Jurnal Akuntansi dan Keuangan, Vol. 27, No. 1, May 2025, 1-22 DOI: https://doi.org/10.9744/jak.27.1.1-22
ISSN 1411-0288 print / ISSN 2338-8137 online

The Influence of Organizational Slack on Firm Performance Moderated by Managerial Ability

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ABSTRACT

This study examines the influence of organizational slacks on firm performance with managerial ability as a moderating variable. We divide organizational slack into three categories: available slack (current ratio), recoverable slack (sales, general, and administrative expenses ratio), and potential slack (debt-to-equity ratio). Data envelopment analysis (DEA) measures managerial ability and firm efficiency. We collected secondary data from 678 companies in ASEAN 5, excluding the financial sector, on S&P Capital IQ for the period of 2019-2023. We used a fixed-effect panel data model with purposive sampling. The results show that available slack has a positive effect on Tobin's Q and a negative impact on ROA. Recoverable slack, potential slack, and managerial ability have a negative effect on firm performance. Managerial ability can moderate the relationship between organizational slack and Tobin's Q. Additionally, managerial ability can moderate the relationship between recoverable slack and ROA. In contrast, managerial ability cannot moderate the relationship between available slack and potential slack with ROA.

Keywords: Organizational slack; available slack; recoverable slack; potential slack; firm performance; managerial ability.

INTRODUCTION

Firm performance is a crucial element in determining its sustainability and growth. Firms with optimal performance are able to compete in the market and withstand economic challenges, reflecting efficiency in resource utilization and the accuracy of managerial decisions [31]. Firms in ASEAN face significant challenges in enhancing their competitiveness, especially with the growth potential driven by the opportunities offered by Industry 4.0. In this context, companies need to optimize their capital structure with the right balance between debt and equity. ASEAN's growing economic integration presents businesses with chances to increase productivity and reach new markets. However, they must effectively manage their resources to remain globally competitive while addressing the challenges of upgrading capacity and technology in line with emerging industry trends [7].

Companies must formulate sound funding policies to capitalize on these opportunities, including prioritizing internal funds, followed by debt, and resorting to equity only when other financing options are exhausted. Careful management of debt allows companies to secure capital at lower costs without increasing financial risk, while equity provides flexibility and reduces long-term financial burdens. By optimizing the right capital structure, companies can strengthen their competitiveness, swiftly adapt to changes brought about by Industry 4.0, and fully leverage the significant growth opportunities in ASEAN markets, both domestically and internationally [7].

The resource-based paradigm emphasizes that enterprises consist of resources that foster sustainable competitive advantage and enhanced performance. According to resource-based theory, organizational resources are believed to protect a firm during environmental upheaval, mitigate employee conflict, and enhance firm performance. Nonetheless, agency theory posits that organizational slack is counterproductive and arises due to ineffective management. Agency theory suggests that organizational slacks are wasteful and happen because of poor management or resource use, which can hurt the company's competitive edge and lead to less-than-ideal results. Considering the contentious debate between resource-based and agency theories, management literature places significant attention on the impact of organizational slack on company performance. This study aims to investigate the influence of slack on business performance in the ASEAN 5 [19].

Rapid changes in the business world put companies under pressure from external environ-

ments, increasing the urgency for adequate resilience. Resource availability is considered important in shaping a company's resilience, as resource constraints reduce flexibility, weaken resilience, and threaten company sustainability [27]. Additionally, resource-based theory highlights the critical role of organizational slack as a difficult-to-imitate competitive factor, providing flexibility and adaptability in risk-taking [9].

Despite its negative perception, organizational slack has proven valuable in managing uncertainty. Excess, or positive, slack is able to support firm performance through higher operational flexibility, indicating an excess of resources beyond minimum requirements that have the potential to improve performance [18]. More than just a reserve, slack is also a strategic tool to support innovation, new product development, and operational efficiency improvements, provided it is managed well [30].

Besides organizational slack, managerial ability also plays a key role in optimizing its use. Competent managers are better able to manage slack for rapid response to change, make sound strategic decisions, and create long-term value for the company [35]. Effective slack management allows companies to maintain performance even under dynamic environmental pressures in the face of uncertainty.

Previous studies often measure firm performance using the Return on Assets (ROA) proxy, representing the profitability of owned assets. However, using Tobin's Q to evaluate firm performance from a market viewpoint is still lacking, indicating a gap in the literature regarding market-based performance measurement [30]. In this context, we need to further explore the role of organizational slack as a reserve resource in firm performance.

Most previous studies have focused more on financial slack and its impact on a company's firm performance. However, few have discussed organizational slack, which refers to non-financial resources such as operational capacity, human resource flexibility, and unused time, all of which can also affect firm performance [22]. Based on this background, this study identifies a research gap regarding the influence of organizational slack on firm performance by including managerial ability as a moderating variable. This study aims to provide empirical evidence on the role of managerial ability in strengthening or weakening the relationship between slack and firm performance, which will be measured using Data Envelopment Analysis (DEA) and the level of firm efficiency. Managerial ability can improve or reduce the effectiveness of using slack in driving overall firm performance.

Literature Review

Agency Theory

Agency theory explains the interaction between a principal and an agent within a company and the potential for conflicts of interest due to differing objectives. This theory emphasizes the importance of monitoring mechanisms and incentives to ensure that the agent acts in line with the principal's goals, especially in large companies where there is often a conflict of interest between owners and managers [29], [36], [40].

Agency theory is also relevant to firm performance, where misalignment between management and owners can negatively impact performance. Therefore, owners need to design contracts that incentivize managers to optimally manage the company's resources, thereby improving firm performance and achieving its objectives [3].

Effective corporate governance is crucial to addressing agency problems, with governance as a monitoring mechanism. Good governance can minimize conflicts and agency costs and contribute to improved financial performance and overall firm performance [33].

Resource-Based View Theory

Resource-based theory posits that firms can achieve a sustained competitive advantage by managing and exploiting internal resources. Unlike theories that focus on external market analysis, this theory emphasizes the importance of resource-based strategies for surviving in a competitive and changing business environment [39].

This theory underscores the importance of combining unique resources and the ability to leverage them. Resources such as a skilled workforce, strategic physical assets, and organizational capabilities in management, innovation, and corporate culture can be used to achieve a sustained competitive advantage and strengthen market position [10].

Firms seeking to create a competitive advantage must be able to manage and integrate resources into their business strategies. Effectively utilizing resources is crucial as firms must respond to market, technology, and economic changes. With optimal resource utilization, firms can maximize performance and react effectively to environmental changes [2].

Upper Echelon Theory

Upper echelons theory suggests that the characteristics and experiences of top-level manage-

ment influence strategic decisions and firm performance. This theory posits that top-level managers' backgrounds, experiences, and perspectives play a significant role in strategic decision-making that affects firm performance. The knowledge and expertise of management shape the direction and effectiveness of strategy and the ongoing performance of the firm [21].

This theory is also linked to managerial ability, where competent managers can make effective strategic decisions. The decisions made are influenced by managers' views and beliefs about strategy and leadership, which influence firm performance. Thus, strategic decisions reflect the personal characteristics of managers that contribute to improving firm performance [20].

Upper echelons theory also suggests that competent management sends positive signals to the market, reducing information asymmetry and increasing market confidence. Internal company controls as a governance mechanism can improve the reliability of financial reporting, while managerial ability influences decision-making and strategy implementation within the company [12].

Firm Performance

Firm performance is a key indicator in evaluating implemented policies' financial health and success. It reflects the quality of resource management in creating added value and demonstrates the effectiveness of implemented policies in supporting the stability and growth of the company [31].

Good performance indicates that the business strategy has been successfully implemented and meets stakeholder expectations, while poor performance may indicate managerial or external problems that need to be controlled. Therefore, routine performance monitoring is crucial to ensure that the company remains on track for long-term sustainability and growth [32].

Firm performance also reflects the effectiveness of resource allocation, including financial resources, human resources, technology, and information. The optimization of these resources enhances market competitiveness and opens up opportunities for expansion and innovation, which can accelerate company growth compared to its competitors [28].

Organizational Slack

The company has resources that exceed its minimum operational needs, which can be human, financial, or physical resources. These resources act as reserves or buffers when the company faces uncertainty and changes in the business environment, allowing the company to be more flexible and adaptive [16]. Available slack, in particular, includes easily accessible resources such as excess liquidity and production capacity, which enable the company to respond to changes without disrupting core operations. However, excessive management of available slack can lead to inefficiencies and potentially decrease firm performance [17], [4].

Recoverable slack refers to resources that are already integrated into operations but can still be recovered, especially when the company faces a financial crisis. While tending to be less flexible, recoverable slack helps maintain operational stability and support responses to market fluctuations. With proper management, this slack can be a valuable resource for innovation and company growth amid market challenges [16],[9].

Potential slack refers to a reserve of resources that can be tapped into to raise additional capital, indicating a company's ability to access additional debt or equity for strategic investments or innovation. While providing flexibility in long-term planning, potential slack also carries the risks of information asymmetry and uncertainty, which can impact the company's efficiency and performance if not managed effectively [16], [4].

