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HOW CEO GLOBAL EXPOSURE AND GENDER DIVERSITY SHAPE MANAGERIAL ABILITY - INVESTMENT EFFICIENCY RELATIONSHIP IN STATE-OWNED ENTERPRISES

ANIES LASTIATI*
AZAHRA NUR ALIFAH
RINI DAME FRANSISCA

Universitas Trilogi, Jln. TMP Kalibata No.1, Jakarta Selatan, Indonesia
anieslastiati@trilogi.ac.id, azahraalifah28@gmail.com, rinidamefransisca19@gmail.com

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Abstract: *This study's purpose is to evaluate the impact of managerial ability (MA) on investment efficiency (IE) on state-owned companies (SOEs) in Indonesia. Using 169 data of SOEs in Indonesia from 2019-2021. This paper also assesses the impact of the CEOs' global exposure and gender diversity board of directors on the MA-IE relationship. The result reveals that competent management links to higher knowledge and understanding on investment decision and its impact to the company in the long run. Hence, the more capable management is, the lower investment inefficiency will be. This study further finds that management with exposure to the global access and network through CEOs' experiences in multinational companies will lessen the negative impact of managerial ability on the company's investment inefficiency. Further finding, however, could not prove that female presence in the SOEs board of directors has any impact on the managerial ability – investment efficiency relationship. This study is one of the few studies conducted on SOEs governance, specifically on the SOEs board of directors' investment performance. The findings of this study are expected to provide valuable insights for the Ministry of SOEs in appointing SOEs' Boards of Directors. Specifically, the study identifies the qualities and characteristics of SOEs' Boards of Directors that can enhance the efficiency of investments made by these enterprises.*

Keywords: Global Exposures and Gender Diversity, Investment Efficiency, Managerial Ability, State-Owned Enterprise (SOEs),

INTRODUCTION

State-owned enterprises (SOEs) hold crucial roles in the development of national economy, especially in emerging countries like Indonesia. This is because SOEs function for not only as economic entities, that are expected to provide profits for the states, but also as instruments of state policy. In Indonesia, State-Owned Enterprises (SOEs) are constitutionally mandated to support national economic development. As stated in Indonesia's SOEs Law Number 19 of 2003, SOEs are established to drive economic growth while balancing their primary objectives of generating profit and fulfilling government missions. Additionally, SOEs are required to comply with good corporate governance principles in compliance with PER-2/MBU/03/2023 (Mustofiyah and Handayati 2023) One of the consequences is that investments made by SOEs is aimed to boost the economy growth in the form of generating revenue for government through their share of ownerships and constructing and building infrastructures that absorb labor and reduces unemployment.

While research by O'Toole et al. (2016) on SOEs in Vietnam suggests that there is no difference in terms of investment decision between SOEs and their private counterparts, improved corporate governance and effective internal control leads to SOE management making more conservative company expansions compared to private enterprises. This is also argued by (Brahma et al., 2023) who suggest that tight oversight by government to the SOE's management weakens the CEOs' ability to effectively manage the firm. That makes it difficult for the managerial team to take decisive actions (Li and Yu 2018) and quickly and effectively respond to profitable growth opportunities, which could lead to investment distortions in the form of underinvestment.

Management of SOEs thus is required to be capable of managing the cooperation, operations and importantly investment decision. Investment decision, in SOEs, is a greatly important decision in the company operation as it usually involves a gigantic number of expenses spent. Zhao et al. (2024) find that this capability of SOEs management stems to a certain extend from the specific attributes possessed by the CEOs.

Previous studies on the relationship between the ability of corporates' management and their investment efficiency have yielded conflicting findings. While Chen et al. (2017) finds that managerial ability affects the under- and overinvestment, the results of Ongoro et al. (2023) specifically shows that there is a positive association between the ability and investment efficiency. However, a similar study conducted in Teheran found insignificant relationship between the two variables Salehi et al. (2020). Such research, however, was conducted on private enterprises. Interaction between SOE's managerial ability and the outcome of their investment decision has received little attention. This study attempts to fulfill this gap by examining the connection between investment efficiency and the managerial skill of SOEs' leaders. To explore more on the attribute of Zhao et al. (2024), this study also evaluates the board of director's attributes, namely the CEO's global exposures and women participation in the board.

