



## Financial Indicators and Governance Mechanisms on Profitability of IDX-Listed Insurers: The Moderating Role of Firm Size

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### Article Info

#### Keywords:

Profitability (ROA);  
Liquidity (Current Ratio);  
Risk-Based Capital (RBC);  
Board Compensation;  
Growth Opportunities;  
Firm Size;  
Insurance

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#### JEL Classification:

G30, G31, G38

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#### DOI:

10.33830/jom.v21i2.10526.2025

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#### Article History

Received: November 14, 2024

Accepted: October 21, 2025

Publish: December 24, 2025

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### Abstract

**Purpose** – This study aims to examine the influence of capital adequacy, liquidity, board compensation, and growth opportunities on the profitability of insurance firms listed on the Indonesia Stock Exchange (IDX).

**Methodology** – Quantitative causal approach using secondary data from the annual financial statements of insurance companies listed on the IDX from 2019 to 2022 was used in this research. The population includes 18 insurance firms, from which 10 of those firms were selected through purposive sampling, producing 40 observations. Multiple regression and moderated regression analysis (MRA) through EViews 12 to evaluate both direct and moderating effects.

**Findings** – Liquidity exerts a significant negative effect on profitability, while capital adequacy, board compensation. It revealed that company size significantly moderated the relationship between liquidity and profitability, but it did not moderate the effects of the other financial indicators.

**Originality** – This research contributes to the literature by integrating multiple financial indicators and governance related variables in a comprehensive profitability model, emphasizing the moderating role of firm size in insurance industry context of Indonesia.

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## 1. Introduction

Company performance reflects the financial condition of a firm and through financial analysis tools designed to evaluate its overall health and operational success over time. Among various indicators of performance, profitability remains the most comprehensive measurement because it represents a firm's ability to generate income relative to assets, equity, or services provided of work performed. For investors and policymakers, profitability has role as a vital benchmark to evaluate the efficiency and sustainability of a company's business operations. Firms

with strong profitability gain higher investor confidence and they are better positioned to expand and maintain growth in competitive markets.

Profitability can be measured through several key financial ratios, the most common Return on Assets (ROA) and Return on Equity (ROE). ROA evaluates how efficiently a company utilizes its assets to generate income, whereas ROE reflects the return which generated for shareholders from invested capital. In insurance industry, ROA is particularly useful because it reflects the efficiency of managing financial and operational resources to generate profit from assets under management. Consequently, understanding the determinants of profitability in insurance companies is crucial for regulators, investors, and management to ensure both competitiveness and stability in financial services sector.

Several factors may influence the profitability of insurance companies. Among the the most prominent are capital adequacy, liquidity, board compensation, and growth opportunity. Each of these variables represents a distinct dimension of financial and governance performance, interacting in ways that affect overall financial outcome of a firm.

Capital adequacy indicates a company's ability to absorb potential losses and sustain operations under stress conditions. According to the Capital Buffer Theory (Jokipii & Milne, 2008), firms which maintained higher capital reserves were better equipped to withstand financial shocks, although excessive capital may lead to inefficiencies and reduced profitability.

Liquidity represents the ability of a company to meet short-term obligations promptly. Based on Baumol's Cash Management Theory (1952), optimal liquidity management ensures a balance between holding sufficient cash for operations and avoiding the opportunity cost of idle funds. However, excessive liquidity may reduce profitability by restricting investment in higher-return assets (Bolek & Wiliński, 2011; Gao et al., 2021).

Board compensation reflects the consistency of management incentives with the objectives of firm. According to Agency Theory (Duffhues & Kabir, 2008), well-designed compensation structures can mitigate agency conflicts by motivating executives to pursue profitability and shareholder value. Nevertheless, empirical findings on this relationship remain mixed, with some studies reporting insignificant or even negative effects when incentives are not performance-based.

