“Corporate governance and cash holdings: Focusing on a corporate governance report in Korea”

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CORPORATE GOVERNANCE AND CASH HOLDINGS: FOCUSING ON A CORPORATE GOVERNANCE REPORT IN KOREA

Abstract

This study examines the effect of corporate governance on a company's cash holdings, focusing on a firm's compliance levels with core corporate governance indicators as outlined in the corporate governance report. Utilizing a random effect generalized least squares (GLS) regression model, this study evaluates 812 firm-year observations from Korean publicly traded companies covering the period 2018 to 2021. The results indicate that companies with robust governance structures generally maintain lower levels of cash holdings (coefficient = –0.0263, p-value = 0.044), corroborating the flexibility hypothesis. Moreover, higher compliance levels with governance matters concerning shareholder protection (coefficient = –0.0388, p-value = 0.090) and board of directors (coefficient = –0.0512, p-value = 0.052) are associated with reduced cash holdings. Further analysis, accounting for a firm's organizational capital, underscores that the inverse relationship between corporate governance and cash holdings is more pronounced in organizations with lesser organizational capital (coefficient = –0.0548, p-value < 0.01). This study contributes empirical evidence showing that strict compliance with core corporate governance indicators, indicative of strong corporate governance, substantially affects a firm's cash management. Additionally, this study offers valuable insights for regulatory authorities and investors and enhances the existing body of knowledge on the interplay between corporate governance and cash holdings.

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INTRODUCTION

In Korea, the aftermath of the financial crisis witnessed a proactive push to elevate corporate governance standards. As a part of these efforts, the Financial Services Commission (FSC) updated its corporate governance guidelines in 2018. These revised guidelines require entities with total assets exceeding two trillion South Korean Won (approximately 1.6 billion US Dollars) to compile and publicly disclose a corporate governance report. These reports comprehensively outline the entity's adherence to the three core pillars of corporate governance: shareholder protection, board of directors, and the audit committee, which are further segmented into fifteen key indices. The assessment of compliance with these indices is expressed in a binary format, with 'O' denoting compliance and 'X' indicating noncompliance (Appendix A). This approach is designed to enhance the transparency and accountability of corporate governance practices in Korea (Lee et al., 2022).

Corporate governance, which refers to the systems of stewardship and control over an organization's resources aimed at achieving sustainable long-term value for shareholders and stakeholders, has garnered considerable attention in scholarly research due to its significant im-

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pact on firms (Paniagua et al., 2018). This field of study attracts researchers who seek to understand how various facets of corporate governance affect both financial and non-financial organizational outcomes (Ammann et al., 2011; Jo & Harjoto, 2011; Mohamed & Elewa, 2016; Khan, 2019; Kyere & Ausloos, 2020). Among different elements, cash and cash equivalents are particularly noteworthy as they form a crucial component of an entity's assets. There has been a global trend of increasing cash holdings over the past two decades, underscoring the critical nature of cash management (Amess et al., 2015). Given the pivotal roles of both corporate governance and cash holdings, numerous studies have delved into exploring their interrelationship (Jensen & Meckling, 1976; Jensen, 1986; Chen et al., 2020).

1. LITERATURE REVIEW AND HYPOTHESES

Existing literature reveals divergent perspectives concerning the relationship between corporate governance and cash holdings. On the one hand, some studies suggest that managers might accumulate cash as a strategy to mitigate firm risk, leading to greater discretionary use of funds at the shareholders' expense. This trend is often observed in poorly managed firms. On the other hand, there is a viewpoint that managers, driven by ambitions of firm expansion, may channel cash into various investments, thereby reducing cash holdings. These conflicting interpretations regarding the link between corporate governance and cash holdings indicate that the exact nature of this relationship remains an open empirical question.

