Female CEOs and Cash Holdings: The Moderating Role of Corporate Governance and CEO Power – Empirical Evidence from Listed Companies in Malaysia

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Abstract

This study examines the impact of female CEOs on corporate cash holdings in listed Malaysian firms, addressing mixed findings on gender diversity in financial management. Drawing from Upper Echelons and Agency Theories, the hypothesis is that female CEOs hold less cash, with this effect moderated by corporate governance and CEO power. The study analyses 246 publicly listed firms in Bursa Malaysia from 2009 to 2019, using 5,689 firm-year observations. Financial data were sourced from DataStream, and governance and CEO profile data were manually collected from annual reports. Panel regression analysis was employed to test the hypotheses, controlling for firm size, performance, leverage, and market-to-book value. Governance variables (board independence, size, and female representation) and CEO power dimensions (founder status, duality, tenure, ownership, multiple directorships, and education) were examined as moderators. The results show that female CEOs are associated with lower cash holdings, with board independence mitigating and female board amplifying this effect. CEO power, such as multiple directorships and postgraduate education, also influences cash holdings, with experienced and educated female CEOs holding more cash. The findings highlight the complex role of gender diversity, governance, and CEO power in shaping financial strategies, offering insights for corporate governance improvements and policy considerations.

Keywords: Cash holding; Female CEO; Board governance; CEO power

1. Introduction

As reported by S&P Global Broad Market Index, there is a widening gap in policy about the appointment of female chief executive officer (CEO) (Huerta, 2024). Specifically, some countries increased the percentage of female CEOs, whereas some reduced. According to Fortune, only 7% of CEOs appointed in 2024 were female. This changing female CEO percentage is explained in the research where the findings on female CEO-to-firm outcomes are antithetical. The study by Faccio et al. (2016) showed a higher survival rate and lower risk-taking. In contrast, Kolev (2012) shows that female CEOs underperformed in terms of shareholders' returns by 0.35%.

In 2022, Malaysia achieved its highest level of female representation in senior management positions at 40%, the highest since 2004. However, this peak contrasts with the lower percentages in previous years, such as in 2019, when only 17% of CEOs or managing directors were female. Interestingly, higher education in Malaysia is dominated by female staff and students, who account for 56.8% and 61%, respectively (Adam, 2022). Therefore, the primary objective of this study is to provide new insights into these contradictory

findings. Specifically, this study examines the relationship between female CEOs and corporate cash holdings, which can be influenced by risk-taking behaviour.

According to the upper Echelon theory, organisational outcomes, i.e. corporate cash holding level, corporate risk-taking, and firm performance, are partially explained by managerial characteristics such as gender and education (Kaplan et al., 2012). For instance, Doan and Iskandar-Datta (2020) examine the relationship of CEOs' gender characteristics on the risk-taking proxy by cash holding policy, and Orens and Reheul (2013) examine the effect of CEOs' educational background and demographics on the value of excess cash. In the finance literature, financial policy and investment decisions may be affected by overconfident CEOs (Malmendier et al., 2011). Interestingly, female directors are slightly more risk-loving than male directors. Established on Agency Theory, female representation in top management is negatively related to agency cost (Jurkus et al., 2011).

Therefore, this study investigates the effect of female CEOs on cash holdings and examines the moderating effect of corporate governance practices and CEO power. Specifically, it explores the moderating effect of board independence, the board size, the board female percentage, and six dimensions of CEO power (e.g., founder, duality, tenure, ownership, multiple directorships, and education level). Female CEOs hold less cash than their male counterparts, and the relationship is robust to different model specifications. However, the negative relationship is moderated by board independence, experience, and education level. On the other hand, female representation on the board magnifies the negative relationship.