Indonesia is an appropriate sample for this research for the following reasons. First, data collected by the World Bank (World Bank Group 2019) suggests that about 142 national SOEs and 782 regional SOEs operate in Indonesia. While only 17 SOEs are listed on the Indonesian stock exchange, they account for 25 percent of market capitalization. SOEs' revenues total about 15 percent of GDP, but only employ less than 1 percent of workers (1.1 million people). This disparity reflects the concentration of SOEs in relatively capital-intensive sectors such as manufacturing, finance and insurance, and transportation and storage. Additionally, SOEs in Indonesia have a unique mission which are balancing economic growth, carrying out government missions and pursuing profit maximization.

To fulfill their mission, SOEs must effectively manage their investments to achieve their goals efficiently; therefore, having high-quality Boards of Directors (BOD) is essential. This study aims to evaluate the impact of managerial ability (MA) on investment efficiency (IE) in state-owned enterprises (SOEs) in Indonesia. The objective is to identify the critical qualities required in BODs, particularly their managerial capabilities, to optimize the efficiency of investments made by these enterprises.

This study provides multiple contributions to the body of literature. First, it enriches references on managerial ability and its impact on the efficiency of investment. Second, as SOEs have different nature with private companies whose mandates are maximizing profit and alignment with government missions, this research adds more references of the role of managerial ability in the investment decision in SOEs. The references particularly highlight the unique capabilities that SOEs' BOD should possess for them to be able to balance the dual roles of profit maximization and fulfilling government missions. Next, it is noteworthy to include board characteristics, including CEO's exposure to the international market and women's presence in the board, into the analysis, because there are few global talents in Indonesia who aspire to take on management roles in state-owned enterprises (SOEs) due to bureaucratic challenges and government intervention. Lastly, shareholders and investors can benefit from the outcome of this study when they decide on potential investment opportunities.

This research is organized into four sections. The first part introduces the study's background. Section 2 and 3 contains literature review research methodology. The result of this study is reported in section 4, and finally, section 5 provides conclusions and suggestions.

Literature Review and Hypothesis Development

Huynh, et al. (2024) cited upper echelon theory which says that organization and organizational decisions depend on the characteristics of its top executives. Some of the key concepts of upper echelon theories are the cognitive and value driven decisions, the executives' strategic choices, and their psychological attributes, such as gender, age, and educational background. This research analyzes several key concepts of the theory, including the cognitive and value-driven decision-making processes of BODs and their strategic choices as measured by managerial ability, as well as psychological attributes such as gender and background, and their impact on the quality of investment decision-making.

Efficient Investment Decision

It is argued that the management companies consider investment as a pivotal resource to boost revenue. Concerns arise when companies should make investment decisions which should be correct that effectively links to the revenue and hence profit maximization. Much previous literature examines the impact of financial reporting quality (Biddle et al. 2009), analysts forecast