Scholars studying the nexus between corporate governance and cash holdings, particularly through the lens of agency theory, frequently posit that a company's policy on cash holdings is fundamentally a manifestation of managerial preferences, especially in scenarios where managers' actions are not aligned with the interests of the shareholders (Akhtar et al., 2018; Marwick et al., 2020). In this context, cash is perceived as a pool of free cash flow for the organization, granting management the latitude to undertake investments that might otherwise not secure capital market financing (Opler et al., 1999). This discretion, however, can lead to the misappropriation and mismanagement of funds by managers for personal benefit, potentially resulting in the erosion of corporate value. Nonetheless, the establishment and maintenance of a stringent corporate governance framework can serve as a safeguard against such risks, preserving organizational value (Dittmar & Marht-Smith, 2007; Amess et al., 2015).

There are three key hypotheses within the agency theory related to corporate cash holdings: flexibility, spending, and shareholder power. The flexibility hypothesis suggests that when managers face a choice between overinvestment and future flexibility, they often opt for the latter. In such cases, managers conserve cash rather than investing all available resources, leading to larger cash reserves under weaker shareholder control. The spending hypothesis posits that managers with excess cash holdings are inclined to spend it rapidly, prioritizing immediate expenditures over future investment opportunities. Conversely, the shareholder power hypothesis emphasizes that effective shareholder control over managerial decisions can lead to cash stockpiling, aimed at avoiding underinvestment and reliance on costly external funding (Harford et al., 2008). To summarize, the flexibility hypothesis associates weak corporate governance with larger cash reserves, whereas the spending hypothesis links poor managerial control with reduced cash holdings within a firm. The shareholder power hypothesis, meanwhile, suggests a negative relationship between agency problems and corporate cash holdings, proposing that stronger corporate governance is linked to larger cash reserves (Kusnadi, 2011).

The body of research examining the influence of varied corporate management practices on a firm's cash reserves offers mixed evidence in support of the theories discussed earlier (Weidemann, 2018). A study by Park and Yeon (2009) investigates the impact of corporate governance mechanisms on cash holdings in Korean listed firms over the period 2002 to 2009. Their research utilizes total governance scores derived from the Korea Corporate Governance Service (KCGS) guidelines, covering aspects such as shareholder protection, board of directors, transparency, auditing organization, and earnings distribution. This study concludes that firms with strong corporate governance practices, particularly those emphasizing robust shareholder protection, are likely to maintain lower levels of cash holdings. This finding significantly bolsters the agency theory by highlighting that the extent of agency conflicts within firms is a crucial determinant of their cash holdings.

Prior studies using global data also show results supporting the agency theory. For example, Kusnadi's (2011) study, encompassing listed firms in Singapore and Malaysia from 2000 to 2005, examines a range of corporate governance mechanisms. These include factors such as CEO representation, board size, independent directors, insider ownership, pyramidal ownership, and family ownership. The study identifies an inverse relationship between corporate governance strength and cash holdings, observing that firms with weaker governance mechanisms are more likely to accumulate higher levels of cash compared to those with stronger governance structures. These findings endorse the flexibility hypothesis of the agency theory, indicating that heightened agency conflicts between managers and shareholders may afford managers more leeway in maintaining excess cash reserves. In a similar vein, Chen et al. (2020) undertook a comprehensive study across 41 countries from 1993 to 2012, assessing the effects of board reforms on corporate governance. By representing corporate governance through the lens of board reforms, the study discerns a significant decrease in cash holdings subsequent to these reforms. This suggests that enhancing the oversight capabilities of the board contributes to the fortification of internal corporate governance mechanisms, thereby restricting managerial discretion in cash utilization.

While the majority of previous studies suggest that robust corporate governance leads to reduced corporate cash holdings, other research indicates a positive relationship between corporate governance and cash holdings. For instance, Dittmar and Mahrt-Smith (2007) analyze publicly listed U.S. firms from 1990 to 2003. Their findings reveal that firms with weaker corporate governance are more prone to rapidly expend excess cash reserves on less profitable investments compared to firms with stronger governance mechanisms. Such poorly governed firms tend to squander excess cash resources, ultimately diminishing firm value. Similarly, Harford et al. (2008) examine U.S. firms from 1993 to 2004 and observe that firms with weaker governance structures maintain lower cash reserves. These firms' managers are inclined to quickly spend cash on related acquisitions and capital expenditures instead of retaining higher cash holdings. Therefore, both studies lend support to the spending hypothesis.