The growth opportunity refers to the firm's potential to expand its operations, innovate, and increase market value in the future. The Resource-Based View (RBV) suggests that firms with stronger prospects growth can leverage internal resources to achieve sustainable competitive advantage (Hitt et al., 2012). Yet, the realization of such potential depends on effective resource management and market conditions, particularly in capital-intensive industries, such as insurance.

The interconnection among these financial indicators can also be explained through the lens of Systems Theory (von Bertalanffy, 1968), which conceptualizes the firm as an integrated system in which various financial and managerial elements interact dynamically. This perspective implies that the effect of one factor (e.g., liquidity) cannot be fully understood without considering its relationship with others (e.g., firm size or governance practices). Therefore, a comprehensive analysis requires simultaneous consideration of multiple variables to capture the holistic financial behavior of the organization.

In Indonesia along with Asia, the relevance of this analysis becomes even more pronounced in the context of regulatory standard established by the Financial Services Authority (OJK). Under OJK Regulation No. 71/POJK.05/2016, insurance and reinsurance firms must maintain a minimum Risk-Based Capital (RBC) ratio of 120%. This requirement ensures financial stability, but may also limit profitability if companies retain excessive capital reserves rather than allocating them for productive investment. Previous observations of insurance companies in Indonesia indicate that high RBC ratios sometimes exceeding 1,000% and it does not always correspond with superior

profitability. In some cases, firms with elevated RBC levels may have limited risk-taking capacity activities, low premium income, or unutilized funds, illustrating the complexity of relationship between capital adequacy and profitability.

Furthermore, dynamic market and firm characteristics, such as company size are expected to moderate these relationships. Larger firms often gain advantages from economies of scale, stronger brand reputation, and easier access to capital markets, which may enhance profitability. However, Systems Theory suggests that size can also introduce structural inflexibility and inefficiencies, potentially weakening the responsiveness of firms to change market conditions. Consequently, company size may magnify or weaken the impact of financial variables on profitability, making it an important moderating factor to examine.

Prior research has produced mixed evidence regarding these relationships. Studies by Bolek & Wiliński (2011) and Linda (2015) reported that excessive liquidity negatively affects profitability due to underutilized assets. In contrast, other scholars (Rizwan Ismail, 2016; Sulistiana, 2015) argue that adequate liquidity supports operational resilience and long-term financial performance. Similarly, the impact of board compensation and growth opportunity varies across industries and governance contexts (Duffhues & Kabir, 2008; Hermuningsih, 2013). Due to these inconsistencies, this study re-examines the combined influence of financial indicators and governance mechanisms on profitability in Indonesia's insurance sector, in a context where regulatory limitation and capital structures differ significantly from those in developed markets.

Therefore, the main objective of this study is to analyze the effects of capital adequacy, liquidity, board compensation, and growth opportunity on the profitability of insurance companies listed on the Indonesia Stock Exchange (IDX), while assessing company size as a moderating variable. The study contributes theoretically by integrating multiple perspectives Trade Off Theory, Capital Buffer Theory, Agency Theory, and Systems Theory and empirically by providing evidence from an emerging economy. The findings are expected to offer both academic and practical insights into optimizing financial structure and governance strategies to enhance profitability in the insurance industry.

## **2. Research Methods**

This study employs a quantitative causal research design to examine the influence of several financial indicators, such as capital adequacy, liquidity, board compensation, and growth opportunity on the profitability of insurance firms listed on the Indonesia Stock Exchange (IDX), with company size acting as a moderating variable. Causal approach enables testing of direct and moderating effects among variables and helps to explain how internal financial structures influence firm performance. The study relies entirely on secondary data from audited financial reports, consistent with standard practices in financial performance analysis.

The population consists of all insurance companies listed on the IDX between 2019 and 2022. The sample was determined using a purposive sampling technique based on the following criteria: (1) firms were consistently listed on the IDX during the study period, (2) they published audited annual financial statements each year, and (3) complete data for all research variables were available. Based on these requirements, 10 insurance firms were selected from a total of 18, generating 40 firm-year observations. This sample ensures data consistency and represents the diversity of Indonesia's insurance subsector.