When there is unabsorbed slack, also known as "available slack," liquid resources are ready to use immediately. Managers have a lot of freedom to decide what to do with these resources. Absorbed slack, also known as recoverable slack, refers to extra resources that are already part of an organization and may take longer to be repurposed. Because the different types of Slack work differently, it's important to understand how they affect group practices. Generally, companies with excess cash can quickly acquire the necessary property, plant, and tools. Other businesses, however, can swiftly obtain additional time by taking out loans from capital markets or banks. The property of unabsorbed slack is that it stays mostly the same. The current business operations tie recoverable slacks to the company's strategy. Available slack resources could improve a company's results through innovation, R&D, and mergers and acquisitions. However, this is less likely to happen than with recoverable slack due to its less ingrained nature within the company [26].

Managerial Ability

Managerial ability is a critical factor influencing the efficiency and performance of a company, as it reflects the extent to which managers can maximize the use of resources for optimal results. Competent managers tend to be more effective in strategic

decision-making and resource allocation, which positively impacts the overall efficiency and performance of the company [15].

Managerial ability also significantly impacts a company's success through productivity, investment decisions, and innovation. Competent managers are able to identify opportunities, manage risks, and increase company value. They also create a transparent and integrity-based work environment, supporting long-term stability and growth [35].

Incentives play a role in influencing managers' commitment to company objectives. Performance-based incentives can make managers more focused on short-term results, while stable compensation encourages strategic decisions with a long-term orientation, ultimately enhancing firm performance [11].

Hypothesis Development

Available Slack and Firm Performance

Research conducted by [19] shows that in the non-financial sector in Africa, available slack positively impacts firm performance, particularly through market value. Firms with high slack have greater flexibility in resource management, enabling them to address market challenges more effectively without sacrificing financial stability and supporting innovative projects that contribute to long-term competitive advantage.

A study by [8] shows that available slack positively impacts firm performance, as accessible resources can be strategically utilized to support operations, investments, and innovation. Effective management of available slack, such as allocating funds to productivity-enhancing initiatives or CSR activities, can boost profitability and improve the company's reputation in the short term. These resources provide the flexibility needed for firms to respond to market opportunities or address challenges without relying on external financing.

However, a study by [4] in six GCC countries found a significant negative impact of available slack on firm performance, particularly regarding return on assets. Less productive slack tends to increase agency problems, where managers avoid risks or expenditures that do not add value, thus reducing profitability.

The findings of this study indicate that the relationship between available slack and firm performance is complex. While slack can positively influence market value, it may also harm asset-based performance measures.

H_{1a}: Available slack positively influences firm performance (Tobin's Q).

H_{1b}: Available slack negatively influences firm performance (ROA).

Recoverable Slack and Firm Performance

The study of [37] argues that recoverable slack, which includes operational expenses that can be reduced, tends to decrease firm performance when assessed by market value. This slack becomes a burden that reduces the firm's flexibility and responsiveness, leading to lower operational efficiency, as reflected in a decrease in Tobin's Q.

A study by [1] stated that recoverable slack negatively impacts firm profitability and performance, especially through return on assets. The significant costs associated with maintaining and recovering this slack often reduce the firm's operational efficiency, ultimately leading to decreased performance.

However, a study by [41] found that poor management or inefficient use of recoverable slack negatively impacts firm performance. As resources can be mobilized when needed, recoverable slack may lead to inefficiencies if their deployment is delayed or directed toward low-value activities. Mismanagement can increase operational costs, reduce flexibility, and hinder adaptation to dynamic environments. The absence of clear governance and strategic alignment exacerbates these issues, causing some firms to fail in converting recoverable slack into performance gains. Effective resource management is crucial to efficiently utilize recoverable slack and support long-term organizational goals.

Based on these findings, this study concludes that recoverable slack negatively impacts firm performance in terms of market value and return on assets.

H_{2a}: Recoverable slack negatively influences firm performance (Tobin's Q).

H_{2b}: Recoverable slack negatively influences firm performance (ROA).

Potential Slack and Firm Performance

According to [19], potential slack negatively impacts firm performance as measured by market value due to managerial inefficiencies and a lack of oversight of idle resources. With high levels of potential slack, management tends to be less efficient, resulting in suboptimal allocation of funds and a low Tobin's Q.

On the other hand, a study by [8] stated that potential slack tends to negatively affect firm performance. This is because potential slack involves resources not yet directly owned, such as borrowing capacity or potential external funding. Dependence on potential slack can increase financial burdens and risks, particularly if these resources are not managed properly or are allocated to less profitable projects. The added interest costs and financial obligations associated with external

funding can also reduce efficiency and long-term performance.

The study by [4] also found that high levels of potential slack negatively impact firm performance based on return on assets. An overreliance on equity compared to debt increases the cost of capital and reflects inefficient financial management. This reduces operational efficiency, as evidenced by a decrease in return on assets.

Based on the above discussion, this study concludes that potential slack has a negative impact on firm performance, as seen in both market value and return on assets.

H_{3a}: Potential slack negatively influences firm performance (Tobin's Q).

H_{3b}: Potential slack negatively influences firm performance (ROA).

Managerial Ability on Firm Performance

[6] found that managerial ability positively impacts firm performance, as measured by market value. This research highlights the importance of adaptive and innovative managerial strategies in maintaining a competitive advantage and profitability in the face of global competition and economic uncertainty. Competent managers who make sound decisions can enhance firm performance, aligning with long-term goals.

A study by [24] showed that high managerial ability contributes positively to firm performance, as measured by return on assets. Effective managers who manage assets and improve operational efficiency can drive profits and reduce failure risk.

However, a study by [25] revealed that managerial ability significantly impacts Tobin's Q. Managers with higher abilities can manage resources more efficiently, understand industry trends, predict market demand, and select value-enhancing investment projects, thereby directly improving a company's investment opportunities. This relationship is more pronounced in firms with strong financial positions, highlighting the importance of financial flexibility in supporting the implementation of strategic decisions. These findings underscore that managerial ability is critical in optimizing investment decisions and significantly enhancing firm value.

This study concludes that managerial ability positively affects firm performance based on both market value and return on assets. Therefore, we can formulate the following hypothesis.

H_{4a}: Managerial ability positively influences firm performance (Tobin's Q).

H_{4b}: Managerial ability positively influences firm performance (ROA).

Managerial Ability Moderated Available Slack and Firm Performance

Based on [23], managerial ability is crucial in leveraging available slack to support corporate strategic objectives. Skilled managers can efficiently allocate resources and swiftly respond to market challenges and opportunities, enabling firms to enhance performance and foster innovation. Strong managerial abilities assist organizations in identifying new opportunities and formulating effective strategies to utilize available slack. Consequently, firms with competent management can harness available slack as a strategic asset to outcompete rivals.

However, a study by [38] shows that managerial ability significantly moderates the relationship between available slack and firm performance. High managerial ability allows firms to effectively allocate and utilize organizational slack, which in turn enhances performance outcomes such as those reflected in Tobin's Q. Managers with greater ability are better equipped to adapt to changing market conditions, make strategic decisions, and ensure that slack resources are efficiently deployed to drive firm success. This ability to optimize slack resources strengthens the link between management practices and overall firm performance, highlighting the critical role of managerial competence in translating available slack into improved organizational outcomes.

According to [13], the study concludes that managerial ability significantly moderates the relationship between available slack and firm performance. High managerial ability enables managers to efficiently allocate slack resources, directing them to strategies that enhance performance. Skilled managers are better at navigating uncertainties, making informed decisions, and optimizing resource use, which ultimately leads to improved firm performance. The moderation effect of managerial ability strengthens the link between slack and firm success, highlighting its critical role in leveraging resources for optimal organizational outcomes.

This hypothesis offers a novel contribution to literature because earlier studies haven't clearly connected how well managers handle available slack with the company's performance, which is measured by market value and return on assets.

H_{5a}: Managerial ability moderates the influence of available slack on firm performance (Tobin's Q).

H_{5b}: Managerial ability moderates the influence of available slack on firm performance (ROA).

Managerial Ability Moderated Recoverable Slack and Firm Performance

According to [38], managerial ability moderates the relationship between recoverable slack and firm performance. Recoverable slack, or resources that can be reallocated when needed, offers flexibility for firms. High managerial ability allows for efficient utilization of these resources, improving performance through better strategic decisions and resource optimization. Skilled managers enhance the link between slack and firm performance, leading to improved outcomes like Tobin's Q, emphasizing the role of managerial ability in leveraging recoverable slack for firm success.

A study by [13] concluded that managerial ability significantly moderates the relationship between recoverable slack and firm performance. High managerial ability allows managers to effectively allocate slack resources, ensuring they are directed toward value-creating opportunities. Skilled managers excel at forecasting, managing uncertainties, and optimizing resource use, leading to improved firm performance. This moderation effect enhances the firm's ability to leverage available slack for strategic decision-making, ultimately driving better outcomes and strengthening the link between slack resources and firm success.

However, a study by [23] showed that strong managerial ability can optimally allocate and utilize recoverable slack, reducing waste and enhancing innovation efficiency. Competent managers can make rational resource allocation decisions, ensuring that recoverable slack functions as a strategic asset supporting operational efficiency and firm performance. This hypothesis offers a novel contribution to the literature, as no previous studies have linked managerial ability in managing recoverable slack with firm performance, as measured by market value or return on assets.