This study contributes significantly to the literature on corporate finance and gender leadership by highlighting the nuanced ways in which female CEOs influence corporate cash holdings and how various corporate governance factors moderate this impact. By focusing on Malaysian listed companies, the research adds a regional perspective to the broader discussion on gender and financial management, offering particularly relevant insights for emerging markets. The findings underscore the role of corporate governance structures in shaping the financial decision-making processes under female leadership, thereby providing actionable insights for policymakers and practitioners aiming to optimise governance practices and improve financial management strategies. Additionally, the study enriches the discourse on gender diversity in corporate leadership by demonstrating that female CEOs do not operate in isolation but within a framework influenced by governance mechanisms and CEO-specific characteristics.

Hypothesis Development

The studies by Faccio et al. (2016) report that female CEOs significantly reduce corporate risk-taking, which can be proxied by higher cash holding levels. Similarly, Ho et al. (2015) found that female CEOs are correlated with conservatism in accounting practices, which may also be explained by risk aversion. Skała and Weill (2018) show that female CEOs are more risk-averse in the banking industry than their counterparts. Xu et al. (2019) and Jilani et al. (2023) explain the risk-aversion behaviour of female CEOs as a precautionary motive for holding more cash.

However, Doan and Iskandar-Datta (2020) found that female chief financial officers (CFO) reduce cash holding in firms with excess cash for dividend distribution. Dividend distribution, in turn, addresses agency problems, which may increase the value of cash

holding. Lo et al. (2023) show that female chairpersons, as the most influential person in Taiwan's companies, have higher leverage and volatility, which are correlated with risk-taking. In the banking sector, female CEOs increase equity risk during financial crises but maintain the same level of risk-taking (Liu and Wu, 2023). Female CEOs are not more risk-averse when compared with the male counterparts in the top management position (Faraga and Mallinb, 2016). Huang et al. (2024) investigate the difference in debt level for male and female CEOs, results in no different in debt level. However, the debt level increases when there is a transition from male CEOs to female CEOs, which indicates higher risk-taking. Tosun et al. (2022) find that female directors who break through the glass ceiling are not more cautious (i.e. risk-averse) or optimistic which could cause higher cash holdings. Ullah et al. (2021) elaborate further that female CEOs make better financial decision in investment efficiency. Similarly, Mo and Lee (2022) further confirmed that female CEOs make better investment decision regarding labour efficiency. These literatures focuses on different aspects of female CEOs on financial and investment decisions and find that female CEOs are behaving distinctly with the male counterparts. As the cash holdings increase in an alarming trend recently, a different gender of CEOs is hypothesized to manage the cash differently. Therefore, we propose the gender effect as follows:

Hypothesis 1: Female CEOs negatively influence corporate cash holding

Yang and Xue (2023) discover that board diversity has a positive impact on marginal value of corporate cash holdings. the relationship is moderated by board independence. Bona-Sánchez et al. (2023) find that the presence of internal dealings, having two or more female directors reduces corporate cash holdings by enhancing financial policy monitoring and providing external resources, which help mitigate the firm's need for cash reserves. Ullah et al. (2024) discuss about rookie independent directors and find a positive significant effect on cash holdings. The study by Akhtar et al. (2021) show that the percentage of independent directors on the board has a moderating effect on the cash policy. For instance, a vigilant board characterised by independence reduces cash holdings (Lee and Lee, 2009), whereas a larger board size increases cash holdings during regular periods (Cambrea et al., 2022). However, the effect of large board size on cash holding will be reduced for survival purposes. Large board size hinders the monitoring function and leads to higher cash holdings (Lee and Lee, 2009). Likewise, a higher percentage of female directors and chairs are negatively correlated with cash reserve (Cambrea et al., 2020). Elamer and Utham (2024) Find that firms with more female directors hold more cash. A higher percentage of female representations on the board reduces the free cash flow problem arising from agency theory by increasing dividend distribution (Guizani and Abdalkrim, 2022). This board diversity hurts cash holdings and is more significant when there are more female independent directors (Cambrea et al., 2020; Guizani and Abdalkrim, 2022; Jilani et al., 2023). Wongsinhirun et al. (2023) describe that board gender diversity enhance oversight function, resulting an improved agency problem. Yarram and Adapa (2022) further support that woman on board and their functions and performance significantly and negatively influence corporate risk-taking in firms. Tosun et al. (2022) distinguish that female directors moderate the tendency of overconfident CEOs to hold sub-optimal cash through effective monitoring on corporate decision making. Therefore, we propose the monitoring hypothesis as follows:

Hypothesis 2: Stronger corporate governance practices moderate the relationship between female CEOs and corporate cash holdings

There are six proxies for CEO power, i.e. duality, ownership, founder, tenure, multiple directorship, and education. Supported by the Agency Theory, lower managerial ownership and founder-CEO positively influence cash holdings (Akhtar et al., 2021). Similarly, Ozkan and Ozkan (2004) also show that managerial ownership influences cash holdings. Analysing the post-IPO cash holding and the marginal value of cash, founder CEOs demonstrate a higher level than the non-founder CEOs' governance regime (Jain et al., 2013). However, this relationship will be moderated with concentrated board power (Jain et al., 2013). Besides, CEO duality increases cash holdings during regular periods compared to crisis periods (Cambrea et al., 2022). Additionally, severe agency problems and CEO duality worsen the positive relationship between CEO tenure and cash holdings (Cai and Li, 2022). Likewise, a longer tenure CEO reduces excess cash holdings (Lim and Lee, 2009). Looking at the Southeast Asian capital market, shorter CEO tenure negatively correlates with cash holdings (Suherman et al., 2021). Contrastively, Muttaqin (2023) found that tenure does not affect cash holdings despite gender diversity and education being considered.

Busyness of boards affects the effectiveness of roles and responsibilities negatively. The quality of performance may be impaired by busyness and over-commitment to other directorship (Boubaker et al., 2015). Jiraporn et al. (2009) demonstrates that busy boards are associated with weak corporate governance. Besides, greater capital allocation and investment efficiency are related to low board busyness (Chen and Chen, 2012). Contrastingly, Ferris et al. (2003) found that board busyness, measured by multiple directorships, is not associated with a greater probability of securities fraud litigation. Moreover, directors will be more concerned with poor decisions that would render reputational damage (Fama and Jensen, 1983). The multiple directorships provide directors with additional roles in strategic advisory, which improve the firm outcome and a better decision (Carpenter and Westphal, 2001).

Lastly, Mun et al. (2018) document that CEOs' education level and educational background influence excess cash. Specifically, CEOs with a business major or a postgraduate qualification increase the value of excess cash. Likewise, Faraga and Mallinb (2016) state that CEOs with postgraduate qualifications tend to proceed with riskier decisions from Chinese IPO analysis. Extending beyond IPOs, CEOs' education levels are found to be negatively correlated with risk-taking in Chinese-listed companies (Zhang et al., 2023). Furthermore, firms with overseas experience executives perform better in corporate social responsibility (Yan et al., 2023). Directors with foreign experience tend to hold more cash due to precautionary motive to fund risky foreign project (Yu and Wang, 2024). Thus, we propose the education hypothesis that education and experience have a negative effect on the relationship between female CEOs and corporate cash holding.

Hypothesis 3: CEO power moderates the relationship between female CEOs and corporate cash holdings

2. Methodology and Data Collection

Using 246 publicly listed firms traded on Bursa Malaysia from 2009 to 2019, this study examines the impact of female CEOs on cash holding. The dataset consists of 5,689 firm-year observations. We do not proceed into 2020 as Malaysia's COVID-19 pandemic has been an outbreak since March 2020, when the government announced the first Movement Control Order (Okwonu et al., 2020). This causes an abnormal duration in corporate performance. It will be difficult for us to define precisely when the business has resumed its normal state, at least for two years.

All the financial data are downloaded from DataStream, while governance data and the CEO profile are hand-collected from the annual report. We report the definitions of all the variables in Table 1.

