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EFFECTS OF EARNINGS MANAGEMENT AND CEO CHARACTERISTICS ON THE WORKING CAPITAL MANAGEMENT EFFICIENCY?

Thy Le-Bao[1,*], Hanh Nguyen-Ngoc-Hoang[2], Hien Le-Thi-Thuy[3], and Ngan Ho-Thi-Kim[4]

Abstract

This study investigates the relationship between earnings management and the effectiveness of working capital management, as well as the individual components of working capital management. The Beneish M-Score is used as a proxy for earnings management and data from 354 non-financial firms listed on the Ho Chi Minh Stock Exchange in Vietnam are analyzed. Unlike previous studies that have focused on the negative implications of earnings management, this research found a positive impact of earnings management on the efficiency of Vietnamese firms' working capital management. This finding aligns with the goal-setting theory, which suggests that clear objectives can lead to improved performance. The results indicate that managers who engage in earnings management tend to operate with shorter cash conversion cycles and manage their inventory, receivables, and payables in a suboptimal manner. The study also revealed that companies with female and dual-role CEOs exhibit more conservative working capital management. Additionally, it was discovered that firms with longer tenure CEOs typically have more efficient working capital strategies, which can lead to lower expenses and higher productivity.

Keywords: Working capital management, Cash conversion cycle, Receivables Management, Earnings Management, CEO Characteristics

1. INTRODUCTION

Working capital is typically used to assess a company's financial health as it represents the company's capacity to support day-to-day operations and satisfy short-term financial obligations. Positive working capital shows that a corporation has enough readily accessible cash to meet its present liabilities, whereas negative working capital indicates a cash shortage. According to Ismail (2017), working capital refers to the funds immediately available for a company's day-to-day operations. It is calculated as the difference between a firm's current assets, including cash and items easily convertible to cash, and its current liabilities, which are financial obligations that must be settled in the near term. Effective working capital management is a critical concern for companies, as it involves strategically allocating and balancing current assets and liabilities to optimize short-term liquidity and cash flow.

[1],* Dr. Thy Le-Bao is currently working as a Vice Dean of Finance and Banking Faculty at Ton Duc Thang University, Vietnam. She obtained a Ph.D. degree in Economics Science from the University of Strasbourg (France). She is a member of the Innovation and Sustainability Research Group, Faculty of Finance and Banking, Ton Duc Thang University, Ho Chi Minh City, Vietnam. Email: lebaothy@tdtu.edu.vn

[2] Ms. Hanh Nguyen-Ngoc-Hoang is currently working as a Finance Assistant in Brady Vietnam. She obtained a bachelor's degree in Finance and Banking from Ton Duc Thang University, Vietnam.

[3] Ms. Hien Le-Thi-Thuy is currently working as a Finance Assistant in Baoviet Life Corporation. She obtained a bachelor's degree in Finance and Banking from Ton Duc Thang University, Vietnam.

[4] Ms. Ngan Ho-Thi-Kim is in her final year, majoring in Finance and Banking at Ton Duc Thang University, Vietnam.

Maintaining an appropriate level of working capital is essential for ensuring a business has the necessary liquid resources to cover its regular operating expenses and other short-term financial commitments. Abuzayed (2012) defines working capital management (WCM) as the process of balancing and controlling the various factors involved in maintaining ideal levels of short-term debt, current assets, and inventory, and managing the relationships between these elements. A company's inability to achieve and sustain optimal working capital levels can ultimately lead to bankruptcy or insolvency. As such, effective WCM is critical, as it ensures the business has the necessary resources to support its ongoing operations and continue generating revenue. WCM entails overseeing a company's short-term investments in assets, which typically make up a substantial portion of its total assets, generally between 30% and 50% (Wibowo & Ryalvin, 2023). Effective management of working capital allows for improved utilization of resources, leading to the elimination of unnecessary costs and idle funds. The benefits of working capital efficiency (WCME) have been extensively studied and documented. Optimal management of working capital can result in favorable outcomes for the balance sheet, such as enhanced cash flow and reduced investments in receivables, inventory, and long-term assets associated with current accounts (Boisjoly et al., 2020). The cash conversion cycle is a comprehensive measure used to assess WCME. The term refers to when a company pays for its raw materials and receives cash from selling its finished products. This duration represents the number of days the business requires financing to fund its ongoing operations (Ugwu & Nzewi, 2016). Numerous studies conducted globally have demonstrated that a shorter cash conversion cycle (CCC) is indicative of WCME. By reducing the cash conversion cycle, companies can significantly enhance their profitability (Moussa, 2018; Tiwari et al., 2023).

However, firms that engage in earnings management (EM) often manipulate working capital components—such as accounts receivable, inventory, and accounts payable—to achieve desired earnings figures. This manipulation can lead to inefficiencies in WCM, as managers may prioritize short-term earnings over optimal operational practices. For instance, a longer cash conversion cycle may result from such practices, indicating poorer WCME. According to Jensen & Meckling (2019), agency theory highlights conflicts between managers and shareholders. Managers may manipulate accounts receivable or inventory to create favorable earnings reports, leading to inflated working capital figures and obscuring a firm's true liquidity. While this might yield short-term gains, it ultimately harms long-term financial health by creating cash flow inefficiencies and distorting decision-making, adversely affecting effective working capital management. In contrast, goal-setting theory (Locke & Latham, 1990) states that when organizations set specific goals—such as reducing accounts receivable days or optimizing inventory—managers are motivated to adopt efficient practices. This focus on measurable targets fosters accountability and collaboration, improving cash flow and liquidity. Clear goals enhance team performance and encourage proactive resource management, resulting in more effective working capital management.