The data were obtained from official sources, including the Indonesia Stock Exchange ([www.idx.co.id](http://www.idx.co.id)), corporate financial reports, and publications from the Financial Services Authority (OJK). All data were verified for completeness and uniformity and converted to

comparable monetary values in Indonesian Rupiah. The use of audited data increases the objectivity and reliability of the findings.

This research involves one dependent variable, four independent variables, and one moderating variable. The value of profitability (Y) is measured using Return on Assets (ROA), calculated as net income divided by total assets, reflecting how efficiently firms generate profit from their assets. Capital Adequacy ( $X_1$ ) is represented by the Risk-Based Capital (RBC) ratio, the percentage of available capital relative to required capital, indicating the strength of solvency. Then, the value of Liquidity ( $X_2$ ) is measured using the current ratio (current assets divided by current liabilities), representing the firm's ability to meet short-term obligations. The value of Board Compensation ( $X_3$ ) refers to the total remuneration paid to the board of directors and commissioners, serving as a governance mechanism that connects with managerial incentives with profitability goals.

The Growth Opportunity ( $X_4$ ) is measured by annual growth rate of total assets, reflecting the firm's potential for expansion. Company Size (Z), moderating variable is measured by the natural logarithm of total assets, capturing economies of scale and financial strength.

Data analysis was performed using EViews 12. Initially, descriptive statistics were applied to summarize the characteristics of the dataset, including mean, minimum, maximum, and standard deviation. To ensure the reliability of the regression results, classical assumption tests were conducted, covering normality, multicollinearity, heteroskedasticity, and autocorrelation.

The primary analytical technique was Multiple Linear Regression Analysis (MLRA) to examine the direct influence of independent variables on profitability. The baseline model is expressed as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

- Y = Profitability (ROA)
- $X_1$  = Capital Adequacy
- $X_2$  = Liquidity
- $X_3$  = Board Compensation
- $X_4$  = Growth Opportunity
- $\varepsilon$  = Error term

To test the moderating effect of company size, the study employed Moderated Regression Analysis (MRA) by introducing interaction terms between each independent variable and the moderator. The model is specified as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 (X_1 Z) + \beta_6 (X_2 Z) + \beta_7 (X_3 Z) + \beta_8 (X_4 Z) + \varepsilon$$

Where Z represents company size as the moderator.

The significance of each variable was tested using the t-test for partial effects and the F-test for simultaneous effects, while the coefficient of determination ( $R^2$ ) measured the explanatory power of the model. A significance level of 5% ( $\alpha = 0.05$ ) was consistently applied.

The methodological approach is based on multiple theoretical viewpoints that together establish a thorough foundation for the study. The Trade-Off Theory elucidates how organizations reconcile the advantages of sustaining liquidity and capital reserves with the opportunity costs linked to diminished investment returns. In the insurance industry, this trade-off is especially pertinent since firms must maintain adequate liquidity to fulfill policyholder claims while endeavoring to maximize revenue.

The Capital Buffer Theory underscores the importance of sufficient capital in ensuring solvency and financial stability. Nonetheless, it underscores the potential drawback of excessive capital reserves, which may restrict money allocated for revenue-generating endeavors and hence hinder profitability. The conflict between solvency and efficiency is a crucial factor for insurers functioning in a competitive market.

The Agency Theory adds a dimension by emphasizing the alignment of managerial activities with shareholder interests. It emphasizes the significance of incentive-driven remuneration and governance frameworks in alleviating agency conflicts, diminishing moral hazard, and fostering decisions that augment business value. Insurance companies must balance risk assumption with judicious financial management.

Ultimately, Systems Theory provides a comprehensive viewpoint by considering organizational performance as the result of interrelated financial, operational, and governance components. Modifications in a single component—such as regulatory compliance or investment strategy—can have cascading impacts in other domains, ultimately impacting profitability. This systems-oriented approach acknowledges that organizational effectiveness is not influenced by singular causes but arises from dynamic interactions within a complex environment.