Table 1: Definitions of variables

Acronym	Variable	Definitions
ln(Cash)	Cash holdings	Natural logarithm of cash to total asset ratio.
Dfemale	Female CEO	Dummy variable takes the value of one if the CEO is a female, zero otherwise.
ROA	Return on assets	Earnings before interest and taxes are divided by the average of the total assets in 2019 plus the total assets in 2018.
SIZE	Firm size	Natural logarithm of total assets.
LEVERAGE	Firm leverage	Total liabilities divided by total assets.
MTBV		Market to book value
BINDEPENDENT	Board independence	Number of independent directors divided by board size
BSIZE	Board size	Total number of directors sitting on the board
BDIVERSITY	Board diversity (in gender)	Number of female directors divided by board size
$D_{Founder}$	CEO-founder	A dummy variable is assigned to 1 if the CEO is also the founder of the firm, and 0 otherwise
$D_{Duality}$	CEO duality	A dummy variable is assigned to 1 if the CEO is also the chairperson of the firm at the same time, and 0 otherwise
TenureCEO	CEO tenure	The number of years serving as the CEO
OwnershipCEO	CEO ownership	Percentage of shareholdings by the CEO
$D_{Multiple}$	CEO Multiple directorship	A dummy variable is assigned to 1 if the CEO holds other directorship commitment apart from the CEO role, and 0 otherwise
$D_{Postgraduate}$	Postgraduate education level	A dummy variable is assigned to 1 if the CEO possesses a postgraduate qualification or higher, and 0 otherwise

We employed panel regression to verify our hypotheses. To examine H1 on the relationship between female CEOs and cash holding, we estimated panel regression on four control variables as follows:

$$\ln(Cash)_{it} = \beta_0 + \beta_1 D_{FemaleCEO,it} + \beta_2 SIZE_{it} + \beta_3 ROA_{it} + \beta_4 LEVERAGE_{it} + \beta_5 MKTB_{it} + Year_t + Industry_g + Firm_i + \varepsilon_{it} \quad (1)$$

where the dependent variable ln(Cash) represents cash holding, measured by cash

equivalence divided by total assets; the main independent variable, female CEO is represented by $D_{FemaleCEO,i}$ a dichotomy dummy variable takes a value of 1 if the CEO is female and 0 otherwise. This baseline model has four control variables: firm size (SIZE), firm performance (ROA), firm leverage (LEVERAGE), and market-to-book value (MKTB). These control variables are all winsorised at the 1st — 99th percentile.

To examine H2, we added board governance variables and their interaction with the female CEO dummy, one at a time. The three different dimensions of board governance are board independence (BINDEP), the size of the board (BSIZE), and board diversity (BDIVERSITY), represented by the ratio of female directors. The full model is shown in the following equation:

$$\ln(Cash)_{it} = \beta_0 + \beta_1 D_{FemaleCEO,it} + \beta_2 SIZE_{it} + \beta_3 ROA_{it} + \beta_4 LEVERAGE_{it} + \beta_5 MKTB_{it} + \sum_{j=1}^{k} \beta_j BOARDGOV_{j,it} + \sum_{j=1}^{k} \beta_j \left(D_{FemaleCEO,it} x BOARDGOV_{j,it}\right) + Year_t + Industry_g + Firm_i + \varepsilon_{it} \quad (2)$$

To examine H3, we replaced the interaction variable from board governance to CEO power. There are six dimensions of CEO power: CEO-founder ($D_{Founder}$) is a dummy variable, duality ($D_{Duality}$) is a dummy variable, CEO tenure (TenureCEO), CEO ownership (OwnershipCEO), multiple directorships ($D_{Multiple}$) is a dummy variable, and postgraduate education level ($D_{Postgraduate}$) is a dummy variable. The full model is shown below:

$$\ln(Cash)_{it} = \beta_0 + \beta_1 D_{FemaleCEO,it} + \beta_2 SIZE_{it} + \beta_3 ROA_{it} + \beta_4 LEVERAGE_{it} + \beta_5 MKTB_{it} + \sum_{j=1}^{k} \beta_j CEOPOWER_{l,it} + \sum_{m=1}^{n} \beta_j (D_{FemaleCEO,it} x CEOPOWER_{m,it}) + Year_t + Industry_g + Firm_i + \varepsilon_{it} \quad (3)$$