In summary, while past research presents mixed outcomes concerning the link between corporate governance and cash holdings, a predominant portion of these studies endorses the flexibility hypothesis. This hypothesis posits that robust corporate governance correlates with reduced corporate cash holdings. Building on this premise, this study anticipates a negative association between the levels of compliance with the fifteen (15) core governance indicators and corporate cash holdings.

Among the fifteen key indices of corporate governance in Korea, four are specifically related to shareholder protection. These include the announcement of shareholder meetings, the use of electronic voting systems, the avoidance of peak seasons for shareholder meetings, and transparent communication regarding dividend policy and distribution plans. In an international context, Dittmar et al. (2003) explore the influence of corporate governance, particularly the standard of shareholder protection, on cash holdings across 45 countries. Their study probes into whether managerial decisions regarding cash holdings are driven predominantly by shareholder interests or are influenced by personal managerial objectives. The findings indicate that firms in countries with less stringent shareholder protection mechanisms tend to maintain higher levels of cash holdings; in fact, cash reserves in these firms are approximately double those in countries with more robust shareholder protection. The study also notes that firms are inclined to hold larger cash balances when they have easier access to funds.

Expanding upon the study by Dittmar et al. (2003), Al-Najjar (2013) delves into the various factors influencing corporate cash holdings in developing countries, employing an agency theory framework. This study specifically examines the role of legal protection for shareholders in determining cash

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holdings, hypothesizing that more robust legal protections would prompt management to minimize cash reserves. The findings reveal that firms in jurisdictions with less stringent shareholder protection tend to accumulate higher cash holdings. This trend suggests that, in contexts where agency costs are a consideration, managers operating under weaker shareholder protection are less likely to align with shareholders' expectations. Consequently, they may maintain higher cash reserves and potentially invest in projects with negative net present values. Drawing on these previous studies' insights into shareholder protection, the current study predicts that stronger shareholder protection correlates with lower levels of corporate cash holdings.

Six of the fifteen key indices of corporate governance in Korea pertain to the board of directors. Specifically, it discusses CEO succession plans and policies, internal control policies, CEO and chairmanship separation, cumulative voting system, director appointment policies, and term limits for outside directors. The board of directors bears the critical responsibility of acting in the shareholders' best interests and plays a pivotal role in overseeing senior executives to protect these interests. In situations where a company holds significant cash reserves and there are concerns about potential mismanagement by the executives, an effective board of directors is key to mitigating this risk. According to Amess et al. (2015), companies with substantial cash reserves and a competent board are unlikely to see performance decline, as the board's oversight prevents managers from engaging in self-serving utilization of cash.

Existing literature suggests that firms with strong board structures are inclined to hold less cash. Boubaker et al. (2015) investigate French listed firms from 2001 to 2007, focusing on the influence of the board of directors on cash holdings. The study emphasizes the board as a pivotal element of corporate governance and discovers that firms with boards proficient in mitigating agency problems – marked by the inclusion of independent directors and a clear separation between the roles of CEO and chairman – generally maintain lower levels of cash. Notably, firms where the CEO concurrently holds the chairman position tend to exhibit higher cash holdings. Conversely, companies with a greater proportion of independent directors on their boards demonstrate reduced cash reserves.

Echoing the results of prior research, Cambrea et al. (2021) also highlight the crucial role of the board of directors in improving the quality of corporate governance and reducing the likelihood of cash misuse for personal gain. In their examination of Italian industrial firms from 2003 to 2013, they assess how the characteristics of the board of directors influence cash holdings. The study reveals that firms with a higher proportion of independent directors generally exhibit lower cash holdings. This outcome is attributed to independent directors' reduced conflicts of interest with management, enabling them to protect shareholders' interests and provide stringent oversight more effectively. In contrast, the presence of CEO duality – where the CEO simultaneously serves as the board chairman – and larger board sizes are linked to increased cash holdings. Both CEO duality and larger boards are found to impair effective management monitoring, often leading to excessive cash accumulation, overinvestment, and the diversion of funds for self-serving objectives. In sum, previous works related to the standards of board of directors imply that firms with higher compliance levels with core governance indices related to board of directors tend hold less cash.