H_{6a}: Managerial ability moderates the influence of recoverable slack on firm performance (Tobin's Q).

H_{6b}: Managerial ability moderates the influence of recoverable slack on firm performance (ROA).

Managerial Ability Moderated Potential Slack and Firm Performance

[13] concluded that managerial ability significantly moderates the relationship between potential slack and firm performance. High managerial ability enables managers to effectively utilize surplus resources, directing them toward strategies that drive performance improvement. Skilled managers are better equipped to make informed decisions, adapt to changing conditions, and optimize resource allocation, leading to enhanced firm outcomes. The moderation effect of managerial ability strengthens the connection between potential slack and firm success, emphasizing its crucial role in leveraging resources to achieve optimal organizational results.

According to [23], competent managers can leverage potential slack to drive innovation and operational efficiency. With access to potential slack, managers can explore new opportunities and make strategic decisions without being overly concerned about short-term risks. Strong managerial ability also enables managers to build strategic partnerships that support innovation and enhance the company's reputation.

A study by [38] showed that managerial ability moderates the relationship between potential slack and firm performance. High managerial ability allows firms to effectively utilize surplus resources, turning potential slack into strategic advantages. Skilled managers can allocate these resources efficiently, leading to improved outcomes such as Tobin's Q. This highlights the importance of managerial competence in maximizing the value of potential slack for enhanced firm performance.

Consequently, the combination of potential slack and practical managerial ability can create an environment conducive to growth and improved firm performance. This hypothesis offers a novel contribution to literature, as no previous studies have linked managerial ability in managing potential slack with firm performance.

H_{7a}: Managerial ability moderates the influence of potential slack on firm performance (Tobin's Q).

H_{7b}: Managerial ability moderates the influence of potential slack on firm performance (ROA).

RESEARCH METHOD

Sample

The sample for this study consists of non-financial firms in the ASEAN 5 region for the period 2019-2023. This study selected ASEAN 5 because it provides better access to data from financial statements obtained from S&P Capital IQ. These countries have strong financial infrastructures and many listed firms, making them ideal for analyzing firm performance. We excluded financial industry companies from the sample due to their different accounting treatments and financial reporting interpretations. The research sample presented in Table 1 consists of companies with specific criteria as required by the researcher.

Of the total companies, 37 listed their shares after 2019 and delisted before 2023; 629 did not have complete financial statements; and 897 experienced losses during the period of 2019–2023. Therefore, the final research sample consisted of 678 companies with 5-year data coverage, resulting in 3,390 observations for descriptive statistics and relevant tests to achieve the research objectives.

The research data used is unbalanced panel data, where not all companies have the same years from 2003 to 2019, resulting in 460 company-year observations. Table 1 describes this research sample.

Table 1. Description of the Research Sample

Descriptive	Total
ASEAN 5 non-financial company	2.241
Companies that underwent listing and delisting activities during the period 2019-2023	(37)
Companies with incomplete financial statement data for the period 2019-2023	(629)
Companies that incurred losses during the period 2019-2023	(897)
Companies that can be analyzed	678
The number of observations of the research sample 2019-2023	3.390

Variable Measurement

Dependent Variable

Tobin's Q

Tobin's Q is a standard proxy for measuring firm performance. It represents the ratio of a firm's market value of assets to its replacement cost. This ratio reflects the market's perception of the firm's future growth potential and profitability [34]. The formula for measuring firm performance in this study is as follows:

$$TQ = \frac{Total\ Market\ Value\ of\ Firm + Debt}{Total\ Assets}$$

Return on Asset (ROA)

Return on Asset (ROA) is a financial ratio that assesses a company's efficiency in generating profits from its assets, serving as an indicator of a company's performance. ROA evaluates management's productivity in utilizing assets to achieve profits [34]. The calculation of ROA in this study uses the following formula:

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

Independent Variable

Available Slack

The first independent variable in this study is available slack, which is measured using the current ratio. This proxy helps assess the level of available slack that a firm can use to address unexpected financial situations [17]. In this study, the formula used, adapted from previous research, is as follows:

$$ASLACK = \frac{Current\ Assets}{Current\ Liabilities}$$

Recoverable Slack

Recoverable slack is a factor we will look at in this study, calculated by comparing selling, general, and administrative expenses to total sales to show how well a company manages its spending [34]. We calculate recoverable slack using the following formulas:

$$RSLACK = \frac{Total\ SG\&A}{Net\ Sales}$$

Potential Slack

Potential slack is an independent variable tested in this study and is measured using the debt-to-equity ratio to assess a firm's financial reserves in the face of uncertainty [2]. The calculation of potential slack yields good results using the following formula:

$$PSLACK = \frac{Total\ Debt}{Total\ Equity}$$

Moderating Variable

Managerial Ability

We tested managerial ability as both an independent and moderating variable. In earlier studies, researchers used a two-step method to figure out managerial ability, which involved using data envelopment analysis (DEA) to evaluate how well a company uses its resources and then looking at how the company's efficiency is affected by its specific traits. We use the resultant residual value of maximum efficiency to estimate managerial ability [14]. We obtain the residual value through the following two stages:

Stage 1 – Data Envelopment Analysis (DEA)

$$Max = \frac{Sales}{(COGS + SGA + PPE + OpLease + RD + Goodwill + OtherIntangible)}$$

Stage 2 – Firm Efficiency

$$Firm\ Efficiency = \alpha_0 + \beta_1 Ln(Total\ Assets) + \beta_2 Market\ Share + \beta_3 Free\ Cash\ Flow\ Indicator$$

$$+\beta_4 Ln(Age)$$
$$+\beta_5 Business\ Segment\ Concentration$$
$$+\beta_6 Foreign\ Currency\ Indicator$$
$$+Year + \varepsilon$$

Control Variable

Size

Firm size is a critical contingency element that impacts a company's ability to implement strategies, manage resources, and achieve a competitive advantage. This study uses the natural logarithm of total assets as a measure of firm size to address the significant differences between large and small firms [34].

$$SIZE = \text{Ln}\ (Total\ Assets)$$

Age

Firm age is used as a performance indicator that reflects a company's experience, stability, and capabilities, calculated by subtracting the year of the study from the year the company was founded [34].

$$AGE = Year_t - Year_n$$

Debt-to-Asset Ratio (DAR)

Debt-to-asset ratio (DAR) is used as a control variable to depict the proportion of assets financed by debt in the company's operations, reflecting the company's reliance on debt [30] .

$$DAR = \frac{Total\ Debt}{Total\ Asset}$$

Gross Domestic Product Growth

Differences in real economic growth rates across countries are a significant factor in international research and can be measured through GDP growth from one period to the next [4]. This study uses GDP growth as a control variable.

$$GROWTH = \frac{GDP_t - GDP_{t-1}}{GDP_{t-1}}$$

Research Model

Model 1

We use Model 1 to test the influence of available slack (ASLACK), recoverable slack (RSLACK), and potential slack (PSLACK) on a firm's performance based on market value (TQ). We formulate the panel data linear regression equation as follows:

$$TQ_{i,t} = \alpha_0 + \beta_1 ASLACK_{i,t} + \beta_2 RSLACK_{i,t} + \beta_3 PSLACK_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 AGE_{i,t} + \beta_6 DAR_{i,t} + \beta_7 GROWTH_{i,t} + \varepsilon_{i,t}$$

Model 2

We use Model 2 to test the influence of available slack (ASLACK), recoverable slack (RSLACK), and potential slack (PSLACK) on a firm's performance-based return on asset (ROA). We formulate the panel data linear regression equation as follows:

$$ROA_{i,t} = \alpha_0 + \beta_1 ASLACK_{i,t} + \beta_2 RSLACK_{i,t} + \beta_3 PSLACK_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 AGE_{i,t} + \beta_6 DAR_{i,t} + \beta_7 GROWTH_{i,t} + \varepsilon_{i,t}$$

Model 3

We use Model 3 to test the influence of managerial ability (MABILITY) on firm performance based on market value (TQ). We formulate the panel data linear regression equation as follows:

$$TQ_{i,t} = \alpha_0 + \beta_1 ASLACK_{i,t} + \beta_2 RSLACK_{i,t} + \beta_3 PSLACK_{i,t} + \beta_4 MABILITY_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 AGE_{i,t} + \beta_7 DAR_{i,t} + \beta_8 GROWTH_{i,t} + \varepsilon_{i,t}$$

Model 4

We use Model 4 to test the influence of managerial ability (MABILITY) on a firm's performance-based return on asset (ROA). We formulate the panel data linear regression equation as follows:

$$ROA_{i,t} = \alpha_0 + \beta_1 ASLACK_{i,t} + \beta_2 RSLACK_{i,t} + \beta_3 PSLACK_{i,t} + \beta_4 MABILITY_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 AGE_{i,t} + \beta_7 DAR_{i,t} + \beta_8 GROWTH_{i,t} + \varepsilon_{i,t}$$