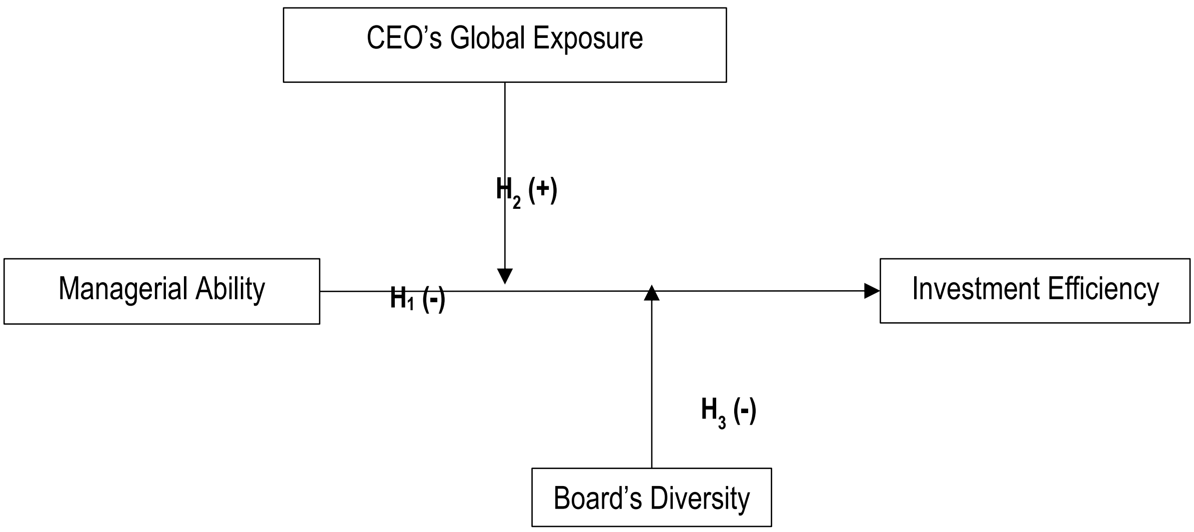

Fig. 1: Research model

quality (Chen et al. 2017) and accounting conservatism (García, et al. 2016) on corporate investment efficiency, but it is rarely found any research that links between management capability and corporate investment efficiency. Efficient investment refers to an investment that delivers exactly the profit expected, neither exceeding nor falling short of anticipation/prediction. In other words, investment efficiency is achieved when there is no deviation from the optimal investment level (Stefanus et al. 2023). Maritan (2001) states that capital investment decisions rank among the most critical types of managerial decisions made in a firm. Investment can have major long-term implications, both positive and negative, for the success of a firm. So, to understand a capital investment decision, it is important to understand the asset in which a firm is investing in, tangible ones, such as equipment, or intangible ones, such as skills and know-how. Maritan (2001) further argues that management should have capability to define and understand the investment the company will invest in order the investment will not be sub performed.

Managerial Ability and Efficient Investment

Managers with higher ability can access more accurate information about investment opportunities, resulting in better decision-making and higher success rates for firms (Hasan et al. 2022). Additionally, managerial competence positively influences corporate investment, particularly during times of crisis, enhancing risk management strategies (Andreou et al. 2017). Chen et al. (2011) further suggest that managerial ability relates with their ability to choose and decide on efficient investment. The lower ability of management results in asymmetric information, limited exposure to competition and market dynamics, and consequently, an increase in inefficient investments.

Zwikael and Meredith (2019) suggest that for projects to effectively support strategic implementation, top management must be able to translate organizational strategy into the project business case, particularly during front-end investment decisions. CEOs are primarily concerned with investments that significantly contribute to strategic execution and long-term organizational performance. Therefore, CEOs should possess the capability to connect each investment decision with both organizational motivation and overall corporate performance. A higher level of managerial ability in making efficient investment choices leads to improved corporate outcomes.

Shengdao and Mingxia (2014) in Chen et al. (2021) adds that capable management typically has the ability to select profitable projects and make prudent financial decisions in order to increase investment efficiency. Conversely, Foss and Mazzelli (2025) argue that management plays a central role in shaping the company's strategic direction, particularly through decisions on investments, which are often substantial. They further contend that management faces limited alternatives if an investment strategy fails, leading competent managers to adopt a less risky approach when making investment decisions.

The idea that managerial skill exacerbates wasteful investment is also supported by some evidence. Overconfidence causes competent management to estimate project prospects more optimistically, which results in overinvestment (Pan and Li 2016). Furthermore, capable management is more driven and has the chance to build an enterprise. They could misuse free cash flow and lead to excessive investment, which is seen as inefficient and goes against the owners' interests (Pan and Li 2016). Due to these contradictory premises, the paper then proposes the following hypothesis.

H_1: SOEs' managerial ability influences the companies' investment efficiency

Management Having Exposure to the Global Environment

Suder et al. (2017) argue that managers' capability links to knowledge and willingness to develop and learn. They further argue that management is considered capable if they have knowledge exposure to any platform for growth and that is unique to others. Freixanet and Renart (2020) suggest that managers must understand the international market, even managers of Small Medium Enterprises (SMEs). They further argue that in order for companies to grow, the companies have to get management that understand the international market and hence have global exposure and best practice. Merín-Rodrigáñez, et al. (2025) further argue that from the BMI index (business model innovation), CEOs who have international exposure and international entrepreneurship can help organizations to achieve long term competitive advantage because the CEO will allocate resources including investment consumed if it creates value for the organization.