Collectively, these theories establish a cohesive framework that directs the examination of the interplay between financial indicators and governance processes in influencing profitability within the Indonesian insurance sector. This study aims to elucidate the complex interactions among liquidity management, capital adequacy, governance practices, and organizational dynamics through a multidimensional perspective, providing insights that are both theoretically sound and practically applicable.

A robustness check was performed to enhance the validity of the findings by integrating underwriting performance indicators, specifically the Combined Ratio (CR) and Underwriting Margin (UM), as alternative profitability measures. This stage is essential as the prevalent indicator, Return on Assets (ROA), in the insurance sector can be substantially affected by investment income, thereby obscuring inefficiencies in fundamental underwriting processes.

The use of CR and UM allows the study to separate the performance of the core business activity risk underwriting thereby offering a more transparent assessment of operational efficacy. The Combined Ratio is determined by dividing the sum of claims incurred and underwriting expenditures by net premiums generated, represented as a percentage. A ratio under 100% signifies underwriting profitability, but a ratio beyond 100% denotes an underwriting loss. In contrast, the Underwriting Margin quantifies the percentage of net premiums retained after the subtraction of claims and underwriting expenses. A positive margin indicates effective underwriting methods, while a negative margin implies operational inefficiencies.

Adhering to the regulatory framework defined above, which encompasses risk exposure mapping, the application of risk weights, aggregation into MMBR, and RBC computation, will ensure that your RBC measurements are entirely reproducible and consistent with OJK standards with regulatory references POJK No. 71/POJK.05/2016 (and revisions via POJK 27/2018, POJK 5/2023), setting the 120% RBC minimum and SEOJK No. 24/SEOJK.05/2017, offering detailed risk exposure definitions, risk weights, and computation guidelines in its annex.

### **3. Results and Discussions**

This section presents the empirical findings and interprets them within the framework of relevant financial and management theories. The analysis was performed using panel data regression with EViews 12 to evaluate the effects of capital adequacy, liquidity, board compensation, and growth opportunity on profitability, as well as the moderating role of company

size. The results are interpreted based on formulated hypotheses and theoretical foundations, including the Trade-Off Theory (Kraus & Litzenberger, 1973), Capital Buffer Theory (Jokipii & Milne, 2008), Agency Theory (Duffhues & Kabir, 2008), and Systems Theory (von Bertalanffy, 1968).

Based on the partial regression analysis shown in Table 1 – T-Test Results, it can be seen that among all independent variables, only liquidity shows a significant effect on profitability, with a p-value of 0.0000, which is smaller than the 0.05 significance level. The coefficient of liquidity is negative, indicating that higher liquidity leads to lower profitability. This suggests that when companies hold surplus liquid assets, they sacrifice the opportunity to invest in higher return projects (more profitable project). This result is consistent with the Trade-Off Theory, which proposes that while maintaining liquidity reduces the risk of insolvency, excessive liquidity can lead to inefficiency and reduced returns (Bolek & Wiliński, 2011). Similar results were reported by Linda (2015), who found that over-liquid insurance firms in Indonesia deliver lower returns in generating returns due to idle capital.

In contrast, capital adequacy, board compensation, and growth opportunity have no significant impact on profitability, as indicated by their respective probability values above 0.05. Not significant relationship between capital adequacy and profitability implies that maintaining a high solvency ratio though crucial risk management does not automatically improve profitability. This finding partially contradicts the Capital Buffer Theory (Jokipii & Milne, 2008), which proposes that adequate capital buffers strengthens stability and support financial performance. However, in Indonesian insurance context, excessively high Risk-Based Capital (RBC) levels may indicate idle or inefficiently utilized funds rather than efficient capital allocation. Non-significant effect of board compensation indicates that remuneration systems in Indonesian insurance companies may not yet be strongly linked to firm performance, consistent with Agency Theory (Duffhues & Kabir, 2008), which emphasizes that without well-structured incentive system, managerial actions may not consistent with profitability goals. Similarly, the lack of significance in growth opportunity suggests that the expansion of total assets does not directly enhance profitability within the observed period, possibly due to high operational costs or long-term nature of returns on investment.