Five of the fifteen key indices of corporate governance in Korea pertain to the audit committee. Specifically, it discusses an annual education program for committee members, establishment of an independent internal audit team, accounting and finance expertise of the committee, regular meetings with external auditors, and access to material information about the firm. Reflecting on these aspects, Chen et al. (2020) investigate the influence of various board reform characteristics, including the audit committee, on cash holdings. Their study concludes that board reforms, particularly the formation of independent audit committees and the assurance of auditor independence, are associated with reduced cash holdings. This trend is consistent with other board reform features like board independence and the separation of CEO and chairmanship roles, which are similarly associated with lower cash holdings. Furthermore, Choi et al. (2020) examine the role of audit committees in Korean firms from 2000 to 2015, with a specific focus on the impact of the committee members' supervisory and accounting expertise on the value of cash holdings. Their findings reveal that the involvement of supervisory experts in audit committees adversely impacts the value of cash holdings. This suggests that such experts might lack the necessary accounting and financial acumen, resulting in less effective oversight of managerial decisions regarding cash management and usage.

The cumulative evidence from prior research suggests a consistent trend: firms with robust audit committees typically exhibit lower levels of cash holdings. Drawing upon these results and the arguments presented in the existing literature, this study formulates hypotheses that posit a negative association between compliance with core governance indices and corporate cash holdings. In essence, higher adherence to these governance indices inversely relates to the amount of cash held by a corporation. This implies that stronger corporate governance mechanisms are associated with reduced corporate cash holdings.

H1: There is a negative association between the levels of compliance with the 15 core governance indices and corporate cash holdings.

H2a: There is a negative association between a firm's compliance level with the core governance indices pertaining to shareholder protection and its corporate cash holdings.

H2b: There is a negative association between a firm's compliance level with the core governance indices related to the board of directors and its corporate cash holdings.

H2c: There is a negative association between a firm's compliance level with the core governance indices related to the audit committee and its corporate cash holdings.

2. METHODS

To test the hypotheses, this study adopts a model proposed by Chen et al. (2020), which is outlined as follows:

$$\begin{aligned}&\ln(Cash)=\alpha+\\&\beta_1 CGScore(SPScore, BDScore, ACScore)+\\&\beta_2 Size+\beta_3 Lev+\beta_4 NetWC+\beta_5 CF+\\&\beta_6 SG+\beta_7 CapEx+\beta_8 Div+\beta_9 CFVol+\\&\beta_{10} R\&D+Industry_{dum}+Year_{dum}+\varepsilon.\end{aligned} \tag{1}$$

In the proposed model, the dependent variable, Cash Holdings (*Cash*), is operationalized as the natural logarithm of the ratio of cash and short-term investments to net assets. The primary independent variable of interest in this study is the Corporate Governance Score (*CGScore*). This score quantitatively reflects a firm's level of compliance with the 15 core governance indices, thereby serving as a proxy for the quality of the firm's corporate governance. A higher *CGScore* signifies a stronger corporate governance structure. *SPScore, BDScore,* and *ACScore* are variables that specifically measure the firm's level of compliance with the fifteen core governance indices, segmented into categories related to shareholder protection, board of directors, and the audit committee, respectively.

In line with established research in this field (Harford et al., 2008; Chen et al., 2020), this study integrates a range of control variables to account for various firm characteristics known to significantly affect corporate cash holdings. These control variables include: the size of a firm (*Size*), leverage ratio (*Lev*), net working capital (*NetWC*), cash flow (*CF*), sales growth (*SG*), capital expenditure (*CapEx*), dividend payout (*Div*), cash flow volatility (*CFVol*), and research and development expenditure (*R&D*) Each of these variables is defined in detail in Appendix B. Additionally, the study accounts for industry-specific variations and temporal changes by including dummies for industry categorization and year.

This study utilizes data meticulously collected on firms' compliance levels with the fifteen core governance indicators, as mandated by the Financial Services Commission (FSC) of Korea, covering the period 2018 to 2021. The requirement for firms to disclose their corporate governance reports, including compliance status with these core governance indicators, became mandatory and publicly accessible starting in 2019. This mandate applies to disclosures concerning

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the 2018 fiscal year onwards. Data regarding the firms' compliance with these indicators was extracted from their annual corporate governance reports. For illustrative purposes, Appendix C includes a sample disclosure from a firm's corporate governance report, detailing its compliance status with the core governance indicators.