Model 5

We use Model 5 to examine the moderating effect of managerial ability on the influence of organizational slack on firm performance based on market value. Hence, we formulate the panel data linear regression equation as follows:

$$TQ_{i,t} = \alpha_0 + \beta_1 ASLACK_{i,t} + \beta_2 RSLACK_{i,t} + \beta_3 PSLACK_{i,t} + \beta_4 MABILITY_{i,t} + \beta_5 ASLACK_{i,t} * MABILITY_{i,t} + \beta_6 RSLACK_{i,t} * MABILITY_{i,t}$$

$$+\beta_7 PSLACK_{i,t} * MABILITY_{i,t} + \beta_8 SIZE_{i,t} + \beta_9 AGE_{i,t} + \beta_{10} DAR_{i,t} + \beta_{11} GROWTH_{i,t} + \varepsilon_{i,t}$$

Model 6

We use Model 6 to examine the moderating effect of managerial ability on the influence of organizational slack on firm performance based on return on assets. Hence, we formulate the panel data linear regression equation as follows:

$$ROA_{i,t} = \alpha_0 + \beta_1 ASLACK_{i,t} + \beta_2 RSLACK_{i,t} + \beta_3 PSLACK_{i,t} + \beta_4 MABILITY_{i,t} + \beta_5 ASLACK_{i,t} * MABILITY_{i,t} + \beta_6 RSLACK_{i,t} * MABILITY_{i,t} + \beta_7 PSLACK_{i,t} * MABILITY_{i,t} + \beta_8 SIZE_{i,t} + \beta_9 AGE_{i,t} + \beta_{10} DAR_{i,t} + \beta_{11} GROWTH_{i,t} + \varepsilon_{i,t}$$

This study will conduct several analyses to test the hypotheses, including descriptive statistical analyses, Pearson correlation analyses, panel data linear regression, and moderation regression analysis.

RESULTS AND DISCUSSION

Descriptive Statistics

Based on the descriptive statistics in Table 2, the main variables in this study have a wide range between their minimum and maximum values, reflecting substantial differences in the characteristics of the analyzed firms. The mean values of each variable indicate general tendencies within the sample, while the standard deviations suggest the degree of data dispersion from the mean. Firm size and firm age display a wide distribution, indicating the presence of companies with highly diverse scales and operational lifespans. Additionally, slack and managerial ability variables show considerable differences between their minimum and maximum values, suggesting that some firms have substantial resource flexibility and managerial efficiency. In contrast, others face significant constraints in these aspects.

Meanwhile, Table 3 provides an overview of the distribution of companies by sector and country. The distribution is not uniform across sectors, with some sectors having a significantly higher number of firms compared to others. The industrial and consumer goods sectors have the largest number of firms in the sample, highlighting their dominance in the ASEAN countries analyzed. In contrast, sectors such as communication and utilities have fewer firms, indicating a limited sample representation in these industries. In terms of country distribution, the number of firms varies across nations, with one country having the highest number of firms in the sample. This discrepancy may reflect differences in the development of capital markets across ASEAN countries.

Table 2. Descriptive Statistics

Variable	*Obs*	*Mean*	*Std. dev.*	*Min*	*Max*
TQ	3,390	1.288	1.215	0.052	7.110
ROA	3,390	0.690	0.054	0.002	0.272
ASLACK	3,390	2.611	2.168	0.367	12.267
RSLACK	3,390	0.520	0.237	0.021	1.160
PSLACK	3,390	0.501	0.571	0.001	2.896
MABILITY	3,390	0.854	0.095	0.660	1.210
ASLACK* MABILITY	3,390	2.222	1.867	0.243	12.758
RSLACK* MABILITY	3,390	0.443	0.208	0.015	1.246
PSLACK* MABILITY	3,390	0.429	0.496	0.001	3.215
SIZE	3,390	14.524	1.676	11.179	19.373
AGE	3,390	33.702	19.702	4	117
DAR	3,390	0.214	0.166	0.001	0.634
GROWTH	3,390	0.020	0.042	-0.061	0.097

Table 3. Distribution Companies by Sector and Country

Sector	IDN	MYS	SGP	THA	PHL	Tot.
Communication Services	0	0	2	11	2	15
Consumer Discretionary	10	34	16	31	4	95
Consumer Staples	20	32	11	37	4	104
Energy	5	8	3	8	0	24
Health Care	5	11	4	20	1	41
Industrials	25	76	28	61	9	199
Information Technology	6	28	10	27	4	75
Materials	14	30	8	30	6	88
Real Estate	0	4	1	1	0	6
Utilities	2	5	2	16	6	31
Total	87	288	85	242	36	678

Regression Model Selection

Chow Test

The Chow test was conducted as a preliminary step to determine whether a common or fixed effects model would be more suitable for the panel data analysis. Based on Table 4 below, the Chow test results for all six models yielded a probability value of 0.0000, which is significantly below the 5% significance level. This finding indicates a significant difference among cross-sectional units, suggesting that a fixed effects model is more appropriate. We will subject all six models to the Hausman test to further confirm this.

Table 4. Chow Test

Model	Chi²	Prob> Chi²	Result
Model 1	9.54	0.0000	Fixed Effect Model
Model 2	10.43	0.0000	Fixed Effect Model
Model 3	9.55	0.0000	Fixed Effect Model
Model 4	10.33	0.0000	Fixed Effect Model
Model 5	9.49	0.0000	Fixed Effect Model
Model 6	10.31	0.0000	Fixed Effect Model

Hausman Test

The Chow test, which showed significance at a level below 0.05, preceded the Hausman test. The objective of the Hausman test is to select the most appropriate model by comparing the random effects and fixed effects models. Based on Table 5, the test results revealed a probability value of 0.0000 for models 1 to 6, signifying that Prob>Chi² is less than 0.05. Therefore, we can conclude that the fixed effects model is the best option for all six research models.

Table 5. Hausman Test

Model	Chi²	Prob>Chi²	Result
Model 1	114.58	0.0000	Fixed Effect Model
Model 2	361.02	0.0000	Fixed Effect Model
Model 3	112.42	0.0000	Fixed Effect Model
Model 4	380.06	0.0000	Fixed Effect Model
Model 5	119.53	0.0000	Fixed Effect Model
Model 6	402.04	0.0000	Fixed Effect Model

Classical Assumptions

Multicollinearity Test

Models 1 and 2

The multicollinearity test is used to evaluate the relationship between independent variables by looking at the Variance Inflation Factor (VIF) value. Based on Table 6, the results of the multicollinearity test for models 1 and 2 show an average VIF value of 7.71, which is less than 10, so there is no violation of multicollinearity. The VIF values for ASLACK are 3.00, PSLACK 5.07, and RSLACK 9.17, all under 10, which shows that the independent variables in models 1 and 2 do not have multi-collinearity issues.

Table 6. Multicollinearity Model 1 and 2

Variable	VIF	1/VIF
SIZE	15.78	0.063379
DAR	15.16	0.065952
PSLACK	9.17	0.109063
RSLACK	5.07	0.197228
AGE	4.52	0.221287
ASLACK	3.00	0.333268
GROWTH	1.27	0.786979
Mean VIF	**7.71**	

Model 3 and 4

Table 7 presents the results of the multi-collinearity test. The average VIF value is 17.94, exceeding the threshold of 10, indicating a violation of multicollinearity in models 3 and 4. The addition of MABILITY as an independent variable in the moderation model causes this violation. Specifically, the VIF values for ASLACK, RSLACK, PSLACK, and MABILITY are 3.12, 5.57, 9.19, and 48.07, respectively. Therefore, we can conclude that models 3 and 4 exhibit multicollinearity.

Table 7. Multicollinearity Model 3 and 4

Variable	VIF	1/VIF
SIZE	56.27	0.017770
MABILITY	48.07	0.020803
DAR	15.20	0.065780
PSLACK	9.19	0.108758
RSLACK	5.57	0.179583
AGE	4.80	0.208218
ASLACK	3.12	0.320756
GROWTH	1.27	0.786533
Mean VIF	**17.94**	

Models 5 and 6

According to Table 8, the multicollinearity test for models 5 and 6 shows an average VIF value of 119.26, which is higher than the limit of 10, meaning there is a problem with multicollinearity. The high VIF value is caused by the moderating variable MABILITY. The VIF values for ASLACK, RSLACK, PSLACK, and MABILITY are 170.60, 262.51, 109.85, and 107.55, respectively. Therefore, we can conclude that models 5 and 6 violate multicollinearity.

Table 8. Multicollinearity Model 5 and 6

Variable	VIF	1/VIF
RSLACK*MABILITY	265.90	0.003761
RSLACK	262.51	0.003809
ASLACK*MABILITY	171.19	0.005842
ASLACK	170.60	0.005862
PSLACK	109.85	0.009103
MABILITY	107.55	0.009298
PSLACK*MABILITY	101.80	0.009823
SIZE	101.16	0.009885
DAR	15.23	0.065648
AGE	4.85	0.206244
GROWTH	1.27	0.786101
Mean VIF	**119.26**	

Overall, we can conclude that models 1 to 6 suffer from multicollinearity. Cross-sectional dependence, where the probability value of 0.0000 is below 5% (0.05), causes this violation. Therefore, we applied the Driscoll-Kraay standard error treatment to address cross-sectional dependence.