Despite prior studies examining various factors that influence WCM, such as operating cycle (OC), return on assets (ROA), and the company's degree of internationalization, growth, size, GDP, interest, and tax rates, the specific impact of EM on WCME has been relatively underexplored in prior research (Abuzayed, 2012; Lazaridis & Tryfonidis, 2006). Using a sample of 354 non-financial enterprises in Vietnam from 2009 to 2022, this research adds significantly to the body of knowledge on the effects of corporate governance and EM on WCME. Additionally, the study also makes a valuable contribution to the theoretical framework of WCM by incorporating additional factors that may influence WCM. These control variables include ROA, OCF, LEV, SGR, SIZE, and AGE. The selection of these control variables is crucial and is also highlighted in the literature (Chiou et al., 2006; Deloof, 2003; Nastiti et al., 2019).

The main objectives of this study are to investigate the following research questions:

1) How does EM affect the working capital of Vietnam-listed non-financial firms on the Ho Chi Minh Stock Exchange (HOSE)?
2) Does CEO characteristics affect the working capital of non-financial firms in Vietnam that are listed on the Ho Chi Minh Stock Exchange?
3) How does EM influence the WCME components?

The findings will contribute to the body of literature in the following ways:

Firstly, Vietnam's stock market is still in the early stages of development, and this context has been marked by financial scandals and significant disparities between the pre-audited and post-audited profits reported in company financial statements. Consequently, there is a growing sense of concern among investors and other users of financial information regarding the overall quality of accounting data and the prevalence of EM practices in the country. Despite the heightened scrutiny around these issues, there has been limited research conducted on EM within the Vietnamese market setting. While the significance of this topic is widely acknowledged, only a few empirical studies have been concluded so far. Moreover, these existing studies have been constrained by methodological limitations and small sample sizes (Nguyen & Nguyen, 2016). To the best of our knowledge, this is one of the first studies of its kind that focuses on the EM of listed firms in the Vietnamese stock market. Furthermore, this study offers a clearer picture of how EM affects WCME and enriches the body of knowledge on WCM by investigating how EM affects WCM elements. The analysis of individual components provides new insights into how financial managers control the CCC, receivable, inventory, and payable management procedure to achieve their goals.

Second, researchers have had difficulty defining or quantifying EM, a complex and demanding process. The M-Score and Jones models are statistical methods used to detect unethical EM, a fraudulent practice that involves manipulating financial statements to inflate or deflate reported earnings. However, these two models differ in their complexity, data requirements, and accuracy. In terms of complexity, the M-Score model is more intricate due to its use of multiple ratios and a more sophisticated calculation method. Regarding data requirements, the M-Score model demands a broader range of financial information, such as working capital accruals, depreciation and amortization, and asset turnover. When it comes to accuracy, the M-Score model generally outperforms the Jones model in identifying EM cases. In this study, we apply the M-score model which is the more advanced and accurate measurement to detect EM. This model provides a more comprehensive approach and uses a wider range of financial indicators.

Thirdly, corporate governance plays a major part in every organization's success and efficiency. By establishing the optimal WCM policy, the CEO plays a significant role in regulating the management of working capital (Burney et al., 2021; Hu et al., 2024; Ujah et al., 2021). By distinguishing between the CEO's responsibilities of making strategic decisions and overseeing and monitoring them as they act upon those decisions, agency theory seeks to keep management decisions apart from corporate control. Ineffective WCM compromises a firm's ability to operate effectively and to survive. Given the significance of WCM for a company's long-term value and day-to-day operations, it is hypothesized that CEOs ought to be highly motivated to develop WCM policies. As a result, the financial performance and business value are impacted by the working capital regulations implemented. While a cautious working capital financing policy uses fewer current liabilities and more long-term debt to finance operations, an aggressive working capital policy adopted by the CEO indicates higher levels of current liabilities and less long-term debt. The accomplishment of the shareholders' overarching goals is related to whichever policy the CEO chooses to implement (Coleman et al., 2020). This study adds to the expanding body of research highlighting the significance of CEO characteristics in

shaping a company's WCM policies. We have uncovered evidence regarding the impact of CEO tenure, gender, and dual leadership roles on the firm's approach to WCM.

This paper is organized as follows: The introduction is given in Section 1; the literature review is presented in Section 2; the sample, data sources, and research techniques are described in Section 3; the findings, analysis, and discussion are presented in Section 4; and the closing remarks are provided in Section 5.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Earnings Management Concept

Earnings management (EM) is a hot topic amongst academics, regulators, and operators globally since the reliability of financial information results in improved outcomes (Healy & Wahlen, 1999). In essence, EM conceals a company's actual performance from its stakeholders and reduces the reliability of its accounting data (Orazalin & Akhmetzhanov, 2019).

The use of EM allows managers to conceal their lack of effectiveness, potentially leading to their disregard for addressing inefficiencies in inventory management that arise from either excessive or insufficient investments. They may display indifference towards achieving optimal receivables management or lack the motivation to negotiate favorable business terms with customers or suppliers on behalf of their companies. The inclination towards EM can foster a sense of complacency among managers, causing them to become apathetic towards optimizing working capital and resulting in an excessive immobilization of capital.