Tasheva and Nielsen (2022) argue that, using global dynamic management capability (GDMC) method, the company who has international exposure of talent and management exhibits superior performance due to the effectiveness of the company's decision including investment program. Using upper echelon theory, Dong et al. (2024) posit that CEOs with foreign experiences possesses unique knowledge that is not found in their native countries, hence shaping their corporate decisions especially to their adherence to ethical standards.

However, given that SOEs operate with dual objectives—profit maximization and the fulfilment of government mandates—managers with global exposure often recognize that the operational practices of SOEs diverge from international best practices (Dong et al. 2024). Hence, despite their competence, these managers are frequently unable to reject projects that do not align with the company's growth objectives, as government-driven goals are prioritized over commercial considerations. Therefore, the study proposes the following hypotheses.

H_2: CEOs of SOEs with global exposure will weaken the effect of the managerial ability on investment efficiency

Gender Diversity in Board of Directors

The board of directors is the party being authorized and is entirely responsible for the company's running, following the company's goals (Roika, et al. 2019). Presence of female directors in the board has caught a lot of attention in research. Although female directors are often found to display lower confidence levels compared to their male peers Chen et al. (2019), studies also indicate that they typically adopt a more rigorous monitoring role, showing greater attention to detail, objectivity, and thoroughness in decision-making Farooq et al. (2023). This emphasis on monitoring is thought to enhance CEO accountability and mitigate CEO overconfidence (Chen et al. 2019b).

By employing data of S&P 500 firms, Chowdhury et al. (2024) find that firms with relatively more women in their top management team exhibit superior investment efficiency. Economically, they further suggest that female CEO executives increase investment efficiency by almost 11% of the cross-sectional mean of our investment efficiency measure. This efficient investment is measured by right size of investment needed by the firm to generate revenue. It is a noteworthy argument that encourages author to propose the following hypotheses.

H_3: SOEs with a more gender diverse board of directors will strengthen the positive effect of the managerial ability on investment efficiency.

METHOD

Empirical analyses in this study rely on secondary data collected from three years annual reports published by Indonesian SOEs from 2019 to 2021. The sample of this study is selected using purposive sampling with the following criteria: Indonesia's SOEs from non-financial sectors which published complete financial statements and annual reports for the years 2019 to 2021. This period is viewed to be crucial as in year 2019 there is a change in Indonesian SOEs administration under the new minister of SOEs. The selected SOEs also use Rupiah for its reporting currency, and provide complete information on their CEOs' background and board directors.

To test all the hypotheses, data analysis method is employed using Regression Analysis with Panel Data and an interaction test, commonly referred to as Moderated Regression Analysis (MRA).

Corporate Investment Efficiency

To measure Corporate Investment Efficiency, this study adopts the model developed by Chen et al. (2011), as it effectively estimates the extent of deviation from the optimal (efficient) level of investment. Investment efficiency in this model refers to firms that pursue only projects with a positive net present value. Consistent with Chen et al. 2011, investment efficiency in this study is measured by measuring the ineffiency number (CIInE) which evaluates deviations from expected investment levels, as predicted by a model aligned with growth opportunities. With this approach both underinvestment (investment below expected levels) and overinvestment (investment exceeding expected levels) can be accounted. Then, the following formula is used to obtain the measurement of the corporate (in)efficiency:

$$CIInE_{i,t} = \alpha 0 + \alpha 1 NEG_{i,t-1} + \alpha 2 SalesGrowth_{i,t-1} + \alpha 3 NEG*SalesGrowth_{i,t-1} + \varepsilon_{i,t}$$

$CIInE_{i,t}$ is difference between ending total asset and beginning total asset of a firm in one year scaled by lagged its total assets. $NEG_{i,t-1}$ is a dummy variable, indicating the sales growth: 1 for the negative revenue growth, 0 otherwise. $SalesGrowth_{i,t-1}$ is annual rate for revenue growth for firm i in year t-1. $\varepsilon_{i,t}$ is the residual of the regression, which represents the inefficiency of the firm i's investment in year t.