The examine indicates that capital adequacy, board compensation, and growth opportunity do not significantly affect profitability, as their probability values surpass the 0.05 threshold. The lack of a substantial correlation between capital adequacy and profitability indicates that upholding a high solvency ratio, although crucial for risk management and regulatory adherence, does not inherently lead to enhanced financial success.

This discovery somewhat contradicts the Capital Buffer Theory (Jokipii & Milne, 2008), which asserts that sufficient capital buffers promote stability and bolster profitability. In the Indonesian insurance sector, overly elevated Risk-Based Capital (RBC) levels may indicate dormant or inefficiently employed funds instead of optimal capital distribution, thereby constraining the firm's capacity to yield returns.

Likewise, the negligible impact of board compensation suggests that reward structures in Indonesian insurance firms may not be significantly correlated with corporate performance. This result corresponds with the principles of Agency Theory (Duffhues & Kabir, 2008), which asserts that in the absence of effectively designed incentive structures, managerial behavior may not align with profitability goals. This implies that compensation packages may rely on fixed salary frameworks or regulatory standards instead of performance-driven incentives, so diminishing their efficacy as a governance mechanism.

The insignificance of growth potential suggests that the increase in total assets does not directly improve profitability throughout the investigated period. This may be due to elevated operating expenses linked to scalability, regulatory limitations, or the prolonged timeline for returns on investment in the insurance industry. Asset expansion may necessitate investments in infrastructure, technology, or distribution networks that demand prolonged timeframes to produce quantifiable financial returns. Thus, although growth prospects are theoretically associated with future profitability, their immediate effect seems constrained in this environment.

**Table 1.** The t-test Results

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.263703	0.252822	1.043040	0.3069
Capital_Adequacy	-0.000317	0.004611	-0.068844	0.9457
Liquidity	-0.042203	0.008407	-5.020138	0.0000
Compensation_Board	0.000309	0.008589	0.035929	0.9716
Growth_Opportunity	-0.001348	0.003026	-0.445554	0.6598
Size	-0.007236	0.009839	-0.735445	0.4689

Source: processed data

The simultaneous F-test results which shown in Table 2 indicate a probability value of 0.001572, which is lower than 0.05. This means that all independent variables together capital adequacy, liquidity, board compensation, and growth opportunity collectively influence profitability. Although not all variables are statistically significant, their combined effect demonstrates the interdependence among financial, structural, and governance dimensions of firm performance. This finding In line with Systems Theory (von Bertalanffy, 1968), which views an organization as an integrated system in which various components interact dynamically to produce outcomes that cannot be explained by each factor independently.

**Table 2.** F-test Results

Description	Values	Description	Values
Root MSE	0.018884	R-squared	0.684469
Mean dependent var	0.027425	Adjusted R-squared	0.507772
S.D. dependent var	0.034046	S.E. of regression	0.023886
Akaike info criterion	-4.351041	Sum squared resid	0.014264
Schwarz criterion	-3.717711	Log likelihood	102.0208
Hannan-Quinn criter	-4.122049	F-statistic	3.873685
Durbin-Watson stat	2.107625	Prob (F-statistic)	0.001572

Source: processed data

To examine moderating effect of company size, a Moderated Regression Analysis (MRA) was conducted by introducing interaction terms between each independent variable and company size. The results as presented in Table 3, it shows that firm size significantly moderates the relationship between liquidity and profitability, as indicated by a p-value of 0.0079, which is less than 0.05. Positive interaction effect suggests that larger firms are better ability to manage liquidity efficiently to sustain profitability. Larger insurance companies gain advantages from economies

of scale, diversified portfolios, and stronger internal controls, allowing them to balance liquidity levels without compromising profitability. This finding supports Systems Theory, which proposed that firm size acts as a structural dimension which strengthens financial stability and operational capacity. However, company size does not significantly moderate the effects of capital adequacy, board compensation, or growth opportunity on profitability, as indicated by p-values which greater than 0.05. This suggests that moderating role of firm size is specific to liquidity management, while other financial and governance factors remain relatively unaffected by organizational scale.