The financial data for this study were sourced from the TS2000 and FnGuide databases, which are equivalent to Compustat in the United States. To ensure focus and consistency in the analysis, the study excludes financial institutions, given their distinct industry characteristics. Additionally, the sample is limited to firms with fiscal year-ends coinciding with the calendar year, specifically December, to maintain homogeneity. The criteria also involved excluding firms lacking sufficient data on dependent and independent variables and those missing necessary information for the control variables. After applying these selection criteria, the study arrived at a final sample size comprising 812 firm-year observations.

Table 1. Sample selection

Panel A. Distribution by industry		
By industry	**Observations**	**Firms**
Automobiles & Components	66	24
Capital Goods	155	53
Capital Markets	7	4
Commercial Services and Supplies	16	5
Consumer Durables & Apparel	37	19
Consumer Services	8	5
Display	4	1
Diversified Financial Services	2	2
Energy	36	12
Food, Beverage, and Tobacco	62	26
Hardware	29	11
Healthcare Equipment Services	1	1
Household & Personal Products	18	6
Materials	157	59
Media	17	9
Pharmaceuticals & Biotechnology	33	14
Real Estate	3	3
Retailing	42	13
Semiconductors	5	2
Software	32	11
Telecommunication Services	12	3
Transportation	48	16
Utility	22	10
Total	812	309

Panel B. Distribution by year	
By year	**Observations**
2018	158
2019	174
2020	181
2021	299
Total	812

Panel C. Sample selection process	
Number of Korean listed firms with available index scores for core corporate governance compliance	843
Less: Samples with unavailable calendar year financial data	(10)
Less: Samples with unavailable sales information from previous year	(9)
Less: Samples with unavailable prior two years financial information to calculate cash flow volatility	(12)
Final sample, firm-years	812

3. RESULTS

Table 2 in the study delineates the descriptive statistics for the variables used in the analysis. To address the potential skewing effects of outliers, the study employs a winsorization technique on both the top and bottom 1% of each continuous variable. Regarding the dependent variable, *Cash*, the mean and median values are 0.093 (–2.705) and 0.073 (–2.613), respectively. This indicates the general level of cash holdings relative to net assets among the sample firms. Turning to the independent variables, the mean value of the Corporate Governance Score (*CGScore*) stands at 8.946. This suggests that, on average, firms in the sample adhere to about 9 out of the 15 core governance indices. The Shareholder Protection Score (*SPScore*), which evaluates compliance with 4 specific indices related to shareholder protection, has a mean value of 1.833. Additionally, 6 indices are dedicated to assessing the board of directors (*BDScore*), and 5 indices pertain to the audit committee (*ACScore*). The mean values for *BDScore* and *ACScore* are 3.187 and 3.926, respectively. All these figures imply that, on average, the firms in the study comply with approximately 2 indices related to shareholder protection, 3 indices related to the board of directors, and 4 indices concerning the audit committee.

Table 3 in the study displays the Pearson correlation coefficients, offering an initial glimpse into the relationships between the study's variables. It reveals an insignificant negative cor-

Table 2. Descriptive statistics

Variable	N	Mean	SD	Min	25%	Median	75%	Max
Cash	812	0.093	0.074	0.004	0.042	0.073	0.120	0.396
ln(Cash)	812	–2.705	0.876	–5.462	–3.178	–2.613	–2.123	–0.927
CGScore	812	8.946	2.329	1.000	7.000	9.000	11.000	15.000
SPScore	812	1.833	1.160	0.000	1.000	2.000	3.000	4.000
BDScore	812	3.187	1.181	0.000	2.000	3.000	4.000	6.000
ACScore	812	3.926	0.948	0.000	3.000	4.000	5.000	5.000
Size	812	29.253	1.228	26.410	28.486	28.977	29.917	32.942
Lev	812	0.523	0.184	0.123	0.394	0.543	0.652	0.915
NetWC	812	0.017	0.156	–0.315	–0.089	0.009	0.122	0.447
CF	812	0.053	0.062	–0.132	0.020	0.045	0.081	0.269
SG	812	0.115	0.331	–0.424	–0.024	0.056	0.169	2.398
CapEx	812	0.038	0.037	–0.006	0.014	0.028	0.049	0.204
Div	812	0.885	0.319	0	1	1	1	1
CFVol	812	0.025	0.031	0.001	0.009	0.016	0.029	0.209
R&D	812	0.008	0.016	0.000	0.000	0.001	0.008	0.091