3. Results

As tabulated in Table 2, Malaysian listed companies hold about 10.61% of their assets in cash on average. There is considerable variation (standard deviation of 10.87%) in cash holdings among these companies, with a minimum of 0.11% and a maximum of 53.86%. This indicates significant differences in liquidity practices across firms. Meanwhile, Table 3 demonstrates the correlation between variables in which ROA and MKTB positively correlate with cash holdings, suggesting that more profitable companies and those with higher market-to-book ratios tend to hold more cash. Besides, LEVERAGE shows a significant negative correlation with cash holdings, indicating that companies with higher debt levels tend to have less cash. Lastly, the governance-related variables (e.g. board size, board diversity, and CEO characteristics) have a small correlation with cash holdings.

Table 4 shows the baseline regression result on the relationship between female CEOs and cash holdings. The dataset consists of 5,689 firm-year observations covering 2009 to 2019 from Malaysia-listed companies. The $D_{FemaleCEO}$ is a dummy variable assigned to 1 if the CEO is female and 0 otherwise. Firm size (SIZE), return on asset (ROA), firm leverage (LEVERAGE), and market-to-book value (MKTB) are the controlling variables. These control variables are all winsorised at the 1st – 99th percentile.

As reported in Table 4, it is evident that there is a negative relationship between female

CEOs and cash holdings. We tested various specifications to control for the year, industry and firm fixed effect, and standard errors clustered at the firm level. The final setting in column (6) with three ways fixed effect is the most inclusive model to be referred to. The coefficient for $D_{FemaleCEO}$ is consistently negative for all the settings, and they are all statistically significant at the 1% level, except for Model (5), which is only significant at the 5% level. The coefficients are stable, ranging from -0.0201 to -0.0219. This suggests that having a female CEO is associated with lower cash holdings, and this effect is robust across different model specifications. In the meantime, all the control variables are also significant at the 1% level, where for Models (2) to (6), both ROA and MKTB recorded a positive effect on cash holdings, with relatively stable coefficient values. On the other hand, both SIZE and LEVERAGE have a negative effect on cash holdings.

Table 2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
CASH	8,873	0.1061	0.1087	0.0011	0.5386
SIZE	8,873	5.8555	1.6169	2.4899	10.4756
ROA	8,873	0.0463	0.0979	-0.3329	0.3608
LEVERAGE	8,873	0.3805	0.1998	0.0291	0.9056
MKTB	8,878	1.2338	1.5420	0	10.6335
BINDEPENDENT	6,525	0.4709	0.1272	0.1667	1
BSIZE	6,525	7.8886	2.1355	3.0000	21.0000
BDIVERSITY	6,525	0.0957	0.1140	0	0.5455
$D_{Founder}$	5,747	0.4606	0.4985	0	1
$D_{Duality}$	5,747	0.1147	0.3186	0	1
TenureCEO	5,692	0.5156	0.4998	0	1
OwnershipCEO	3,301	0.4986	0.5001	0	1
$D_{Multiple}$	5,747	0.1914	0.3934	0	1
$D_{Postgraduate}$	9,702	0.1277	0.3338	0	1

Our results support the notion that firms with female CEOs generally do not hoard higher level of cash, and the reduction in cash holdings does not obstruct firm performance (Doan and Iskandar-Datta, 2020). Specifically, our results provide evidence that female CEOs negatively and significantly correlate with cash holdings. The view that cash holdings are reduced also indicates that female CEOs are taking greater risks, which this finding supports the study by Faraga and Mallinb (2016). Thus, H1 is supported.