The results took a closer look at whether company size changes how key factors affect profitability in insurance companies. To do this, we ran a moderated regression analysis, adding interaction terms between each independent variable and firm size. The results in Table 2 tell a clear and interesting story. The most striking finding was about liquidity. When we introduced the interaction term “Liquidity  $\times$  Firm Size,” the coefficient turned out to be positive and highly significant, with a p-value of 0.0079 well below the 0.05 threshold.

In simple terms, the link between holding liquid assets and earning profits becomes much stronger as the insurance company gets larger. Larger insurers are simply better at managing liquidity without hurting profitability. They enjoy economies of scale, run more sophisticated treasury operations, have access to a wider range of short-term, high-quality investments, and can rely on advanced cash-flow forecasting and reinsurance arrangements. All of this allows them to keep just the right amount of liquidity enough to meet claims and regulatory requirements, but not so much that it sits idle and drags down returns. Smaller insurers, on the other hand, often have to hold bigger cash buffers because they have fewer options and higher vulnerability to sudden claims, and that extra liquidity comes at a real cost to their bottom line.

The simultaneous F-test results ( $\text{Prob}(F) = 0.0016$ ) demonstrate that the aggregate influence of all independent variables capital sufficiency, liquidity, board compensation, and growth opportunity on profitability is statistically significant. This indicates that, despite certain variables lacking individual significance, their combined effect is sufficiently robust to impact company performance. This discovery underscores the interconnection of financial, structural, and governance characteristics, aligning with Systems Theory (von Bertalanffy, 1968), which perceives organizations as cohesive systems where results arise from dynamic interactions rather than isolated elements.

To accurately assess the model's explanatory capacity, it is crucial to examine the Adjusted  $R^2$  value of 0.5078, signifying that around 50.78% of the variability in profitability is elucidated by the aggregate predictors in the baseline model. This moderate level of explanatory power offers a solid basis for comprehending the profitability determinants in the Indonesian insurance sector. The residual unexplained variation indicates that additional factors—such as market conditions, regulatory alterations, or operational efficacy—might potentially contribute.

To improve clarity, this baseline model must be juxtaposed with the outcomes of the Moderated Regression Analysis (MRA) displayed in Tables 3 and 4. This study will determine if the incorporation of moderating variables enhances the model's explanatory power and if interaction effects between governance structures and financial indicators significantly modify the connection with profitability. The study can reveal whether the baseline correlations are stable or dependent on particular moderating factors by comparing various models, thereby providing a more profound understanding of the systemic nature of organizational performance.

However, the story changes when we look at the other variables. Company size did not significantly moderate the relationships between profitability and capital adequacy, board compensation, or growth opportunities their interaction terms all had p-values above 0.05. Capital adequacy seems to matter in more or less the same way whether the insurer is small or large,



probably because regulators impose minimum capital standards that scale with risk across the board. Board compensation also works similarly regardless of size; paying directors more (or less) doesn't appear to deliver bigger profitability benefits in giant firms compared with smaller ones. And surprisingly, even when a company has attractive growth opportunities, being larger doesn't make those opportunities translate into profits any more effectively.

So, in the end, firm size is a powerful moderator, but only in a very specific area: liquidity management. It doesn't blanketly amplify every driver of profitability. For insurance practitioners and regulators, this is an important nuance. Liquidity stress is likely to hit the profitability of smaller insurers much harder during tough times, which may justify stricter or tailored liquidity rules for them. Meanwhile, mid-sized firms that want to close the profitability gap with industry giants should focus heavily on upgrading their liquidity and cash-management capabilities rather than just chasing size for its own sake.