The absolute amount of the residual ($\varepsilon_{i,t}$), represents the rate of firm's investment (in)efficiency. The closer the absolute residual to 0, the higher the level of investment efficiency. Firms with near zero e residuals are considered to be able to manage their investment to its optimum level.

Managerial Ability (MA)

Managerial Ability (MA) is measured using Data Envelopment Analysis (DEA). As explained by Demerjian et al. (2012), DEA is a method used to evaluate a company's efficiency by comparing inputs to their outputs (such as the resources and activities companies utilize to produce goods or services). Kabir et al. (2024) explain the rationale behind the measure that assesses how effectively managers utilize specific productive resources to generate higher returns.

Managerial Ability (MA) is initially calculated by deducting all firm inputs—such as net property, plant, and equipment; net operating leases; net R&D; other intangible assets; inventory costs; and selling, general, and administrative expenses—from their revenue or sales, resulting in firm efficiency scores. These scores are then regressed against factors derived from specific firm-level performance metrics: market share, size, and free cash-flow (Demerjian et al. 2012). Unlike Demerjian et al. (2012), however, this research excludes three factors in the regression due to the characteristics of the SOE sample. First, the lifecycle (age) factor is omitted as it is considered irrelevant; all SOEs in the sample were established long ago, with some, like Telkom, Peruri, PT Posindo, and PTPN, having been founded over 25 years ago. Second, the operational complexity factor is excluded because SOEs are primarily mandated to fulfill government tasks while also generating profit. Diversification beyond their mandated scope is generally avoided by management, as it often requires lengthy approval processes and government assessments. Lastly, the international operations factor is excluded, as the primary purpose of SOEs is to drive national economic growth by providing goods and services to local markets, substituting imports, rather than focusing on overseas expansion.

Management's Global Exposure (GE)

This research defines management's global exposure as CEOs who have prior experience working in multinational companies. Following Merín-Rodrigáñez et al. (2025), which state that prior international experience enhances the CEO's expertise by broadening their skill set and perspective.

This study uses information from the companies' annual report, particularly the short biography of the CEOs. Information also mined from other sources, such as bulletin and social media. As CEOs of SOEs in Indonesia are public figures and subject to public interest, their information is generally readily available. Dummy variables are created, where 1 is for CEOs with global exposure, and zero otherwise.

Board of Directors Gender Diversity (Gen)

The data for gender diversity variable also taken from the companies' annual report. Numbers of female directors in the boards are totaled and fractioned from the total members of board of directors. The fractions are the proxies of this variable. The existence of female director in BODs also measured by dummy variable 1 for SOEs which has female director(s) in their board and 0 otherwise.

Control Variables

Several control variables are included, which are ROA (Return on Assets), DAR (Debt to Assets Ratio) and CFO (Cash Flow from Operation) to gauge the firms' financial performance (Sakti and Rachmawati 2024); and SIZE (the natural log of total assets) to capture the firms' characteristics.

Analytical Model

Model 1 is used to test hypothesis H_1 and examine the connection between managerial skill and inefficient investment:

$$CIInE_{i,t} = \alpha + \beta 1MA_{i,t} + \beta 2ROA_{i,t} + \beta 3DAR_{i,t} + \beta 4SIZE_{i,t} + \beta 5CFO_{i,t} + e$$

Hypotheses H_2 and H_3 are tested using the following model which each using their moderating variables respectively:

$$CIInE_{i,t} = \alpha + \beta 1MA_{i,t} + \beta 2mod_{i,t} + \beta 3\, MA{*}mod_{i,t} + \beta 4ROA_{i,t} + \beta 5DAR_{i,t} + \beta 6SIZE_{i,t} + \beta 7CFO_{i,t} + e$$

Mod variables representing the moderating variables: CEO global exposure (dummy variable) and BOD gender diversity.

RESULTS

Table 1 presents the descriptive statistic of the sample which reports the means, standard deviation, minimum and maximum of all dependent, independent and control variables of this study.