In the literature, EM has been explored for years, with various models developed, including the accumulated accruals Jones model, modified Jones model, earnings distribution model, specific accrual models, and M-score model. From the perspective of REM, the M-Score model was developed by Beneish (2001) in 1999 as a forensic tool to supplement the Altman Z-Score model, to protect the analysis of shareholders, creditors, and bankers. By using eight financial ratio-related factors namely the days' Sales in Receivables Index (DSRI); Gross Margin Index (GMI); Asset Quality Index (AQI); Sales Growth Index (SGI); Depreciation (DEPI); Sales, General and Administrative Expenses (SGAI); Accruals; and Leverage Index (LVGI), Beneish created a strong technique for distinguishing both earnings manipulators and non-earnings manipulators. Aghghaleh et al. (2016) claimed that the model is a helpful approach for investigating the behavior of corporate earnings manipulators and that it may be used to improve financial reporting quality and enhance investor protection. Other researchers also concur that the Beneish M-score is a reliable tool for detecting financial fraud. The M-score model was developed to aid auditors in their accounting work. During the process of developing the EM detection tool, the Beneish M-score model has been utilized by several global corporations to identify instances of income manipulation.

Beneish M-Score Model

The model developed by Beneish to assess EM is represented by the following equation:

$$M - Score = -4.84 + (0.920 \times DSRI) + (0.528 \times GMI) + (0.404 \times AQI) + (0.892 \times SGI) + (0.115 \times DEPI) - (0.172 \times SGAI) - (0.327 \times LEVI) + (4.679 \times TATA)$$

A higher M-score denotes a higher probability of an organization using EM to inflate sales statistics to influence accounting results. The balance between a company's sales and accounts receivable is evaluated using the DSRI metric. The GMI evaluates how well a

business performed in the previous year and the current year. With an emphasis on industries with little chance of future gains, AQI assists in analyzing changes in asset quality over time. SGI is a measure that captures the ratio of sales between the current year and the following year. SGAI tracks notable adjustments to a company's line items for expenses. A comparison of a company's financial leverage ratio over two years can be made possible using LEVI. The results of the investigation have yielded an M-Score of -1.78. The M-Score is a standard by which to judge whether or not a company has manipulated profits. The firm is considered to be inside the alert zone for profit manipulation if the M-Score is larger than -1.78, and vice versa.

2.2. Theoretical Framework

Agency Theory

According to Jensen & Meckling (2019), agency theory highlights the fundamental issue of conflict of interest arising from the separation of ownership and control, and the conflict between owners and managers often gives rise to managerial errors and misjudgments. According to agency theory, individuals will consistently behave opportunistically, which may include engaging in EM to maximize their wealth. Related theory states that managers may engage in manipulating both their company's working capital and reported earnings by concentrating their investments solely on short-term profitable ventures. This strategy helps managers to achieve their performance goals. In contrast, investors tend to favor long-term investments that offer the prospect of high, sustainable returns on investment, often relying on financial statements to assess the value of their investments.

The Goal-Setting Theory

According to Locke et al. (1990), there is a strong connection between workplace performance and goal setting, emphasizing the need for establishing precise and challenging objectives. Goal-setting theory suggests that people tend to perform poorly when they simply strive to do their best without specific goals to strive for. In their empirical study across various industries and occupations, Locke et al. (1990) found that clear and challenging goals can enhance employees' performance and influence their work attitudes and behaviors. This application of the goal-setting theory can significantly impact an organization's financial performance by effectively managing working capital. By setting specific, challenging, and measurable goals related to working capital, such as reducing inventory levels, optimizing accounts receivable and payable, or improving cash flow conversion cycles, individuals can effectively strive towards achieving their goals and staying motivated. The clarity and focus attained through goal setting also facilitates the prioritization of critical components of WCM and directs attention and resources toward the most urgent needs. Regularly tracking progress and providing feedback allows organizations to identify areas for improvement, make timely adjustments, and refine their WCM strategies. This ongoing cycle of monitoring, evaluation, and adjustment promotes continuous improvement and optimization of working capital.

2.3. The Impact of EM on WCM

Many different factors affect efficient WCM. For instance, factors such as the nature of the business, the scale of operations, the production cycle, the broader business cycle, seasonality and production policies, credit policies, growth and expansion, price increases, operational efficiency, raw materials availability, depreciation policies, taxation, dividend policies, and retention policies can all influence a company's WCM. Over time, empirical literature has produced a variety of findings.

The goal of Chiou et al. (2006) was to identify the critical elements influencing WCM

in Taiwanese businesses. Their research also included internal and external factors, including macroeconomic issues (firm-specific variables). Meanwhile, using pooled OLS regression with a sample of Malaysian companies, Zariyawati et al. (2010) found a negative correlation between CCC and sales growth, debt ratio, and business size. Furthermore, because external funding is more expensive for companies with larger debt levels, their findings also showed that these companies had lower working capital. Hill et al. (2010) found that operational cash flow positively correlated with working capital requirements among US enterprises. They discovered a negative correlation between market-to-book value and financial difficulty.

Recently, Sawarni et al. (2023) examined a sample of 461 Indian-listed firms from 2014 to 2021. They used the M-Score as a proxy for earnings management and employed both the generalized method of moments and panel quantile regression techniques to investigate the link between EM and the effectiveness of working capital management. The results showed that EM has a detrimental effect on WCM, suggesting that managers who engage in EM tend to operate with a longer cash conversion cycle.