Table 5 exhibits the regression result, including the effects of the board of governance. We control all three types of fixed effects for all the estimations here. The three aspects of corporate governance are: BINDEP representing board independence, BSIZE representing board size, and BFEMALE representing gender diversity of the board. We estimated the augmented model from the baseline setting by adding the governance variable one at a time and reported the result in columns (1) to (3). The results show that all four firm-level variables are statistically significant at a 1% level across all models with the same similar coefficients sign and value as in the baseline model in Table 4.

The focus of Table 5 is on the interaction term between female CEOs and the governance variables. For column (1), board independence is reported to have a positive and statistically significant effect at a 5% level, with a coefficient of 0.1144, suggesting that a higher proportion of independent directors mitigate the negative impact of having a female CEO on cash holdings. Board size is not statistically significant in Model (2), but in Model (3), board

gender diversity has a negative coefficient (-0.1482), and it is statistically significant at a 5% level. Therefore, the result confirms our hypothesis 2, where the board of governance influence the relationship between female CEOs and cash holdings. Specifically, independent directors diminish the impact, whereas board gender diversity enhances the effect of female CEOs on cash holdings.

Table 6 presents the regression result of the interaction effects of CEO power in six different dimensions. TenureCEO is the number of years the CEO has served. OwnershipCEO is the percentage of shareholdings by the CEO. $D_{Multiple}$ is a dummy variable where 1 indicates multiple directorships of the CEO, and 0 otherwise. $D_{Postgraduate}$ is a dummy variable where 1 represents CEOs with postgraduate qualifications, and 0 otherwise.

In Model (1) of Table 6, $D_{Founder}$ has a negative and statistically significant (at 5% level) effect on cash holdings with a negative coefficient of -0.0120. This suggests that companies whose founder is also the CEO have lower cash holdings. However, the effect is insignificant when the CEO is a female. In Model (2), the coefficient for $D_{Duality}$ is positive and statistically significant at a 1% level with a positive coefficient of 0.0191. This suggests that companies with combined CEO and chairperson roles tend to have higher cash holdings. However, the significant effect of both variables disappears when the CEO is a female. The same also happened for CEOs with multiple directorships.

For the interaction variables, only in Model (5) and Model (6), the coefficient for $D_{FemaleCEO}xD_{Multiple}$ and $D_{FemaleCEO}xD_{Postgraduate}$ are positive and statistically significant at 1% level, suggesting that companies where the female CEO holds multiple directorships and has a postgraduate (Master or/and PhD) have higher cash holdings. Therefore, although our result still supports H3, the effect is not observed in all power dimensions, where only two of the six power dimensions influence the effect of female CEOs on cash holdings. This shows that female CEOs with extensive industry experience, networking, and high education levels, i.e. social capital and knowledge capital, respectively, tend to have higher cash holdings than their peers.

Table 3: Correlation

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. CASH	1													
2. SIZE	-0.035	1												
3. ROA	0.319	0.073	1											
4. LEVERAGE	-0.356	0.306	-0.203	1										
5. MKTB	0.212	0.018	0.409	-0.053	1									
6. BINDEPENDENT	-0.023	-0.010	-0.079	-0.010	0.001	1								
7. BSIZE	0.071	0.295	0.073	0.122	0.105	-0.261	1							
8. BDIVERSITY	0.021	-0.040	0.051	-0.124	0.017	-0.064	-0.039	1						
9. $D_{Founder}$	-0.026	0.024	0.072	-0.048	-0.039	-0.195	0.091	0.135	1					
10. $D_{Duality}$	0.017	-0.113	-0.018	-0.088	0.008	-0.040	-0.081	0.070	0.122	1				
11. TenureCEO	0.059	0.165	0.071	-0.050	0.010	-0.047	-0.037	0.071	0.196	0.066	1			
12. OwnershipCEO	-0.113	-0.230	-0.071	0.040	-0.017	0.085	-0.221	0.005	-0.017	0.061	0.017	1		
13. $D_{Multiple}$	-0.038	0.325	-0.066	0.077	0.019	0.120	0.017	-0.128	-0.042	-0.004	0.028	-0.096	1	
14. $D_{Postgraduate}$	-0.003	0.121	0.018	0.029	0.039	0.083	0.000	0.033	-0.045	-0.025	-0.004	-0.090	0.079	1