The dependent variable in this study is investment efficiency, has a mean value of 0.4102 and a standard deviation of 0.4484. The CIInE variable shows high variation over the observation period, as indicated by its mean value being lower than its standard deviation. The CIInE values range from a minimum of -0.0008 (the maximum efficiency) to a maximum value of 2.9292 (the maximum inefficiency).

The explanatory variable, MA, has a mean value of 0.0169 and a standard deviation of 1.7958. The descriptive statistics show that the lowest recorded MA value is -0.3920, while the highest MA value is as high as 4.3001. This suggests that there are significant variations in managerial ability among SOEs in Indonesia. The moderating variables are CEOs' global

Table 1. Descriptive Statistics

Variables	Obs	Mean	Std. Dev	Min	Max
CIInE	169	0,4102	0,4484	0,0008	2,9292
MA	169	0,0169	1,7958	-0,3920	4,3001
Gen	169	0,1112	0,1445	0	0,5
ROA	169	0,0261	0,1141	-0,4967	1,01
DAR	169	0,5261	0,2893	0,0046	1,51
SIZE	169	29,9235	1,916	25,3252	35,017
CFO	169	0,1333	1,217	-0,1555	15,8236
Dummy Variable		(1)	%	(0)	%
GE	169	62	36,69	107	63,31
Women CEO	169	14	8,28	155	91,72

exposure (GE) and female roles in the board of the company (Gen). Selection of these variables are supported by previous research Chen et al. (2011) and Farooq, et al. (2023).

GE is measured by dummy of 1 for CEO has global exposure to the international market, otherwise is 0. Statistic of study shows that more than 36% of the sampled CEOs has global exposure in the form of working in managerial setting in multinational companies, while 54% other does not.

Variable GEN is indicated by percentage of number of female directors in the sampled board of director (BOD), and whether the BOD has female member or not (dummy variable). In Table 1, it is shown that the mean value of GEN is 0.1112 and its standard deviation is 0.1445. That is only 11% of BOD members in SOEs in Indonesia are women. In fact, out of 169 SOEs sampled, more than 90% of it has no female CEOs. This means most SOEs in the sample dominated by, if not consist of only, male directors and CEOs.

In the initial data analysis this research also attempts to identify outliers and irregular data to minimize bias. However, outliers and irregular data are not found, and all variables lies between normal range.

Analyses of Multiple Regression Results

The study used unbalanced panel data. After performing the Hausman test, a random effects regression model was applied using the STATA 17 software. The detailed regression results, using significance levels of 1%, 5%, and 10%, are summarized in Table 2. Table 2 shows that the simultaneous effect test (F-test) yields a Prob > F value of 0.000 (F = 0.000 < 0.01) for all panel data regressions, both with and without the moderating variables. This shows that, at the 99% confidence level, the independent variables in the study have a statistically significant impact on the dependent variable.

The panel data regression results without variable moderation reveal that the coefficient of determination (R^2) is 0.0466, indicating a relatively high variation in the data and suggesting that other factors may also contribute to explaining CIInE.

Table 2. Multiple Regression Result

CIInE	Predict	H1			H2			H3		
		Coef.	t	P>|t|	Coef.	t	P>|t|	Coef.	t	P>|t|
MA		-0.2005	-1.67	**0.048****	-0.6069	-1.71	**0.045****	-4.907	-1.28	0.202
GE					-0.6635	-1.89	**0.031****			
Gen								-4.891	-0.38	0.705
MA*GE					0.7608	1.64	**0.052***			
MA*Gen								1.0746	0.52	0.603
ROA		-0.6184	-1.99	**0.049****	-0.6044	-1.52	**0.066***	-6.299	-1.55	**0.061***
DAR		0.0797	0.65	0.514	0.0848	0.31	0.754	0.655	0.24	0.813
SIZE		-0.0098	-0.51	0.610	0.1311	0.72	0.473	0.930	0.46	0.645
CFO		0.0073	-0.26	0.796	0.0929	1.07	0.286	0.685	0.73	0.469
_Cons		0.4702	0.77	0.441	-3.219	-0.59	0.559	-22.354	-0.37	0.713
		Prob > F : 0.0083			Prob>F = 0.0078			Prob>F = 0.0033		
		R-squared : 0.0466			Adj R-squared = 0.0990			R-squared = 0.0661		