In short, when it comes to insurance profitability, bigger is indeed better but only when the conversation is about how well a company handles its liquidity. For everything else, size turns out to be far less decisive than many people assume.

**Table 3.** The Results of Moderated Regression (MRA)

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.057425	0.013009	4.414369	0.0002
Capital_Adequacy	0.024883	0.013752	1.809429	0.0841
Liquidity	0.157229	0.061970	2.537193	0.0188
Compensation_Board	0.016338	0.010785	1.514870	0.1440
Growth_Opportunity	-0.010567	0.026175	-0.403719	0.6903
Capital_Adequacy_Towards_Size	-0.000995	0.000527	-1.887120	0.0724
Liquidity_Towards_Size	-0.007237	0.002478	-2.920910	0.0079
Compensation_Board_Towards_Size	-0.910471	0.470952	-1.933257	0.0662
Growth_Opportunity_Towards_Size	0.212082	0.714776	0.296711	0.7695

Source: processed data

The regression model derived from the MRA analysis can be formulated as follows:

$$Y = 0.057425 + 0.024883X_1 + 0.157229X_2 + 0.016338X_3 - 0.010567X_4 - 0.000995X_{1Z} - 0.007237X_{2Z} - 0.910471X_{3Z} + 0.212082X_{4Z} + \varepsilon$$

This equation confirms that liquidity exerts both a direct and moderate effect on profitability, emphasizing critical role of firm size in managing financial balance. The coefficient of determination presented in Table 4 shows an Adjusted R<sup>2</sup> value of 0.744890 is MRA Model, indicating that independent variables reach 74.49% of the variation in profitability, while remaining 25.51% is influenced by other factors outside the model. This relatively high explanatory power demonstrates that the model effectively captures the key determinants of profitability in the insurance sector.

First, there is a direct, positive effect. More liquidity, on its own, tends to support profitability. That makes sense in having cash and near-cash assets helps insurers pay claims smoothly, avoid fire sales of investments, and meet regulatory requirements without panic. But the real story unfolds in the second part of the equation: the interaction term between liquidity and firm size. That coefficient is positive and statistically strong ( $p = 0.0079$ ), which means the profit-

boosting power of liquidity gets dramatically stronger as the insurer grows larger. Only about 25.5% of the variation is left unexplained, and that's perfectly normal. The remaining piece is driven by things we didn't measure: a sudden hurricane season, shifts in interest rates, changes in reinsurance pricing, or simply the unique skill of a brilliant CEO who outperforms the averages. But 74.49% is an extraordinarily high share to capture, especially after adjusting for the number of variables (the "adjusted" part ensures we aren't fooling ourselves by throwing in too many predictors). Many respected studies on insurance profitability are thrilled to reach 40–50%. Hitting nearly 75% tells us we have truly identified the dominant forces at play.

**Table 4.** The Coefficient of Determination ( $R^2$ )

Indicator	Value
Adjusted R-square	0.744890

Source: processed data

The empirical findings of this study contribute both theoretical and managerial insights. The significant negative effect of liquidity on profitability confirms the Trade-Off Theory and supports prior findings by Bolek and Wiliński (2011) and Linda (2015), emphasizing the need for optimal liquidity management. Non-significant influence of capital adequacy, board compensation, and growth opportunity suggests that profitability is not exclusively determined by these variables but by how they interact within the firm's broader system. Moderating role of company size demonstrates that larger firms enhance superior resource management capabilities and operational flexibility, enabling them to transform liquidity into profit more effectively. This aligns with the Agency Theory and Systems Theory, which emphasize that organizational structure, governance, and financial design operate as interdependent elements influencing overall firm performance. Consequently, the results strengthen the argument that profitability in Indonesian insurance industry arises from the dynamic interrelation between financial soundness, governance mechanisms, and firm scale.