Table 4: Baseline result

	(1)	(2)	(3)	(4)	(5)	(6)
$D_{FemaleCEO}$	-0.0173**	-0.0208***	-0.0208***	-0.0201***	-0.0201**	-0.0219***
	(0.0250)	(0.0049)	(0.0048)	(0.0065)	(0.0379)	(0.0071)
SIZE		-0.0032**	-0.0042**	-0.0036**	-0.0036	-0.0096***
		(0.0492)	(0.0152)	(0.0429)	(0.2150)	(0.0004)
ROA		0.1333***	0.1377***	0.1379***	0.1379***	0.1244***
		(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
LEVERAGE		-0.1337***	-0.1316***	-0.1322***	-0.1322***	-0.1117***
		(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
MKTB		0.0066***	0.0065***	0.0063***	0.0063***	0.0051***
		(0.0000)	(0.0000)	(0.0000)	(0.0005)	(0.0000)
Constant	0.1021***	0.1582***	0.1664***	0.1670***	0.1670***	0.1949***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Year Effect	no	no	yes	yes	yes	yes
Industry Effect	no	no	no	yes	yes	yes
Firm Effect	no	no	no	no	no	yes

Cluster Firm	no	no	no	no	yes	no
N	5689	5689	5689	5689	5689	5689
R^2	0.0001	0.1722	0.1706	0.1877	0.1877	0.1452

*Notes: Table 4 presents the result for Model 1. The dependent variables are cash holding in logarithm form, the main independent variable is female CEO ($D_{FemaleCEO}$). The control variables are firm size (SIZE), firm performance (ROA), firm leverage (LEVERAGE), and market-to-book-value (MKTB); The parentheses report p-values of ***, * *, and *, which indicate 1%, 5%, and 10% levels of significance, respectively. The dependent variable and all of the control variables are winsorized at the 1st percentile.*

Table 5: The role of board governance

	(1)	(2)	(3)
$D_{FemaleCEO}$	-0.0791***	0.0005	0.0011
	(0.0083)	(0.9824)	(0.9418)
SIZE	-0.0095***	-0.0098***	-0.0098***
	(0.0005)	(0.0004)	(0.0003)
ROA	0.1242***	0.1251***	0.1242***
	(0.0000)	(0.0000)	(0.0000)
LEVERAGE	-0.1116***	-0.1117***	-0.1119***
	(0.0000)	(0.0000)	(0.0000)
MKTB	0.0051***	0.0051***	0.0052***
	(0.0000)	(0.0000)	(0.0000)
BINDEP	0.0092		
	(0.4725)		
$D_{FemaleCEO}$ x BINDEP	0.1144**		
	(0.0467)		
BSIZE		0.0004	
		(0.6105)	
$D_{FemaleCEO}$ x BSIZE		-0.0026	
		(0.3112)	
BFEMALE			0.0266
			(0.1205)
$D_{FemaleCEO}$ x BFEMALE			-0.1482**
			(0.0490)
Constant	0.1900***	0.1926***	0.1934***
	(0.0000)	(0.0000)	(0.0000)
Year Effect	yes	yes	yes

Industry Effect	yes	yes	yes
Firm Effect	yes	yes	yes
N	5689	5689	5689
R^2	0.1439	0.1472	0.1434