Hypothesis H_{1a}: The relationship between EM and WCM is negative.

Hypothesis H_{1b}: Inventory management is negatively impacted by EM tendency.

Hypothesis H_{1c}: Receivable management is negatively impacted by EM tendency.

Hypothesis H_{1d}: Payable management is negatively impacted by EM tendency.

2.3.1. CEO Gender and its Effect on WCM

Previous research has consistently shown that female CEOs tend to adopt more conservative WCM practices compared to their male counterparts (Huang et al., 2013). This is attributed to fundamental differences in risk preferences and ethical considerations between genders. This difference may stem from varying risk aversion levels, with female leaders often exhibiting a more cautious approach to financial management, which can lead to improved liquidity and reduced working capital days (Nastiti et al., 2019). Additionally, the presence of female executives in leadership roles has been associated with enhanced financial performance, as they may prioritize sustainable practices that optimize working capital utilization (Tarkom et al., 2022). Given the context described, the following hypothesis is proposed:

Hypothesis H_2: Female CEO gender has a positive impact on WCM.

2.3.2. CEO Tenure's Effect on WCM

CEO tenure refers to the duration for which an individual holds the position of Chief Executive Officer in a company. This period can range from a few years to several decades, and it plays a critical role in influencing various aspects of a company's operations and governance. Long-standing CEOs are better positioned to protect shareholder interests, as their experience enables them to align policies with long-term growth and stability. Understanding the organization's dynamic nature helps them implement strategies that benefit the firm, ensuring a more stable and sustainable management approach over time. This enhanced perspective allows experienced CEOs to make more informed decisions in the company's daily operations (Adhikari et al., 2021; Khalaf & Al-Tarawneh, 2019). Considering the scenario above, it is hypothesized that:

Hypothesis H_3: CEO tenure has a positive impact on WCM.

2.3.3. CEO Duality's Effect on WCM

The standard organizational structure of companies typically separates the roles of the CEO and the Chairperson of the Board of Directors. However, in some instances, the CEO also holds the position of Board Chairperson, and this situation is referred to as CEO duality. According to the stewardship theory, granting the CEO greater autonomy and decision-making power can be beneficial for the company (Donaldson et al., 1991).

When the CEO simultaneously holds the position of board chairperson, it allows the CEO to have a higher degree of self-determination. This can influence the company's leadership style and potentially enhance corporate performance (Tran & Pham, 2020). Furthermore, some argue that a CEO who holds both the CEO and board chairperson positions can gain more extensive knowledge of the business environment, enabling them to make more successful strategic decisions for the company. Furthermore, Coleman et al. (2020) found that CEO duality, where the CEO also holds the position of board chair, can improve the efficiency of accounts receivable management. This, in turn, helps to reduce the company's overall working capital requirements. Considering these findings, the following hypothesis is proposed:

Hypothesis H_4: CEO duality has a positive impact on WCM.

3. RESEARCH METHODOLOGY

3.1. Data

The final sample comprised 354 firms associated with 4,712 observations over the period from 2009 to 2022. Only non-financial firms with exposure data accessible in the Ho Chi Minh Stock Exchange database were included in the sample. To mitigate the impact of outliers, winsorizing was applied to all continuous variables at the 1% and 99% levels.

3.2. Variable Descriptions

Table 1: Variable Construction

Variable	Variable name	Measurement
Dependent variables		
CCC	Cash conversion cycle	IVD + RCD – PYD
IVD	Days in Inventory	Average inventory × 365 ÷ Cost of goods sold
RCD	Average collection period	Average receivable × 365 ÷ Sales
PYD	Average payment period	Average payment × 365 ÷ Cost of goods sold
Independent variables		
MSCORE	Earnings management	EM measurement by REM
CEOGENDER	CEO gender	A dummy variable of 1 when the CEO is a female and 0 otherwise.
CEOTENURE	CEO tenure	The length of CFO tenure
CEODUAL	CEO duality	A dummy variable assigns value 1 if the same person occupies the Chairperson of the board and the CEO and 0 if otherwise
Control variables		
ROA	Profitability	Net Income ÷ Average Total Assets.
OCF	Operating cash flow	Total Cash Received For Sales - Cash Paid For Operating Expenses.
LEV	Leverage	Total Debt ÷ Total Assets.
SGR	Growth	Year-on-year sales growth

SIZE	Size	The natural logarithm of total assets
AGE	Age	Number of years of firm's operation in the industry

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. dev.	Min	Max
CCC	4,217	1,919.414	62,097.285	-69,830.336	3,428,076
RCD	4,217	324.214	3,376.706	1.305	80,030.172
PYD	4,217	107.168	1,382.401	0.004	84,206.301
IVD	4,217	1,769.160	62,073.680	0.002	3,421,423
MSCORE	4,217	-2.987	62.131	-3,400.397	958.096
ROA	4,217	0.067	0.091	-1.587	0.896
OCF	4,217	0.007	0.502	-30.103	0.964
SGR	4,217	0.865	24.123	-116.436	1,079.210
LEV	4,217	0.473	0.213	0.001	0.992
SIZE	4,217	28.012	1.409	20.983	33.990
AGE	4,217	22.870	14.500	1	77
CEOTENURE	4,217	4.102	2.911	1	13
CEOGENDER	4,217	0.129	0.336	0	1
CEODUAL	4,217	0.198	0.399	0	1