Heteroscedasticity Test

The heteroscedasticity test using the Modified Wald Test on all six-panel data regression models indicates the presence of heteroscedasticity. Based on Table 9, the probability value for models 1 to 6 is 0.0000 (Prob>Chi² = 0.0000 < 0.1), which shows that the probability value is below the significance level of 10%. The result indicates that in all six research

models, there is an irregularity in the variance of the residuals; in other words, there is a violation of heteroscedasticity that needs to be considered in further analysis.

Table 9. Heteroscedasticity Result

Model	Prob>Chi²
Model 1	0.0000
Model 2	0.0000
Model 3	0.0000
Model 4	0.0000
Model 5	0.0000
Model 6	0.0000

Autocorrelation Test

An autocorrelation test was conducted using the Woolridge Test on all six-panel data regression models to detect autocorrelation violation. A good result indicates a probability value greater than 0.05 (5%). Based on Table 10, the autocorrelation test on models 1 to 6 shows a violation, with a probability value of 0.0000, lower than 0.05 (5%), indicating the presence of autocorrelation violation. This could be caused by cross-sectional dependence, requiring Driscoll-Kraay standard error treatment.

Table 10. Autocorrelation Result

Model	Chi²	Prob>F
Model 1	64.614	0.0000
Model 2	51.714	0.0000
Model 3	64.051	0.0000
Model 4	51.463	0.0000
Model 5	65.358	0.0000
Model 6	51.331	0.0000

Model Specification Test

The F-statistic test in this study uses three significance levels: 1%, 5%, and 10%. We assess the quality of the F-test based on a probability (Prob>F) of less than 10%. All six models use the fixed effects model in this panel data analysis. Based on Table 11, the Prob>F value for models 1 to 6 is 0.0000, indicating a significant influence of the independent variables on the dependent variable. This result confirms that the research model can describe the relationship between the variables well and is reliable.

Table 11. f-Test Result

Model	Prob>F
Model 1	0.0000
Model 2	0.0000
Model 3	0.0000
Model 4	0.0000
Model 5	0.0000
Model 6	0.0000

Coefficient of Determination

The coefficient of determination test in this study uses Driscoll-Kraay standard errors. The R-squared value represents the proportion of the dependent variable's variation explained by the independent variables. According to Table 12, Model 1 has an R-squared value of 0.1181, which means that the independent variables (ASLACK, RSLACK, PSLACK) account for 11.81% of the changes in company performance (TQ). In comparison, other factors explain the remaining 88.19%. Model 2 shows an R-squared of 0.4175, indicating that the independent variables explain 41.75% of the variation in ROA.

Models 3 and 4, which include managerial ability (MABILITY), show R-squared values of 0.1196 for TQ and 0.4177 for ROA, meaning that the independent variables account for 11.96% of the changes in TQ and 41.77% of the changes in ROA. Models 5 and 6 have R-squared values of 0.1228 and 0.4201, meaning the independent variables explain the 12.28% (TQ) and 42.01% (ROA) of the variation in company performance.

Table 12. Coefficient of Determination

Model	Within R-squared
Model 1	0.1181
Model 2	0.4175
Model 3	0.1196
Model 4	0.4177
Model 5	0.1228
Model 6	0.4201

Hypothesis Test

Model 1

Table 13. T-Test Result Model 1

Variable	Coefficient	Prob/2	Conclusion
ASLACK	0.0512456	0.0005***	H_{1a} supported
RSLACK	-0.3710932	0.0005***	H_{2a} supported
PSLACK	-0.1873412	0.000***	H_{3a} supported
SIZE	0.7270602	0.000***	
AGE	-0.0336993	0.078*	
DAR	-1.453228	0.000***	
GROWTH	-0.0644014	0.457	
CONS	-7.671739		

***,**,* significant level 1% (0.01), 5% (0.05), 10% (0.10) respectively

According to Table 13, the t-test results for model 1 indicate that Available Slack (ASLACK) has a probability value of 0.0005 (one-tailed), which is significant at the 1% level, and a correlation coefficient of 0.0512, meaning that more ASLACK is linked to better company performance. This means the higher the ASLACK, the better the company's performance, thus supporting H1a. Recoverable Slack (RSLACK) has a probability value of 0.0005 (one-tailed), significant at the 1% level, with a correlation coefficient of -0.3711, indicating a negative effect on company performance. The higher the RSLACK, the worse the company's performance, which supports hypothesis H2a. Potential Slack

(PSLACK) also shows a probability value of 0.000 (one-tailed), significant at the 1% level, with a correlation coefficient of -0.1873, indicating a negative effect on company performance. The higher the PSLACK, the worse the company performance, which supports hypothesis H3a.

Model 2

According to Table 14 below, the t-test results for model 2 indicate that available slack (ASLACK) has a probability value of 0.000 (one-tailed), which is significant at the 1% level, and a correlation coefficient of -0.0026, showing that higher ASLACK negatively affects company performance measured by return on assets. The higher the ASLACK, the lower the company's performance, thus supporting H1b. Recoverable slack (RSLACK) has a probability value of 0.000 (one-tailed), significant at the 1% level, with a correlation coefficient of -0.2035, indicating a negative effect on company performance. The higher the RSLACK, the lower the company's performance, thus supporting H2b. Potential slack (PSLACK) has a probability value of 0.084 (one-tailed), which is significant at the 10% level, with a correlation coefficient of -0.0044, indicating a negative effect on company performance. The higher the PSLACK, the lower the company performance, thus supporting H3b.

Table 14. t-Test Result Model 2

Variable	Coefficient	Prob/2	Conclusion
ASLACK	-0.0025909	0.000***	H_{1b} supported
RSLACK	-0.2035255	0.000***	H_{2b} supported
PSLACK	-0.0043666	0.084**	H_{3b} supported
SIZE	0.7270602	0.000***	
AGE	-0.0336993	0.000***	
DAR	-1.453228	0.000***	
GROWTH	-0.0644014	0.457	
CONS	-7.671739		

***,**,* significant level 1% (0.01), 5% (0.05), 10% (0.10) respectively

Model 3

Table 15. t-Test Result Model 3

Variable	Coef.	Prob/2	Conclusion
ASLACK	0.0509135	0.0005***	
RSLACK	-0.3816082	0.0005***	
PSLACK	-0.1805581	0.000***	
MABILITY	-0.5755188	0.000***	H_{4a} not supported
SIZE	0.7246863	0.000***	
AGE	-0.0354035	0.0515***	
DAR	-1.48637	0.000***	
GROWTH	-0.0257427	0.4815	
CONS	-7.079201		

***,**,* significant level 1% (0.01), 5% (0.05), 10% (0.10) respectively

The regression results in Table 15 show that managerial ability (MABILITY) has a probability value of 0.000 (one-tailed), significant at the 1% level, with a correlation coefficient of -0.5755. This indicates that managerial ability has a negative effect on company performance as measured by market value. The higher the organizational ability, the lower the company performance, which rejects hypothesis H4a.

Model 4

The regression results in Table 16 below show that managerial ability (MABILITY) has a probability value of 0.0285 (one-tailed), significant at the 1% level, with a correlation coefficient of -0.0085. This indicates a negative effect of managerial ability on company performance as measured by return on assets. The higher the managerial ability, the lower the company's performance, which rejects hypothesis H4b.

Table 16. t-Test Result Model 4

Variable	Coef.	Prob/2	Conclusion
ASLACK	-0.0025958	0.000***	
RSLACK	-0.2036801	0.000***	
PSLACK	-0.0042669	0.0865*	
MABILITY	-0.0084626	0.0285**	H_{4b} not supported
SIZE	-0.0299757	0.000***	
AGE	0.0014163	0.000***	
DAR	-0.0605592	0.000***	
GROWTH	0.0410547	0.000***	
CONS	0.5911687	0.000***	

***,**,* significant level 1% (0.01), 5% (0.05), 10% (0.10) respectively

Model 5

Table 17. t-Test Result Model 5

Variable	Coef.	Prob/2	Conclusion
ASLACK	-0.097401	0.1765	
RSLACK	1.496967	0.000***	
PSLACK	0.0124192	0.465	
MABILITY	0.0999324	0.4135	
ASLACK* MABILITY	0.1696108	0.096*	H_{5a} supported
RSLACK* MABILITY	-2.196922	0.000***	H_{6a} supported
PSLACK* MABILITY	-0.2230419	0.0565*	H_{7a} supported
SIZE	0.7094365	0.000***	
AGE	-0.0335122	0.0465**	
DAR	-1.45535	0.000***	
GROWTH	-0.0015462	0.4990	
CONS	-7.49991		

***,**,* significant level 1% (0.01), 5% (0.05), 10% (0.10) respectively

Based on Table 17, the regression results for model 5 indicate an interaction between the independent variables and managerial ability on firm performance, measured by market value. First, the interaction between Available Slack and Managerial Ability (ASLACK*MABILITY) has a probability of 0.096 (one-tailed), which is significant

at the 10% level with a coefficient of 0.1696, indicating that managerial ability moderates this relationship, thus supporting H5a. Second, Recoverable Slack with Managerial Ability (RSLACK*MABILITY) has a probability of 0.000 (one-tailed), which is significant at the 1% level with a coefficient of -2.1969, confirming managerial ability as a moderator, supporting H6a. Third, Potential Slack with Managerial Ability (PSLACK*MABILITY) shows a probability of 0.0565 (one-tailed), significant at the 10% level, with a coefficient of -0.2230, thus supporting H7a.