Table 6: The role of CEO power

	(1)	(2)	(3)	(4)	(5)	(6)
$D_{FemaleCEO}$	-0.0223**	-0.0208**	-0.0221**	0.0007	-0.0299***	-0.0359***
	(0.0367)	(0.0115)	(0.0123)	(0.9588)	(0.0004)	(0.0001)
SIZE	-0.0100***	-0.0097***	-0.0089***	-0.0060	-0.0094***	-0.0097***
	(0.0003)	(0.0004)	(0.0009)	(0.1321)	(0.0005)	(0.0004)
ROA	0.1269***	0.1251***	0.1191***	0.1021***	0.1213***	0.1244***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
LEVERAGE	-0.1106***	-0.1120***	-0.1152***	-0.1080***	-0.1121***	-0.1117***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
MKTB	0.0050***	0.0051***	0.0064***	0.0053***	0.0054***	0.0052***
	(0.0000)	(0.0000)	(0.0000)	(0.0004)	(0.0000)	(0.0000)
$D_{Founder}$	-0.0120**					
	(0.0118)					
$D_{FemaleCEO}$ x $D_{Founder}$	0.0030					
	(0.8563)					
$D_{Duality}$		0.0091*				
		(0.0781)				
$D_{FemaleCEO}$ x $D_{Duality}$		-0.0091				
		(0.8215)				
TenureCEO			0.0020			
			(0.4757)			
$D_{FemaleCEO}$ xTenureCEO			0.0013			
			(0.9114)			
OwnershipCEO				-0.0188		
				(0.1646)		
$D_{FemaleCEO}$ x OwnershipCEO				-0.0310		
				(0.2267)		
$D_{Multiple}$					-0.0168***	

					(0.0001)	
$D_{FemaleCEO}$ x $D_{Multiple}$					0.0809***	
					(0.0025)	
$D_{Postgraduate}$						-0.0030
						(0.4843)
$D_{FemaleCEO}$ x $D_{Postgraduate}$						0.0576***
						(0.0031)
Constant	0.2020***	0.1947***	0.1902***	0.1809***	0.1973***	0.1955***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Year Effect	yes	yes	yes	yes	yes	yes
Industry Effect	yes	yes	yes	yes	yes	yes
Firm Effect	yes	yes	yes	yes	yes	yes
N	5689	5689	5634	3059	5689	5689
R^2	0.1488	0.1442	0.1489	0.1825	0.1404	0.1492

*Notes: Table 6 presents the result for Model 1. The dependent variables are cash holding in logarithm form; the main independent variable is the female CEO ($D_{FemaleCEO}$). The control variables are firm size (SIZE), firm performance (ROA), firm leverage (LEVERAGE), and market-to-book-value (MKTB); The parentheses report p-values of ***, * *, and *, which indicate 1%, 5%, and 10% levels of significance, respectively. The dependent variable and all of the control variables are winsorised at the 1st percentile.*

4. Conclusion and Recommendations

This study investigates the impact of female CEOs on cash holdings, examining the moderating effects of corporate governance factors (e.g., board independence, board size, and percentage of female board members) and CEO power characteristics (e.g., founder status, duality, tenure, ownership, multiple directorships, and education). Using a dataset of 246 publicly listed firms on Bursa Malaysia from 2009 to 2019, we employ panel regression analysis to test our hypotheses. The literature offers two main perspectives on female corporate leadership and cash holdings, and our findings support a negative relationship between female CEOs and cash holdings; firms with female CEOs tend to hold less cash than those led by male CEOs. We further document that board governance moderates this relationship, with board independence mitigating, and higher gender diversity amplifying, the effect.

Additionally, two CEO power dimensions—multiple directorships and education level—also moderate female CEOs' conservative cash-holding behavior. This study recommends enhancing corporate governance practices, particularly board independence, to balance the tendency of female CEOs to hold less cash by ensuring more rigorous oversight. For shareholders and directors focused on financial management, it is essential to recognize the value of experience and advanced education among female CEO candidates. Female CEOs with extensive experience and postgraduate qualifications tend to maintain higher cash reserves, which is crucial for risk management and liquidity. Supported by Upper Echelons Theory and Behavioral Finance Theory, these findings indicate that education and experience as CEO characteristics influence strategic decisions and cognitive biases (Gurdgiev and Ni, 2023; Huang et al., 2024). These attributes optimize capital allocation and enhance strategic foresight, highlighting the moderating effects of education and experience.

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