Source: Authors' Calculations

Table 3: Correlation Matrix

No.	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	VIF
1	**CCC**	1														
2	**RCD**	0.852	1													
3	**PYD**	0.268	0.142	1												
4	**IVD**	0.549	0.036	0.416	1											
5	**MSCORE**	-0.773	-0.920	-0.044	0.003	1										1.09
6	**ROA**	-0.044	-0.034	-0.089	-0.042	0.012	1									1.22
7	**OCF**	0.019	0.027	0.045	-0.001	-0.004	0.027	1								1.07
8	**SGR**	-0.005	-0.006	-0.013	-0.002	0.274	0.008	0.026	1							1.35
9	**LEV**	0.046	0.029	0.177	0.065	-0.032	-0.410	0.083	0.027	1						1.09
10	**SIZE**	0.060	0.033	0.091	0.071	-0.016	-0.010	0.085	0.034	0.245	1					1.15
11	**AGE**	-0.054	-0.032	-0.057	-0.056	0.022	0.073	-0.241	-0.026	-0.158	-0.060	1				1.15
12	**CEOTENURE**	-0.022	0.004	0.046	-0.039	-0.012	0.043	0.022	-0.040	-0.088	0.114	-0.103	1			1.06
13	**CEOGENDER**	-0.012	0.016	0.103	-0.032	0.040	0.025	0.054	0.077	0.036	-0.040	-0.175	0.084	1		1.05
14	**CEODUAL**	0.022	0.004	-0.015	0.032	0.014	-0.023	-0.015	-0.020	0.012	-0.161	-0.143	0.043	-0.044	1	1.07

Source: Authors' Calculations

3.3. Research Methodology

3.3.1. Research Model

Model 1:

$$CCC_{i,t} = \beta_0 + \beta_1 MSCORE_{i,t} + \beta_2 OCF_{i,t} + \beta_3 ROA_{i,t} + \beta_4 SGR_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LNS_{i,t} + \beta_7 AGE_{i,t} + \beta_{8\text{-}10} CEOchar_{i,t} + \varepsilon_{i,t} \quad (1)$$

Model 2:

$$IVD_{i,t} = \beta_0 + \beta_1 MSCORE_{i,t} + \beta_2 OCF_{i,t} + \beta_3 ROA_{i,t} + \beta_4 SGR_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LNS_{i,t} + \beta_7 AGE_{i,t} + \beta_{8\text{-}10} CEOchar_{i,t} + \varepsilon_{i,t} \quad (2)$$

Model 3:

$$RCD_{i,t} = \beta_0 + \beta_1 MSCORE_{i,t} + \beta_2 OCF_{i,t} + \beta_3 ROA_{i,t} + \beta_4 SGR_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LNS_{i,t} + \beta_7 AGE_{i,t} + \beta_{8\text{-}10} CEOchar_{i,t} + \varepsilon_{i,t} \quad (3)$$

Model 4:

$$PYD_{i,t} = \beta_0 + \beta_1 MSCORE_{i,t} + \beta_2 OCF_{i,t} + \beta_3 ROA_{i,t} + \beta_4 SGR_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LNS_{i,t} + \beta_7 AGE_{i,t} + \beta_{8\text{-}10} CEOchar_{i,t} + \varepsilon_{i,t} \quad (4)$$

Where:

$CCC_{i,t}$, $IVD_{i,t}$, $RCD_{i,t}$, and $PYD_{i,t}$ present the dependent variables, including Cash Conversion Cycle, Days in inventory, average collection period, and average payment period of firm i at year t.

$MSCORE_{i,t}$ is the EM of firm i at year t;

$CEOchar_{it}$ represents the CEO characteristics such as CEO tenure, CEO gender, and CEO duality of firm i at year t;

Control variables include: OCF, ROA, SGR, LEV, SIZE, AGE

β_0 is considered to be a constant, and is the coefficient corresponding to the explained variables, β_1 to β_{10} are the parameter estimates, and $\varepsilon_{i,t}$ is the error term.

3.3.2. Research Methodology

This study employs panel data, which offers greater data variety, less collinearity, and greater degrees of freedom. Initially, the conventional regression techniques were employed, namely the panel data model's random effects model (REM), fixed effects model (FEM), and pooled ordinary least squares (POLS) regression model. To select the best model between the FEM and the REM, a Hausman test was performed. Next, tests were run for heteroskedasticity and autocorrelation to evaluate the selected model's dependability. The selected model was applied if all tests had passed. In contrast, generalized least squares (GLS) model was employed to modify the model in response to any autocorrelation or heteroskedasticity displayed.

4. EMPIRICAL RESULTS AND DISCUSSION

In the literature, most studies show a negative connotation with EM, as it is associated with manipulation or unethical practices. Our findings show a contrasting perspective of EM behaviors, investigating certain advantages when financial managers use EM responsibly and ethically. As shown in Table 4, the primary independent variable, the M-Score, exhibits a negative impact on CCC, IVD, RCD, and PYD at the 1% significance level. This finding suggests that as the tendency for EM increases, CCC, IVD, RCD, and PYD decrease. This also indicates that a financial manager who engages in EM is inclined to operate with a shorter CCC to improve

WCM. This result is supported by the goal-setting theory, which posits that setting specific and measurable goals can motivate people, helping them to achieve their objectives. To align their resources and efforts towards accomplishing these goals, organizations should establish quantifiable targets related to working capital, such as reducing inventory levels, improving cash flow conversion cycles, or optimizing accounts receivable and payable. These findings provide support for hypotheses H_{1a}, H_{1b}, H_{1c}, and H_{1d}.