***,**, *: significance level of p-value < 0.01, 0.05, and 0.1 respectively

Analysis of the Effect of Management Ability (MA) on Inefficient Investment (CIInE)

This first part of the analysis is on the test of determining whether the effect of MA on CIInE in the sampled SOEs for the first hypothesis (H_1). The test produces a significance of 0.048 <0.05 p-value and a -1.67 t value with a negative coefficient of -0.2005. It indicates that MA has a significant negative effect on CIInE at the 95% confidence level. It reveals that the the higher the ability of the management the lower the possibility of the company's investment inefficiency.

Therefore, this study proves that Hypothesis H_1 is accepted. It is confirmed that SOEs with higher managerial ability increase the companies' investment efficiency. Particularly, this research finds that BODs with higher capabilities in SOEs in Indonesia tend to be more effective in making efficient investment decisions.

This finding is consistent with the results of Chen et al. (2011), which demonstrate that the managerial ability of BODs enables them to identify and execute the most efficient investment decisions. Furthermore, this capability—including the ability to integrate investment decisions with overall corporate performance—supports the selection of efficient investments, as found by Zwikael and Meredith (2019). This finding supports the upper echelon theory, which emphasizes the influence of managerial ability as one of the management's characteristics on organizational outcomes. The theory highlights that managerial abilities that reflect various traits of managers play a crucial role in shaping a firm's strategic decisions (Huynh 2024), thereby contributing to the success of their investment choices.

It therefore, implies that, it is crucial for the ministry of SOEs in Indonesia to appoint capable directors for the ministry to achieve its goal that is enforcing the national economic growth, trough implementation of government mission and profit maximization, especially through better decisions in investments.

Analysis of the Influence of CEO Global Exposure on the Relationship between Management Ability (MA) and Inefficient Investment (CIInE)

Table 2 presents the results from the analysis of the impact of CEO global exposure (GE) on the relationship between managerial ability (MA) and investment inefficiency (CIInE). The findings show that the coefficient for the interaction term MA*GE is +0.7608, which is statistically significant (p = 0.052). Alpha 10% is used here due the exploratory nature of this research. This result indicates that global exposure positively moderates the negative relationship between MA and CIInE. Specifically, competent managers in SOEs with global exposure are less effective in mitigating investment inefficiency compared to those without such exposure. As a result, the study supports Hypothesis H_2, which posits that the relationship between managerial ability and investment inefficiency is lessen by the inclusion of CEO global exposure as a moderating variable.

These findings are consistent with the study by Liao et al. (2023), which compares investment inefficiency in state-owned enterprises (SOEs) and non-SOEs. Liao et al. (2023) argue that SOEs often suffer from a lack of transparency and balanced information among the parties involved in the investment process. This information asymmetry allows competent managers with global exposure to pursue aggressive empire-building strategies, even when these lead to inefficient investment decisions. Similarly, Stephie et al. (2021) suggest that in firms with asymmetric information and weak governance, competent managers with access to global digital transformation resources may engage in earnings management, which contributes to inefficient investments. Moreover, since the SOEs have dual objectives which are profit maximization and government mission accomplishment, competent managers who have global exposure found that how SOEs works is not always be in line with the international best practice (Dong et al. 2024). However, they are often unable to reject projects that hinder the company's growth, as fulfilling government objectives is given priority.

Nevertheless, this finding supports the upper echelon theory as applied by Dong et al. (2024). It demonstrates that managers of SOEs with an international background—identified in the upper echelon theory as a key managerial trait influencing their strategic choices—play a significant role in shaping the relationship between managerial ability and investment efficiency.

Analysis of the Influence of Gender Diversity in Board of Director on the Relationship between Managerial Ability (MA) and Inefficient Investment (CIInE)

Table 2 also presents the results of the analysis examining the impact of female representation on the board on the relationship between managerial ability (MA) and investment inefficiency (CIInE). The findings reveal that the interaction term MA*Gen has a coefficient that is not statistically significant ($p = 0.603$). This indicates that gender diversity on the boards of state- SOEs does not significantly influence the negative relationship between managerial ability and investment inefficiency. Consequently, Hypothesis H_3 is rejected.