Note: (1) All continuous variables are winsorized at 1% and 99% levels. (2) Variable definitions are presented in Appendix B.

relation between the dependent variable, *Cash*, and two independent variables: *CGScore* and the *ACScore*. Additionally, an insignificant positive correlation is observed between *Cash* and the *SPScore*. Most notably, there is a significant negative correlation between *Cash* and the *BDScore*, which measures compliance with core governance indices related to the board of directors. This finding preliminarily suggests a potential inverse relationship between strong

Table 3. Pearson correlation (N = 812)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) ln(Cash)	1.000													
(2) CGScore	–0.039	1.000												
	(0.27)													
(3) SPScore	0.053	0.677	1.000											
	(0.13)	(<0.01)												
(4) BDScore	–0.098	0.747	0.183	1.000										
	(<0.01)	(<0.01)	(<0.01)											
(5) ACScore	–0.037	0.698	0.212	0.365	1.000									
	(0.29)	(<0.01)	(<0.01)	(<0.01)										
(6) Size	–0.081	0.405	0.213	0.374	0.268	1.000								
	(0.02)	(<0.01)	(<0.01)	(<0.01)	(<0.01)									
(7) Lev	–0.132	–0.014	–0.065	0.055	–0.022	0.073	1.000							
	(<0.01)	(0.70)	(0.06)	(0.12)	(0.53)	(0.04)								
(8) NetWC	0.042	0.038	0.080	–0.035	0.038	–0.044	–0.612	1.000						
	(0.23)	(0.29)	(0.02)	(0.32)	(0.28)	(0.21)	(<0.01)							
(9) CF	0.147	0.080	0.121	0.051	–0.015	–0.024	–0.424	0.304	1.000					
	(<0.01)	(0.02)	(<0.01)	(0.15)	(0.66)	(0.50)	(<0.01)	(<0.01)						
(10) SG	–0.044	–0.025	0.052	–0.059	–0.051	–0.067	–0.075	0.126	0.184	1.000				
	(0.21)	(0.48)	(0.14)	(0.09)	(0.15)	(0.06)	(0.03)	(<0.01)	(<0.01)					
(11) CapEx	–0.058	0.095	–0.008	0.149	0.057	0.130	–0.065	–0.038	0.172	0.026	1.000			
	(0.10)	(<0.01)	(0.83)	(<0.01)	(0.10)	(<0.01)	(0.06)	(0.28)	(<0.01)	(0.47)				
(12)Div	0.004	0.038	0.108	–0.015	–0.020	0.100	–0.160	0.113	0.169	–0.061	0.079	1.000		
	(0.91)	(0.28)	(<0.01)	(0.67)	(0.57)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(0.08)	(0.02)			
(13) CFVol	0.074	0.000	–0.055	0.031	0.029	–0.081	0.029	–0.050	0.082	0.187	0.015	–0.191	1.000	
	(0.04)	(0.99)	(0.12)	(0.37)	(0.41)	(0.02)	(0.42)	(0.15)	(0.02)	(<0.01)	(0.68)	(<0.01)		
(14) RD	0.206	0.082	0.102	0.062	–0.002	0.055	–0.173	0.175	0.353	–0.037	0.245	0.032	–0.001	1.000
	(<0.01)	(0.02)	(<0.01)	(0.08)	(0.95)	(0.12)	(<0.01)	(<0.01)	(<0.01)	(0.29)	(<0.01)	(0.36)	(0.97)	

Note: The numbers in parentheses indicate the p-value.