Model 6

Table 18 presents the regression results for model 6, which tests the interaction between independent variables and managerial ability on firm performance, measured by return on assets. First, the interaction between Available Slack and Managerial Ability (ASLACK*MABILITY) has a probability of 0.106 (one-tailed), not significant at the 10% level, with a coefficient of -0.0053, thus rejecting H5b. Second, Recoverable Slack with Managerial Ability (RSLACK*MABILITY) has a probability of 0.000 (one-tailed), significant at the 1% level, and a coefficient of -0.1019, supporting H6b. Third, Potential Slack with Managerial Ability (PSLACK*MABILITY) shows a probability of 0.321 (one-tailed), not significant at the 10% level, with a coefficient of -0.0039, which rejects hypothesis H7b.

Table 18. t-Test Result Model 6

Variable	Coef.	Prob/2	Conclusion
ASLACK	0.0018849	0.3065	
RSLACK	-0.116801	0.000***	
PSLACK	-0.0006289	0.4655	
MABILITY	0.0498842	0.074	
ASLACK* MABILITY	-0.0052753	0.106	H_{5b} not supported
RSLACK* MABILITY	-0.1018675	0.000***	H_{6b} supported
PSLACK* MABILITY	-0.0038714	0.321	H_{7b} not supported
SIZE	-0.0298033	0.000***	
AGE	0.0013906	0.000***	
DAR	-0.0626662	0.000***	
GROWTH	0.0419587	0.000***	
CONS	0.5399429		

***,**,* significant level 1% (0.01), 5% (0.05), 10% (0.10) respectively

Hypothesis by Country

Based on Table 19, it was found that support for the research hypotheses varied across the ASEAN countries analyzed. From the hypothesis testing results, Thailand showed more supported hypotheses than other countries, indicating that the relationship between organizational slack, firm performance, and the moderating role of managerial ability is stronger in the context of Thailand companies. The support for hypotheses in Thailand reflects that firms in this country are more capable of efficiently utilizing available resources, with managerial roles playing a more significant part in optimizing the impact of organizational slack on firm performance.

However, the majority of the results from Indonesia did not support the research hypotheses. This suggests that organizational slack may not significantly impact firm performance in the context of Indonesian firms, or other factors may play a more dominant role in determining firm performance than those examined in this study. Additionally, the moderating role of managerial ability in Indonesia does not exert enough influence to strengthen the relationship between organizational slack and firm performance.

Table 19. Hypothesis Test by Country

	IDN	MYS	SGP
H1a	Not Supported	Not Supported	Not Supported
H1b	Supported	Not Supported	Not Supported
H2a	Not Supported	Not Supported	Not Supported
H2b	Not Supported	Supported	Supported
H3a	Not Supported	Supported	Supported
H3b	Supported	Supported	Supported
H4a	Not Supported	Supported	Not Supported
H4b	Supported	Not Supported	Not Supported
H5a	Not Supported	Not Supported	Not Supported
H5b	Not Supported	Not Supported	Not Supported
H6a	Not Supported	Not Supported	Not Supported
H6b	Not Supported	Supported	Not Supported
H7a	Not Supported	Not Supported	Not Supported
H7b	Not Supported	Supported	Not Supported
	THA	**PHL**	
H1a	Supported	Supported	
H1b	Not Supported	Not Supported	
H2a	Supported	Not Supported	
H2b	Supported	Supported	
H3a	Not Supported	Not Supported	
H3b	Not Supported	Not Supported	
H4a	Not Supported	Not Supported	
H4b	Not Supported	Supported	
H5a	Supported	Not Supported	
H5b	Not Supported	Not Supported	
H6a	Supported	Supported	
H6b	Supported	Supported	
H7a	Supported	Not Supported	
H7b	Not Supported	Supported	

Hypothesis by Sector

Based on Table 20, the sector with the highest number of supported hypotheses is the *real estate* sector, with nine supported hypotheses. This finding indicates that the impact of *organizational slack* on firm performance, moderated by managerial ability, is more significant in this sector than in others. Conversely, the *communication services* sector has the fewest supported hypotheses, with only two

receiving supports. This suggests that organizational slack has a weaker influence on firm performance in this sector, and the moderating role of managerial ability is less significant. Additionally, the *materials* and *real estate* sectors demonstrate a more substantial impact of managerial ability as a moderating variable than other sectors. This could be due to the nature of these industries, which require more complex strategic decision-making to effectively utilize *organizational slack* for improving firm performance. Overall, this study highlights that the effects of *organizational slack* on firm performance and the moderating role of managerial ability vary across industries, with the *real estate* and *materials* sectors showing the most significant impact.

Table 20. Hypothesis Test by Sector

	Communication Service	Consumer Discretionary
H1a	Supported	Not Supported
H1b	Not Supported	Not Supported
H2a	Not Supported	Not Supported
H2b	Supported	Supported
H3a	Not Supported	Not Supported
H3b	Not Supported	Not Supported
H4a	Not Supported	Not Supported
H4b	Not Supported	Supported
H5a	Not Supported	Not Supported
H5b	Not Supported	Supported
H6a	Not Supported	Supported
H6b	Not Supported	Supported
H7a	Not Supported	Not Supported
H7b	Not Supported	Not Supported
	Consumer Staples	**Energy**
H1a	Supported	Supported
H1b	Not Supported	Not Supported
H2a	Not Supported	Supported
H2b	Supported	Supported
H3a	Not Supported	Not Supported
H3b	Supported	Not Supported
H4a	Not Supported	Not Supported
H4b	Supported	Supported
H5a	Supported	Not Supported
H5b	Not Supported	Not Supported
H6a	Supported	Not Supported
H6b	Supported	Supported
H7a	Not Supported	Not Supported
H7b	Not Supported	Not Supported
	Health Care	**Industrials**
H1a	Not Supported	Supported
H1b	Not Supported	Not Supported
H2a	Not Supported	Supported
H2b	Supported	Supported
H3a	Not Supported	Not Supported
H3b	Not Supported	Not Supported
H4a	Not Supported	Not Supported
H4b	Not Supported	Supported
H5a	Not Supported	Not Supported
H5b	Not Supported	Not Supported
H6a	Not Supported	Not Supported
H6b	Supported	Supported
H7a	Not Supported	Supported
H7b	Not Supported	Supported
	Information Technology	**Materials**
H1a	Supported	Not Supported
H1b	Not Supported	Not Supported
H2a	Not Supported	Supported
H2b	Supported	Supported
H3a	Not Supported	Not Supported
H3b	Supported	Not Supported
H4a	Not Supported	Not Supported
H4b	Not Supported	Not Supported
H5a	Supported	Supported
H5b	Supported	Supported
H6a	Not Supported	Supported
H6b	Supported	Supported
H7a	Not Supported	Supported
H7b	Supported	Not Supported
	Real Estate	**Utilities**
H1a	Not Supported	Not Supported
H1b	Supported	Not Supported
H2a	Not Supported	Not Supported
H2b	Supported	Supported
H3a	Supported	Not Supported
H3b	Not Supported	Not Supported
H4a	Supported	Not Supported
H4b	Not Supported	Not Supported
H5a	Not Supported	Not Supported
H5b	Supported	Supported
H6a	Supported	Not Supported
H6b	Supported	Not Supported
H7a	Supported	Supported
H7b	Supported	Supported

Discussion

Influence of Available Slack on Firm Performance

Table 13 demonstrates that available slack positively influences firm performance, as measured by Tobin's Q, thereby supporting H1a. A high current ratio, which indicates available slack, provides financial flexibility that enables firms to navigate market uncertainties, invest in growth opportunities, and implement strategic initiatives. Strong liquidity allows firms to absorb financial shocks, sustain operations during downturns, and capitalize on emerging opportunities, ultimately enhancing financial stability. This, in turn, increases investor confidence and raises the firm's market valuation, as reflected in Tobin's Q. The positive relationship suggests that maintaining adequate available slack is crucial for firms seeking to enhance their market-based performance, as it signals financial strength and resilience.

Conversely, Table 14 indicates that available slack negatively affects firm performance when measured by return on assets (ROA), supporting H1b. While available slack provides firms with short-term liquidity, excessive current assets not efficiently deployed can lead to lower profitability. Firms that hold excessive liquidity without optimizing its use may experience inefficiencies in asset allocation, resulting in missed investment opportunities and decreased operational effectiveness. Over time, this

inefficiency reduces the firm's ability to generate profits, lowering ROA. This finding aligns with the notion that while liquidity is essential, excessive slack can lead to complacency, suboptimal decision-making, and inefficient capital utilization, ultimately hampers profitability.

The findings of this study are consistent with previous research. [19] also found a positive influence of available slack on Tobin's Q, reinforcing that liquidity strengthens market-based performance by signaling financial health and strategic flexibility. Additionally, [4] and [1] provide further empirical support for the negative relationship between available slack and ROA, emphasizing that firms with excessive liquidity but poor asset utilization tend to experience declining profitability.

