable for this study. The following panel-data regression equation can be used to confirm the effect of profitability, liquidity, and solvency on financial distress, which can be expressed as follows:

TABLE 6: T-Test.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	0.173297	0.003749	46.23077	0.0000
Profitability	-0.000204	0.002060	-0.989980	0.0336
Liquidity	-0.000104	0.009052	-5.480395	0.0231
Solvency	0.000590	0.001230	0.479835	0.0000

Table 7 shows that the probability value of profitability is less than 0.05 (0.0336 < 0.05) with a t-statistic value of (-0.002060), indicating that profitability (ROA) has a negative effect on financial distress. If the probability value < 0.05, the independent variable significantly affects the dependent variable, then **H₁ is accepted**. Based on the probability value of 0.0231 (0.0231 < 0.05) and the t-statistic value of -5.480395, it can be concluded that the liquidity variable (CR) has a negative effect on financial distress. As a result, **H₂ is accepted**. In addition, the solvency variable displays a probability value of 0.0000 (0.0000 < 0.05) and a t-statistic value of 0.479835, indicating that solvency positively affects financial distress. As a result, **H₃ is accepted**.

3.4. Discussion

Based on the results, profitability has a negative effect on financial distress. The profitability ratio is a metric used to analyze a firm’s profit capacity. Profitability is proxied in this study by Return on Assets (ROA). Profits are used to quantify the efficiency with which corporate assets are used to generate profits in ROA. The greater the profit, the greater the ROA, and the more effectively assets are used to generate profits (11). This shows that the higher the ROA ratio, the more productive assets are at creating net income. As a result, the firm is able to pay off the loan. That is, the better the return on assets, the less likely the firm will face financial troubles. This is consistent with the signal theory, which states that it will bring positive news to users of the firm’s financial statements. Previous research has found that profitability negatively affects financial stress. This suggests that the bigger the firm’s profit, the less likely financial distress

will arise (11). According to other studies, profitability has a negative effect on financial distress (5,8).

The finding shows that liquidity has a negative effect on financial distress. The liquidity ratio is a ratio that assesses a firm's capacity to meet its short-term obligations on time. This study's liquidity ratio is the current ratio (CR). A low current ratio implies a liquidity concern, whereas a high current ratio suggests the firm has enough current assets to continue normal operations (11). According to signal theory, a firm can send positive and negative news to its users through its financial figures. The greater the CR, the more likely the firm is to meet its short-term obligations. In other words, the firm will not go bankrupt while providing good news to investors or users of financial statements. Previous studies have found that liquidity has a negative effect on financial distress (11,20,21).

The result shows that the solvency ratio reflects the debt-to-equity ratio in a firm's funding (11). This ratio describes the firm's ability to finance its capital through debt (8). The higher this ratio, the bigger the firm's financial risk. In other words, the solvency ratio demonstrates how much a firm owes concerning its equity. The total debt-to-equity ratio (DER) is used to calculate solvency. The greater the proportion of DER, the higher the financial risk for creditors and shareholders (22). As in signal theory, financial statements can provide users with positive and negative information. The firm will give information that investors or other parties can utilize to make decisions. Potential investors may invest in other firms if the financial statements look terrible. Previous research has discovered that solvency has a positive effect on financial distress. This means that the bigger the firm's debt funding, the greater the likelihood of financial problems. The reason for this is that the bigger the firm's obligation to pay the debt (23), the greater the firm's obligation to pay the debt. Other research has revealed that solvency has a favorable and significant effect on financial distress (8,10,11).

4. Conclusion

This study aims to examine and analyze the impact of financial ratios on financial distress in ASEAN firms over the period 2012-2021. The financial ratios presented in this study are profitability, liquidity, and solvency. The findings indicate that profitability and liquidity have a negative impact on financial distress, suggesting that increased profitability and liquidity are less likely to experience financial distress. Profitable firms have more resources to pay off debts and financial obligations. Profitability can indicate a firm's ability to create enough cash flow to pay off its debts, lowering the danger of bankruptcy.

Firms with limited liquidity often struggle to satisfy their financial obligations on time, potentially causing considerable financial stress. The inability to pay the debt or fulfil short-term cash needs can have severe consequences, such as a reduction in the firm's credibility, an increase in the cost of financing, or even the possibility of bankruptcy. The findings also indicate that solvency positively impacts financial distress, implying that firms with higher solvency may face an increased risk of encountering financial distress. Firms that rely heavily on debt to attain solvency may become more exposed to economic fluctuations. Large interest and principal payments might be a big burden if the firm is experiencing decreased sales or slower growth, which can result in increased financial distress.

This study provides valuable insights for firms and policymakers while improving our understanding of the intricate problems organizations encounter in financial distress by considering the effect of profitability, liquidity, and solvency factors. Based on the ASEAN context, the results broaden the toolkit for methodological research, assist in strategic decision-making, and have consequences for developing focused policies that support a more resilient firm environment in ASEAN. Further research can expand the scope of the study by comparing the survival dynamics of ASEAN firms with those in non-ASEAN countries. This comparative analysis can help identify unique factors contributing to or hindering firm survival within the ASEAN region.

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