The lack of a significant gender effect on the relationship between managerial ability and investment inefficiency may be attributed to the low representation of women on the boards SOEs. While this finding does not support the hypothesis, it aligns with the research conducted by Farooq et al. (2023), which indicates that the negative impact of female board members on investment inefficiency—through board dynamics, stewardship effects, and information environment—is more pronounced in firms with three or more female directors. In this study, it was found that only less than 10% of the sampled SOEs have more than three female directors on their board.

From the perspective of upper echelon theory's point of view, this finding suggests that gender as one observable character of management (Huyhn 2024) could not influence the relationship between one management characteristic (managerial ability) and the outcome of their strategic decision (investment efficiency).

Table 3. Robustness test

CIInE	Predict	H3		
		Coef.	**t**	**P>|t|**
MA		-0.4414	-1.34	**0.045****
Gen		0.3104	0.45	.0655
MA*Gen		-0.8493	-0.95	.0346
ROA		-0.6316	-1.58	**0.058***
DAR		0.0944	0.35	.0728
SIZE		0.1448	0.79	.0432
CFO		0.0715	0.82	.0416
_Cons		-3.7882	-0.69	.0494
				Prob > F : 0,0056
				R-squared : 0,0874

***,**, *: significance level of p-value < 0.01, 0.05, and 0.1 respectively

Robustness test is conducted to test the gender effect on the relationship between managerial ability and investment efficiency by using dummy variable 1 for SOE with woman CEO and 0 otherwise. The finding is consistent, that the positive relationship between managerial ability and investment efficiency is not affected by the female CEO. (as shown in table 3).

CONCLUSION

This study investigates the impact of managerial ability on investment efficiency in state owned enterprises (SOEs) in Indonesia. Based on the premise that SOEs have significant and distinguished role in national economy, it is then imperative to evaluate the importance of the SOE's management capabilities on the success of the investment initiatives taken by the SOEs. Using a sample of 169 SOEs in Indonesia between 2019 and 2021, this finds support to the proposed hypothesis on the negative influence of SOEs managerial ability on the firms' investment inefficiency. This finding in line with references on the topic that mostly found in private sectors. Moreover, this study also finds that CEOs of the SOEs with global exposure through their work experience in multinational entities mitigate the negative effect of the managerial ability to the investment inefficiency. The mitigative effect of the CEOs' global exposure towards investment inefficiency might rely on the dual roles held by the SOEs, which is definitely dissimilar with those of multinational, private companies.

This study also evaluates the role of gender diversity on the boards of SOEs in moderating the negative effect of managerial ability on investment inefficiency. The findings indicate that female directors in Indonesian SOEs do not significantly impact this relationship. The representation of female directors on these boards is extremely limited.

The most significant policy implication from these empirical findings is for the Indonesia Ministry or the Chamber of State-Owned Enterprises (SOEs) to be able to find higher cognitive levels of talent to be positioned in the board of directors and management of the SOEs. International experienced talents usually possess certain level of dynamic management capability, unique knowledge and certain level of ethical standards, therefore should be utilized for the best national interest, which with SOEs through the optimum profits and accomplishment of government national mission.

While this study does not yet provide empirical evidence regarding the roles of female directors, it is recommended that the Indonesian Ministry or the Chamber of State-Owned Enterprises (SOEs) consider enhancing the representation of women on the boards of Indonesian SOEs as directors or CEOs. Female directors may contribute to greater board dynamics, improved stewardship, and a more robust information environment Farooq et al. (2023).

This study has however some limitations that provide directions for future research. This study evaluates the relationship between managerial ability and inefficient investment by considering most of SOEs in Indonesia which data were available for public, hence limited samples. Therefore, it is expected that the results may not be generalizable to all SOEs let alone SOEs from multi countries. Future research should be able to incorporate more sample from other countries and other type of markets as the characteristics of the relationship between MA and IE may differ in different setting of SOEs.

Moreover, the global exposure (GE) measured in this study is limited to the CEOs' experience working in multinational corporations. Future research could explore additional dimensions of global exposure, such as the CEO's international education background and the duration of their global experience.

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