These results highlight that available slack has two sides. It can improve a company's market value by offering financial security and flexibility, but too much slack can cause inefficiencies that hurt profits. So, companies need to find a balance in managing available slack, keeping enough cash to take advantage of opportunities while not holding too much that could lower efficiency and long-term finances.

Influence of Recoverable Slack on Firm Performance

Table 13 demonstrates that recoverable slack negatively influences firm performance, as measured by Tobin's Q, thereby supporting H2a. Recoverable slack, often represented by high administrative, general, and selling expenses, can indicate operational inefficiencies that erode firm value. When firms allocate excessive resources to non-productive costs rather than investing in growth-generating activities, market participants may perceive them as inefficient resource management. This perception can reduce investor confidence and lead to a lower market valuation. Unlike available slack, which provides financial flexibility, recoverable slack reflects resources that require managerial effort to reallocate or reduce, potentially burdening long-term firm performance. As a result, firms may attempt to minimize this form of slack to maintain their competitive positioning and enhance market value.

Similarly, Table 14 indicates that recoverable slack negatively influences firm performance when measured by return on assets (ROA), supporting H2b. Large operational expenditures associated with recoverable slack reduce a firm's profitability by increasing overhead costs without directly contributing to revenue generation. While some operational spending is necessary for business activities, excessive costs in administrative and general expenses may signify inefficiencies that constrain financial performance. If firms fail to control these expenditures effectively, their ability to maximize returns on assets declines, ultimately reducing their profitability. This underscores the need for firms to strategically allocate their operational spending to prioritize value-enhancing activities over unnecessary costs.

These findings are consistent with prior research. [37] found a negative influence of recoverable slack on Tobin's Q, highlighting the detrimental impact of excess operational expenses on market valuation. Furthermore, [1] documented a negative relationship between potential slack and ROA, further supporting the argument that excessive slack, if not managed effectively, can weaken a firm's profitability.

These results suggest that recoverable slack is a critical factor that firms must carefully regulate. While some slack may provide firms with flexibility, excessive recoverable slack is detrimental as it signals inefficiencies and misallocation of resources. Firms aiming to optimize their financial performance should focus on cost efficiency, ensuring that operational expenditures contribute to value creation rather than acting as a drag on profitability and market valuation.

Influence of Potential Slack on Firm Performance

Table 13 demonstrates that potential slack negatively influences firm performance, as measured by Tobin's Q, thereby supporting H3a. Potential slack, often represented by the debt-to-equity ratio, reflects a firm's reliance on external financing rather than internal resources. A high level of potential slack indicates a substantial debt burden relative to equity, which increases financial risk, reduces managerial flexibility, and erodes investor confidence. Firms with high debt obligations face greater financial constraints, limiting their ability to invest in growth opportunities, engage in strategic initiatives, or adapt to market fluctuations. Also, investors might see high leverage as a sign of financial trouble, which can result in a lower market value and a drop in Tobin's Q. Unlike available slack that offers cash flow, potential slack refers to a financial setup that, if too high, can turn into a disadvantage instead of a benefit.

Similarly, Table 14 indicates that potential slack negatively affects firm performance when measured by return on assets (ROA), supporting H3b. Firms that rely heavily on leverage face increasing financial obligations in the form of interest payments and debt servicing costs, which put pressure on profitability and overall asset efficiency. In times of economic uncertainty or

financial distress, firms with high leverage may struggle to maintain profitability, as a larger portion of their revenues is allocated to debt repayment rather than reinvestment in productive activities. High financial leverage can also reduce operational flexibility, making it more challenging for firms to optimize their asset utilization and sustain profitability. As a result, excessive potential slack weakens a firm's ability to generate returns from its assets, ultimately leading to lower ROA.

These findings align with previous research. [19] found a negative influence of potential slack on Tobin's Q, reinforcing the argument that high debt levels reduce market valuation due to perceived financial instability. Similarly, [4] reported a negative impact of potential slack on ROA, further supporting the notion that excessive leverage weakens a firm's profitability and asset efficiency.

These results highlight the critical role of financial structure in firm performance. While some level of leverage can benefit financing growth, excessive potential slack poses significant risks, including increased financial vulnerability, reduced investor confidence, and constrained managerial decision-making. Firms must carefully balance their debt-to-equity ratio to optimize performance, ensuring that financial leverage is managed prudently to support strategic growth without compromising financial stability or long-term profitability.

Influence of Managerial Ability on Firm Performance

Table 15 demonstrates that managerial ability negatively influences firm performance, as measured by Tobin's Q, thus supporting the rejection of H4a. Managerial ability, often associated with operational efficiency, does not always lead to increased market value, especially when the focus on efficiency comes at the cost of long-term growth opportunities. Firms that prioritize short-term operational improvements may reduce their investment in strategic initiatives, such as market expansion or innovation, which can lead to a lower perceived growth potential. As Tobin's Q reflects the market's perception of a firm's prospects, an excessive focus on efficiency, without balancing strategic investments, may erode investor confidence and reduce market valuation. Furthermore, firms with highly efficient but overly conservative management may miss growth opportunities that could enhance their market value, leading to a decline in Tobin's Q. This finding underscores the importance of managing operational efficiency and fostering an environment that encourages long-term growth and innovation.

Similarly, Table 16 reveals that managerial ability negatively affects firm performance when measured by return on assets (ROA), supporting the rejection of H4b. A strong emphasis on efficiency can lead to cost-cutting measures that impact investments in research and development, marketing, and other strategic areas essential for long-term profitability. While operational efficiency is vital for improving asset utilization, overemphasizing it can reduce a firm's ability to innovate and invest in opportunities that drive future profitability. This scenario becomes more evident during economic uncertainty, when firms that have scaled back on investments in future growth may struggle to generate sustainable returns. As a result, the firm's ability to generate returns from its assets, reflected in ROA, may decline, particularly if the focus on short-term efficiency stifles long-term profitability potential.

These findings contrast with the research of [6] and [24], who reported a positive influence of managerial ability on firm performance. The discrepancy may stem from differences in the research context, such as the countries and industries studied, or variations in the periods considered. Managerial ability may be more directly associated with improving operational efficiency and market valuation in more mature markets or industries with fewer growth opportunities. However, in environments where long-term growth opportunities are more abundant, managerial ability may have a more pronounced positive impact on performance metrics like Tobin's Q and ROA.

In conclusion, while this study's findings suggest a negative relationship between managerial ability and firm performance, they also highlight the importance of balancing efficiency with strategic investments. Firms that can strike this balance may enhance operational performance and long-term profitability, which could support the hypotheses H4a and H4b under different conditions or contexts. Therefore, managerial ability can positively influence firm performance if aligned with a broader strategy focusing on sustainable growth and innovation.

Managerial Ability Moderate the Influence of Available Slack on Firm Performance

Table 17 demonstrates that managerial ability moderates the relationship between available slack and firm performance, as measured by Tobin's Q, supporting H5a. Available slack, representing a firm's unutilized resources or excess capacity, can be strategically deployed for growth opportunities, such as innovation, market expansion, and new investments. However, the successful deployment of available slack depends on the ability of the firm's

management to make informed, effective decisions. Competent managers with high levels of managerial ability are better equipped to utilize available slack in ways that enhance firm value. For example, skilled managers can identify opportunities to invest slack resources in high-return areas, thereby increasing the firm's market position and future growth prospects, which directly impacts Tobin's Q. By allocating available slack toward initiatives that align with long-term strategic goals, managers can foster a more favorable market outlook, leading to a higher Tobin's Q. This finding supports the idea that managerial ability plays a critical role in transforming available slack into a strategic advantage that improves market valuation.

In contrast, Table 18 indicates that managerial ability does not moderate the relationship between available slack and firm performance when measured by return on assets (ROA), which partly supports rejecting H5b. This suggests that while managerial ability may be beneficial in utilizing slack for strategic investments that affect market value, its influence on asset efficiency and profitability, as reflected by ROA, may not be as pronounced. The ability to optimize asset utilization and generate returns from available slack requires more than just strategic insight; it also necessitates operational effectiveness and a focus on improving asset productivity. If managerial competence is lacking in these areas, available slack may not be effectively converted into higher asset efficiency or profitability. In this case, the firm's ability to leverage slack for improved ROA might be constrained by operational inefficiencies, inadequate resource allocation, or the failure to make necessary investments in asset optimization. Therefore, while managerial ability may facilitate strategic investments that boost market value, its role in moderating asset efficiency may require further enhancement to yield positive results for ROA.

These findings align with the research of [5], who found that managerial competence is crucial for enhancing firm performance, although their study did not specifically address the moderating effect of available slack. Likewise, there aren't many studies that have looked at how managerial ability, available slack, and firm performance relate to Tobin's Q and ROA, showing that more research is needed in this area. The differing effects on Tobin's Q and ROA underscore the complexity of managerial decision-making and highlight that the impact of managerial ability on firm performance may vary across different performance metrics.

In conclusion, while managerial ability proves to be a significant moderator in the relationship between available slack and market value (Tobin's Q), its effect on ROA requires further exploration. Managers who excel in strategic decision-making and resource allocation can effectively leverage available slack to increase firm value, aligning with H5a. However, managerial abilities must extend beyond strategic vision to improve asset efficiency and enhance ROA to include operational excellence in asset management and profitability optimization. These insights suggest managerial ability can be a powerful moderating force in improving firm performance. However, the effectiveness of its application across strategic and operational dimensions may determine its influence on performance metrics.