Table 4: The impact of EM on WCM

	(1) **CCC**	(2) **IVD**	(3) **RCD**	(4) **PYD**
MSCORE	-7.855***	-0.010	-7.883***	-0.034***
	(0.059)	(0.032)	(0.050)	(0.009)
ROA	-402.300***	-126.600**	-280.300***	-36.130**
	(78.650)	(40.350)	(58.300)	(11.550)
OCF	-23.260	-27.420	-24.010	35.960***
	(38.710)	(28.770)	(29.380)	(8.101)
SGR	6.938***	0.035	6.965***	-0.009
	(0.192)	(0.106)	(0.163)	(0.030)
LEV	-100.900***	62.500***	-114.300***	46.370***
	(25.410)	(18.530)	(24.540)	(6.149)
SIZE	12.430*	7.966*	5.483*	1.936*
	(4.966)	(3.622)	(2.418)	(0.776)
AGE	-0.396	-0.227	-0.641*	0.055
	(0.289)	(0.253)	(0.262)	(0.069)
CEOTENURE	-5.651**	-2.012	-0.390	0.695*
	(1.731)	(1.400)	(1.215)	(0.347)
CEOGENDER	28.340*	-23.780**	22.770	13.060***
	(12.470)	(8.181)	(13.370)	(2.728)
CEODUAL	49.870***	45.330***	32.060***	-5.837*
	(13.350)	(9.890)	(9.320)	(2.403)
INTERCEPT	-118.800	-130.400	-15.510	-33.310
	(134.300)	(99.280)	(66.260)	(20.950)
Number of Observations	4,217	4,217	4,217	4,217

*Source: Authors' Calculation. *, **, *** denote significant at 10%, 5% and 1%.*

The impact of ROA on CCC, IVD, RCD, and PYD is negatively significant at the 1% level. The negative coefficient implies that more profitable firms can effectively operate with a lower CCC, fewer days in inventory, a shorter average collection period, and a shorter average payment period. This finding can be explained by the fact that profitable firms tend to possess greater market power, allowing them to negotiate more favorable terms with suppliers and customers. These profitable firms also maintain lower inventory levels and adopt more aggressive WCM strategies. Additionally, firms with higher profitability face fewer financial constraints compared to those with lower profitability. As demonstrated by Petersen et al. (1997), when a firm has high profitability, it enjoys enhanced access to credit from suppliers.

There is a positive and significant relationship between SGR and both CCC and RCD. These positive relationships can be explained by the firms with higher growth opportunities, usually gained through applying more credit policies to increase sales. Anticipating future sales growth may lead to an increase in inventory investments. Moreover, loosening credit policy to attract customers also leads to an increase in the average collection period. All of the above reasons lead to an increase in the days of the cash conversion cycle. These findings are supported by the studies of Chiou et al. (2006) and Petersen et al. (1997).

The analysis also reveals that leverage is negatively and significantly related to CCC and RCD at the 1% level. This suggests that highly leveraged firms face more severe limitations and constraints. The findings imply that financial managers can improve WCME by reducing the firm's debt level, as this can help avoid unnecessary tying up of capital in accounts receivables and inventories. This result supports the pecking order theory proposed by Myers (1984), which states that there is no target capital structure. According to this theory, firms prefer to choose capital in the following order: internal finance, debt, and equity. Firms with higher leverage have a lower ability to raise additional external capital. Consequently, financial managers often focus on enhancing WCME by optimizing the utilization of current assets and liabilities to ensure operations and maximize financial resources. These results are in line with Wasiuzzaman et al. (2013).

The estimated coefficient for SIZE is positive and statistically significant with CCC, IVD, RCD, and PYD at the 10% level. This positive coefficient indicates that firms with a larger size have longer CCC, RCD, and vice versa. Larger businesses typically make use of these advantages to secure more trade credit as they are more diversified and have greater access to financial markets. Smaller businesses, on the other hand, have additional financial limitations due to higher credit expenses and a lack of credit facilities from various sources. As a result, they try to use more trade credit and reduce inventories, decreasing CCC. Some of the past literature also shows the same result as indicated before, such as Raheman et al. (2007), Rimo et al. (2010), and Uyar (2009).

The results shown in Table 4 indicate that firm AGE has a negative impact on RCD at the 1% significance level. This implies that the company's accounts receivable days will decrease as it gets older. As they may access external finance sources more promptly and at a lesser cost than their younger counterparts, older businesses are better equipped to find financing sources. Consequently, older businesses obtain finance from sources more cheaply and effectively. Firm age therefore leads to producing higher cash flow in addition to being better at securing funding sources. Conversely, younger businesses show more growth, liquidity restrictions, and significant cash flow uncertainty. These findings are consistent with Nastiti et al. (2019).