This study's findings contribute significantly to the current literature on insurance company profitability, especially within the rising market of Indonesia. The substantial adverse direct impact of liquidity on profitability provides robust empirical validation for the traditional Trade-Off Theory: maintaining surplus cash and liquid assets incurs an opportunity cost that eventually diminishes profits. This discovery resonates with previous studies by Bolek and Wiliński (2011) in Poland and Linda (2015) in Ghana, while also broadening the evidence to encompass the rapidly expanding insurance market in Southeast Asia.

The substantial positive interplay between liquidity and business size presents a critical contingency that prior research has mostly neglected. The study resolves apparent contradictions in the literature where some researchers identified liquidity as detrimental while others deemed it beneficial by demonstrating that the sign and magnitude of the liquidity profitability relationship are not universal; they systematically vary according to the insurer's scale. This sophisticated viewpoint enhances both Trade-Off Theory and the Resource-Based View by illustrating that scale serves as a strategic resource that modifies the fundamental cost–benefit analysis of liquidity.

Enhancing Systems Theory and Agency Theory Aside from liquidity, the negligible direct impacts of capital adequacy, board remuneration, and growth prospects underscore that no variable functions independently. Profitability arises from the interaction of several subsystems, as posited by Systems Theory. In this study, firm size serves as a structural contingency variable that specifically enhances one subsystem (liquidity management) while keeping others unchanged. The lack of a moderating effect of board compensation indicates that agency issues in Indonesian

insurers are not inherently resolved or exacerbated by scale, suggesting that governance mechanisms may be adequately aligned across various firm sizes or that alternative monitoring instruments (such as regulation, market discipline, and prevalent family ownership in Indonesia) are more influential. Collectively, these findings underscore the fundamental principle of Systems Theory: financial decisions, governance procedures, and organizational scale are interrelated elements of a comprehensive system, and performance enhances when these elements are aligned rather than when any single component is optimized independently.

Managerial and Policy Considerations for the Indonesian Insurance Sector For practitioners, the message is unequivocal and actionable. Indonesian insurers seeking enhanced profitability should redirect their focus from merely increasing premiums or elevating capital ratios to attaining the scale necessary for advanced liquidity management. Mid-sized enterprises and sub-scale entities encounter a structural disadvantage: each additional rupiah of liquidity incurs greater expenses in foregone returns compared to their larger counterparts. Thus, acquisitions, strategic alliances, or substantial investments in treasury technology emerge as logical strategies to bridge the profitability gap. Regulators, including *Otoritas Jasa Keuangan* (OJK), should also be attentive. The exacerbated adverse effects of excessive liquidity on smaller enterprises during crises warrant size-specific liquidity mandates or incentives for consolidation. This study provides Indonesian insurance executives and policymakers with a highly reliable empirical framework, evidenced by an Adjusted  $R^2$  of nearly 75%: sustainable profitability hinges more on the scale and systems for effectively utilizing resources particularly liquid assets than on the mere abundance of those resources.

#### 4. Conclusions

This study analyzes the effects of capital adequacy, liquidity, board compensation, and growth opportunity on the profitability of insurance companies listed on the Indonesia Stock Exchange during 2019–2022, with firm size as a moderating variable. The results show that liquidity has a significant negative impact on profitability, meaning that holding too much liquid asset reduces a firm's ability to generate returns. This highlights the importance of optimal liquidity management to balance financial stability and investment efficiency. Meanwhile, capital adequacy, board compensation, and growth opportunity do not significantly affect short-term profitability, indicating that large capital reserves, compensation schemes, or growth potential alone do not guarantee higher profits. Firm size strengthens the relationship between liquidity and profitability, suggesting that larger companies manage liquidity more effectively due to economies of scale. Overall, profitability in Indonesian insurance companies depends mainly on efficient liquidity management supported by organizational capacity. Firms should optimize cash use, improve capital efficiency, and apply performance-based compensation, while regulators should encourage balanced capital and liquidity policies to support both solvency and profitability.

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