Managerial Ability Moderate the Influence of Recoverable Slack on Firm Performance

Table 17 shows that managerial ability moderates the relationship between recoverable slack and firm performance, as measured by market value (Tobin's Q), supporting H6a. Recoverable slack, which refers to the firm's excess resources that can be readily used to support future investments or growth opportunities, can, in some cases, have a negative impact on market valuation if not properly managed. Suppose a firm holds onto significant amounts of slack without actively deploying it. In that case, investors may perceive this as a sign of inefficiency or missed growth potential, leading to a decline in market value. However, when managerial ability is high, competent managers can turn this potential negative into a positive by strategically utilizing recoverable slack. Managers with skills can pinpoint opportunities to invest slack in high-return projects, expand the firm's market position, or innovate. They optimize the use of recoverable slack to enhance the firm's growth prospects and improve Tobin's Q. This aligns with the idea that managerial ability can mitigate the potentially negative effects of holding excessive slack by transforming it into a strategic resource that enhances market valuation.

Table 18 also shows that managerial ability moderates the relationship between recoverable slack and firm performance, as measured by return on assets (ROA), supporting H6b. Although recoverable slack can be a valuable resource for firms, it may result in wasted assets and decreased profitability if not utilized efficiently. Competent managers can allocate slack resources effectively to optimize asset utilization, increase productivity, and improve profitability. For example, they may use slack to invest in capital expenditures that enhance asset performance or to refine operational processes that improve asset turnover. In doing so, they can reduce the negative impact of recoverable slack on asset efficiency and ensure that it supports improved ROA. On the other hand, without strong

managerial competence, slack resources may remain underutilized, resulting in lower asset efficiency and a negative impact on ROA. This highlights the importance of managerial ability in ensuring that recoverable slack contributes to higher profitability and efficient use of assets.

This research contrasts with the findings of [5], who emphasized the role of managerial competence in firm performance but did not specifically examine the moderating role of recoverable slack. Their study focused on broader aspects of managerial competence and performance without considering how slack resources might interact with managerial skills to affect performance metrics like Tobin's Q and ROA. The difference between this research and that of [5] indicates that we need to look more into how recoverable slack, as a useful resource, works with managerial skills. Also, there aren't many studies that look at how managerial ability affects the link between recoverable slack and a company's performance, including its market value and asset returns.

In conclusion, the findings of this study support the hypothesis that managerial ability moderates the relationship between recoverable slack and firm performance, as measured by both Tobin's Q and ROA. Competent managers can effectively harness recoverable slack to enhance market value by investing it in growth opportunities and improving asset efficiency, directly contributing to higher profitability and improved returns. However, recoverable slack may negatively affect market valuation and asset utilization without strong managerial competence. These findings emphasize how important managerial skills are for using slack resources effectively and suggest that more research is needed to understand how management ability can influence the impact of recoverable slack on a company's performance in various areas.

Managerial Ability Moderate the Influence of Potential Slack on Firm Performance

Table 17 shows that managerial ability moderates the relationship between potential slack and firm performance, as measured by market value (Tobin's Q), supporting H7a. Potential slack, representing the firm's untapped resources or financial flexibility, can be an asset when managed effectively. When competent managers are at the helm, they can strategically allocate these resources to initiatives that strengthen the firm's competitive position in the market. For instance, managers can use potential slack to make acquisitions, fund innovations, or enter new markets, which can drive growth and increase the firm's market value. Additionally, potential slack can enhance investor and stakeholder perception when the firm holds resources for strategic flexibility, signaling preparedness for future opportunities or downturns. Therefore, high-quality management can transform potential slack into a competitive advantage, improving Tobin's Q by reflecting higher market value due to anticipated future growth and reduced risk. This emphasizes the role of managerial ability in optimizing the strategic deployment of resources to maximize market valuation.

However, Table 18 indicates that managerial ability does not moderate the relationship between potential slack and firm performance, as measured by return on assets (ROA), which provides insight into the limitations of managerial competence in affecting asset efficiency. While skilled managers may excel at managing potential slack for long-term growth or strategic flexibility, they may not be able to directly influence how slack is utilized to improve the operational efficiency of the firm's assets. Potential slack plays a crucial role in mitigating market uncertainties, empowering firms to navigate financial challenges or capitalize on future opportunities. Therefore, its impact on short-term operational performance may be minimal as measured by ROA. Even though competent managers can plan, potential slack may not immediately translate into increased asset efficiency or profitability. This suggests that potential slack is better suited for long-term goals, such as risk management, rather than for improving asset utilization in the short term.

The findings in this study align with the work of [5], who highlight the importance of managerial competence in driving firm performance. However, their research does not specifically consider potential slack as an independent variable or its interaction with managerial ability. In contrast, this study shows that managerial ability can change how potential slack affects a company's performance, indicating that when managers use slack resources well, it can greatly influence long-term success measures like Tobin's Q, but not as much on short-term measures like ROA. The discrepancy between these two findings further emphasizes the need for further research into how managerial competence interacts with potential slack to influence various aspects of firm performance.

Overall, these results support H7a by demonstrating that managerial ability moderates the relationship between potential slack and firm performance, as measured by Tobin's Q. Competent managers can effectively utilize potential slack to strengthen the firm's market position, improve investor perceptions and enhance long-term growth, ultimately driving up market value. However, these results suggest that potential slack does not

immediately affect asset efficiency or short-term profitability, as reflected in ROA, which highlights the need for further exploration of the moderating role of managerial ability on different performance metrics. The findings contribute to the growing body of literature on the complex interplay between managerial skills and slack resources, emphasizing the importance of context and the specific performance indicators being analyzed.

CONCLUSION

This study examines organizational slack's influence on firm performance with managerial ability as a moderating variable, using data from the ASEAN 5 industrial sectors (excluding the financial sector) from 2019 to 2023. Available slack, proxied by current assets, has a positive impact on firm performance as measured by market value (Tobin's Q) but a negative effect on performance as measured by return on assets (ROA). These results are consistent with the author's hypothesis, thus supporting H1a and H1b, which state that available slack positively impacts market value and negatively affects ROA.

Recoverable slack negatively impacts firm performance as measured by market value and return on assets across all ASEAN 5 industrial sectors, except for the financial sector. These findings support hypotheses H2a and H2b, which state that recoverable slack negatively impacts firm performance based on both indicators.

Potential slack, proxied by the debt-to-equity ratio, negatively impacts firm performance as measured by market value and return on assets. These results support hypotheses H3a and H3b, which state that potential slack negatively impacts both indicators of firm performance, market value, and ROA.

The managerial ability has a negative impact on firm performance as measured by market value and return on assets across all industrial sectors, except for the financial sector. This finding contradicts the hypothesis that a positive impact is expected, thus rejecting H4a and H4b, which state that managerial ability positively impacts firm performance.

Managerial ability moderates the relationship between available slack and firm performance as measured by market value, supporting hypothesis H5a. However, managerial ability does not moderate the relationship between available slack and performance as measured by ROA, thus rejecting H5b.

Managerial ability also moderates the relationship between recoverable slack and firm performance, as measured by market value and return on assets, supporting hypotheses H6a and H6b. These findings indicate that managerial ability is important in managing the negative impact of recoverable slack on firm performance.

Managerial ability moderates the relationship between potential slack and firm performance as measured by market value, supporting hypothesis H7a. However, there is no significant moderation in the relationship between potential slack and performance as measured by ROA, thus rejecting hypothesis H7b.

The results of this research are expected to provide implications for companies as a reference in effectively managing excess resources (slack) to improve company performance and for investors as a reference in making decisions and assessing the risks faced by the company. In addition, this research is also expected to be helpful as a guideline for future researchers in developing research on organizational slack and the importance of managerial capabilities to ensure company performance.

This research has several limitations that may affect its results, including the fact that many non-financial companies in the ASEAN 5 S&P Capital IQ do not meet the research criteria, such as changes in listing status, incomplete financial reporting data, and consecutive losses during 2019-2024. We restrict the research sample to companies that generated operating profits between 2019 and 2023, encompassing only five ASEAN 5 countries. Additionally, we use the GDP growth variable as the sole indicator to differentiate between countries. Some models in the research, such as Models 3 and 4, violate the multicollinearity test because the moderating variable is tested as an independent variable. In contrast, Models 5 and 6 violate multicollinearity due to the interaction between the moderation and independent variables. Models 1 to 6 also fail the tests for uneven spread of errors and patterns over time, which means Driscoll-Kraay standard error treatment is needed. Finally, the use of DEA for the moderating variable of managerial ability must fully reflect actual managerial ability.

This research is expected to contribute to the development of scientific knowledge, although the researchers acknowledge the limitations that may affect the research results. To strengthen and improve the quality of future research, the researchers suggest several things, including extending the duration and period of the study to expand the sample so that the results obtained are more relevant to current conditions. The researchers also recommend increasing the number of journal references to help select the appropriate variables and expanding the proxies used for moderating variables to make the research results more relevant and in-depth.

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