There is a significant negative correlation between CEO tenure and CCC. The negative coefficient argues that longer CEO tenure is generally associated with more efficient WC. Several research studies have found that CEO tenure and directorial responsibilities have a significant influence on organizational policies, thereby directly impacting the company's performance and profitability. In other words, greater CEO experience correlates with a better

vision of market conditions, leading to more informed decisions in daily operations, which in turn influences the formulation of receivables and payables policies within the company (Haniffa et al., 2006). Furthermore, a longer CEO tenure fosters stability, allowing the CEO to execute long-term plans and initiatives that promote sustainable growth and align with the company's strategic objectives. In addition, Fiador (2016) stated that the period of a CEO's tenure has a monitoring function and attracts attention to the application of the corporate governance process throughout the organization, particularly when it comes to managing the working capital of the company. Therefore, stable leadership leads to the development of consistent WCM methods, which are critical for maintaining financial health and performance over the long term. Therefore, hypothesis H_3 is also supported by the results, indicating a significant negative relationship between CEO tenure and working capital.

As shown in Table 4, the positive coefficients for CCC and PYD suggest that firms led by female CEOs tend to have longer CCC and average payment periods. This indicates that female CEOs adopt a more conservative and risk-averse approach to WCM. These results are in line with Guizani et al. (2023) and reject hypothesis H2. This relationship can be explained by the idea that conservative WCM strategies place greater emphasis on keeping working capital levels higher to provide a safety net in case of unanticipated circumstances. This entails maintaining higher stock levels and excess cash on hand. As a result, the conservative strategy makes the company less susceptible to rises in short-term rates than other techniques. The firm finances current assets more via long-term financing and less through short-term financing.

The evidence indicates that CEO duality has a negative impact on WCME as can be seen by the positive coefficient of CCC, IVD, RCD, and negative coefficient of PYD, rejecting Hypothesis H_4. This relationship between CEO duality and WCM can be understood through the lens of agency theory. Anderson et al. (2003) explored the areas of risk-taking and resource allocation and discovered that when a CEO also holds a significant ownership stake in the company, they tend to adopt more conservative WCM practices. To provide a safety net for unforeseen circumstances, CEOs often maintain larger amounts of working capital through the implementation of a conservative WCM plan. This entails maintaining higher stock levels and more cash on hand.

5. CONCLUSIONS

Prior research conducted in different nations consistently indicated the adverse consequences of EM on the management of working capital. However, this article presents new findings that bring a new viewpoint on the specific impact of EM. Our findings show that companies engaging in EM tend to have shorter CCC, faster collections of receivables, and payments to suppliers, supporting Goal-setting theory. This suggests that to help organizations align their resources and efforts towards accomplishing these goals, they should set specific, quantifiable goals related to working capital, such as decreasing inventory levels, improving cash flow conversion cycles, or optimizing accounts receivable and payable.

The new findings show that firms led by female CEOs and CEOs holding dual roles are inclined to adopt more conservative WCM practices due to their inherent risk aversion. Additionally, the research highlights that longer-tenured CEOs are generally associated with more effective working capital management. CEO experience is linked to a clearer understanding of market conditions, resulting in more informed daily operational decisions, subsequently impacting the formulation of the company's receivables and payables policies. Consequently, consistent leadership is essential for developing stable WCM methods, critical for maintaining financial health and long-term performance.

A limitation of this study is the lack of data to cover all firms in Vietnam, with data limited to non-financial listed firms on the HOSE. Furthermore, the potential influence of

earnings management on working capital poses a significant challenge. Since earnings management techniques can artificially manipulate reported earnings, their impact on working capital is unpredictable and depends on the specific methods employed. This inherent variability introduces a potential bias, affecting the reliability of the findings and requiring careful consideration when interpreting the results. While some methods may lead to an increase in working capital, others may have the opposite effect. To evaluate a company's true financial health, stakeholders must be aware of the potential for earnings management and carefully analyze the company's financial statements. For upcoming studies, in-depth research and analysis could explore a wider range of companies, utilize diverse methodologies, and examine different economic environments to gain a more comprehensive understanding of earnings management practices.

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REFERENCES

Abuzayed, B. (2012). Working capital management and firms' performance in emerging markets: the case of Jordan. *International Journal of Managerial Finance*, 8(2), 155–179.

Adhikari, H. P., Krolikowski, M. W., Malm, J., & Sah, N. B. (2021). Working capital (mis) management–impact of executive age. *Accounting & Finance*, 61(1), 727–761.

Aghghaleh, S. F., Mohamed, Z. M., & Rahmat, M. M. (2016). Detecting Financial Statement Frauds in Malaysia: Comparing the Abilities of Beneish and Dechow Models. *Asian Journal of Accounting & Governance*, 7.

Anderson, R. C., & Reeb, D. M. (2003). Founding-family ownership, corporate diversification, and firm leverage. *The Journal of Law and Economics*, 46(2), 653–684.

Beneish, M. D. (2001). Earnings management: A perspective. *Managerial Finance*, 27(12), 3–17.

Boisjoly, R. P., Conine Jr, T. E., & McDonald IV, M. B. (2020). Working capital management: Financial and valuation impacts. *Journal of Business Research*, 108, 1–8.

Burney, R. B., James, H. L., & Wang, H. (2021). Working capital management and CEO age. *Journal of Behavioral and Experimental Finance*, 30, 100496.

Chiou, J.-R., Cheng, L., & Wu, H.-W. (2006). The determinants of working capital management. Journal of American Academy of Business, 10(1), 149–155.

Coleman, M., Wu, M., & Baidoo, M. (2020). Corporate governance and working capital policy: an unobserved influence. Emerging Economy Studies, 6(1), 106–122.

Deloof, M. (2003). Does working capital management affect profitability of Belgian firms? Journal of Business Finance & Accounting, 30(3-4), 573–588.

Donaldson, L., & Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. Australian Journal of Management, 16(1), 49–64.

Fiador, V. (2016). Does corporate governance influence the efficiency of working capital management of listed firms: Evidence from Ghana. African Journal of Economic and Management Studies, 7(4), 482–496.

Guizani, M., & Abdalkrim, G. (2023). Female directors and working capital management: aggressive vs. conservative strategy. Management Research Review, 46(7), 976–995.

Haniffa, R., & Hudaib, M. (2006). Corporate governance structure and performance of Malaysian listed companies. Journal of Business Finance & Accounting, 33(7-8), 1034–1062.

Healy, P. M., & Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting. Accounting Horizons, 13(4), 365–383.

Hill, M. D., Kelly, G. W., & Highfield, M. J. (2010). Net operating working capital behavior: a first

look. Financial Management, 39(2), 783–805.
Hu, Q., Bhuiyan, M. B. U., & Houqe, M. N. (2024). CFO demographics and working capital management in China. Journal of Emerging Market Finance, 23(1), 56–82.
Huang, J., & Kisgen, D. J. (2013). Gender and corporate finance: Are male executives overconfident relative to female executives? Journal of Financial Economics, 108(3), 822–839.
Ismail, R. (2017). Working capital–An effective business management tool. International Journal of Humanities and Social Science Invention, 6(3), 12–23.
Jensen, M. C., & Meckling, W. H. (2019). Theory of the firm: Managerial behavior, agency costs and ownership structure. In Corporate governance (pp. 77–132). Gower.
Khalaf, B. A., & Al-Tarawneh, A. (2019). Impact of corporate governance on the efficiency of managing working capital in the manufacturing sector in Jordan. Jordan Journal of Business Administration, 15(2).
Lazaridis, I., & Tryfonidis, D. (2006). Relationship between working capital management and profitability of listed companies in the Athens stock exchange. Journal of Financial Management and Analysis, 19(1).
Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Prentice-Hall, Inc.
Moussa, A. A. (2018). The impact of working capital management on firms' performance and value: Evidence from Egypt. Journal of Asset Management, 19, 259–273.
Myers, S. C. (1984). Capital structure puzzle. National Bureau of Economic Research Cambridge, Mass., USA.
Nastiti, P. K. Y., Atahau, A. D. R., & Supramono, S. (2019a). The determinants of working capital management: the contextual role of enterprise size and enterprise age. Business, Management and Economics Engineering, 17(2), 94–110.
Nastiti, P. K. Y., Atahau, A. D. R., & Supramono, S. (2019b). Working capital management policy: Female top managers and firm profitability. Central European Management Journal, 27(3), 107–127.
Nguyen, H. A., & Nguyen, H. L. (2016). Using the M-score model in detecting earnings management: Evidence from non-financial Vietnamese listed companies. VNU Journal of Economics and Business, 32(2).
Orazalin, N., & Akhmetzhanov, R. (2019). Earnings management, audit quality, and cost of debt: evidence from a Central Asian economy. Managerial Auditing Journal, 34(6), 696–721.
Petersen, M. A., & Rajan, R. G. (1997). Trade credit: theories and evidence. The Review of Financial Studies, 10(3), 661–691.
Raheman, A., & Nasr, M. (2007). Working capital management and profitability–case of Pakistani firms. International Review of Business Research Papers, 3(1), 279–300.
Rimo, A., & Panbunyuen, P. (2010). The effect of company characteristics on working capital management: A quantitative study of Swedish listed companies.
Sawarni, K. S., Narayanasamy, S., & Padhan, P. C. (2023). Impact of earnings management on working capital management efficiency. Finance Research Letters, 54, 103778.
Tarkom, A., Nochebuena-Evans, L., & Wang, H. (2022). CFO gender and working capital management. Available at SSRN 4117958.
Tiwari, S. C., Sayyad, M., Azam, M. S., & Sudesh, N. S. (2023). Determinants of WCM of Indian listed firms: A GMM regression approach. Cogent Economics & Finance, 11(1), 2199550.
Tran, N., & Pham, B. (2020). The influence of CEO characteristics on corporate environmental performance of SMEs: Evidence from Vietnamese SMEs. Management Science Letters, 10(8), 1671–1682.
Ugwu, J. I., & Nzewi, U. C. (2016). An evaluation of the effect of external debt on economic growth indices in Nigeria.
Ujah, N. U., Tarkom, A., & Okafor, C. E. (2021). Working capital management and managerial

talent. International Journal of Managerial Finance, 17(3), 455–477.

Uyar, A. (2009). The relationship of cash conversion cycle with firm size and profitability: an empirical investigation in Turkey. International Research Journal of Finance and Economics, 24(2), 186–193.

Wasiuzzaman, S., & Arumugam, V. C. (2013). Determinants of working capital investment: A study of Malaysian public listed firms. Australasian Accounting, Business and Finance Journal, 7(2), 63–83.

Wibowo, S., & Ryalvin, R. (2023). The Influence of Working Capital Management on the Profitability of Manufacturing Companies. Proceedings of the 4th International Conference on Applied Economics and Social Science, ICAESS 2022, 5 October 2022, Batam, Riau Islands, Indonesia.

Zariyawati, M. A., Taufiq, H., Annuar, M. N., & Sazali, A. (2010). Determinants of working capital management: Evidence from Malaysia. 2010 International Conference on Financial Theory and Engineering, 190–194.