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board governance and cash holdings. However, it is imperative to note that these correlation coefficients, while indicative, are not conclusive. They do not establish causation or fully capture the complexity of the relationships between corporate governance compliance and cash holdings. Consequently, Table 4 presents the regression results, incorporating all the variables from the analytical model. This will provide a more comprehensive understanding of the dynamics between a firm's compliance levels with core governance indices and its cash holdings.

Table 4 showcases the primary regression results pivotal for testing the first hypothesis of this study. A notable outcome is the coefficient of the *CGScore*, which is recorded at –0.0263. This coefficient is statistically significant at the 5% level and exhibits a negative direction. This significant negative coefficient suggests that firms with more robust governance structures are inclined to hold less cash, thereby lending support to the flexibility hypothesis. This hypothesis posits that stronger corporate governance can mitigate agency problems, reducing the need for large cash holdings as a buffer. Furthermore, the regression analysis reveals significant associations between a firm's cash holdings and several other variables, such as the *Lev*, *NetWC*, *CapEx*, and *R&D*. These associations are consistent with the findings from earlier studies, including those by Park and Yeon (2009), Kusnadi (2011), and Chen et al. (2020), which also support the flexibility hypothesis. These results, therefore, reinforce the notion that the management of cash holdings in firms is significantly linked to the effectiveness and strength of their corporate governance structures.

Table 4. Total corporate governance score panel regression results on cash holdings

	Dependent Variable: Cash Holdings
Intercept	–2.1666*
	(0.066)
CGScore	–0.0263**
	(0.044)
Size	–0.0018
	(0.965)
Lev	–1.2112***
	(<0.01)
NetWC	–1.5881***
	(<0.01)
CF	0.8081
	(0.104)
SG	–0.0749
	(0.206)
CapEx	–2.3397***
	(<0.01)
Div	–0.0469
	(0.635)
CFVol	–0.3513
	(0.758)
R&D	9.0810**
	(0.019)
Industry and year dummies	Included
# Obs	812
Adj. R2	0.2358

Notes: (1) The numbers in parentheses indicate the p-values. (2) ***, **, and * represent significance at the 1, 5, and 10 percent levels, respectively. (3) All continuous variables are winsorized at 1% and 99% levels. (4) Variable definitions are presented in Appendix B.

Table 5 presents the regression results pertinent to hypotheses *2a*, *2b*, and *2c*, examining the specific aspects of corporate governance and their relationship with cash holdings. In Column A, which focuses on the *SPScore*, the analysis reveals a negative relationship between *SPScore* and *Cash*. This finding indicates that heightened compliance with the core governance indices related to shareholder protection is significantly associated with lower cash holdings in firms. This supports the hypothesis that robust shareholder protection mechanisms influence a firm's financial decisions regarding cash management. Column B of Table 5 examines the *BDScore* and its relationship with *Cash*. The results demonstrate a similar negative association, suggesting that higher standards in board governance correlate with lower levels of cash holdings. This aligns with the understanding that effective board governance can play a critical role in cash management and the overall financial strategy of firms. However, column C reveals no significant association between *ACScore* and *Cash*. This lack of significant association might point to the nuanced role of audit committees in corporate governance, which may not directly influence cash management practices.

Table 5. Categorized corporate governance score panel regression results on cash holdings

	Dependent Variable: Cash Holdings		
	(A)	(B)	(C)
Intercept	–1.9657*	–2.0295*	–1.6963
	(0.089)	(0.082)	(0.147)
SPScore	–0.0388*		
	(0.090)		
BDScore		–0.0512*	
		(0.052)	
ACScore			–0.0121
			(0.685)
Size	–0.0154	–0.0082	–0.0246
	(0.697)	(0.838)	(0.547)
Lev	–1.2055***	–1.2315***	–1.2088***
	(<0.01)	(<0.01)	(<0.01)
NetWC	–1.5871***	–1.6178***	–1.5995***
	(<0.01)	(<0.01)	(<0.01)
CF	0.7763	0.7984	0.7583
	(0.121)	(0.109)	(0.134)
SG	–0.0695	–0.0794	–0.0768
	(0.253)	(0.172)	(0.201)
CapEx	–2.3428***	–2.3038***	–2.3273***
	(<0.01)	(<0.01)	(<0.01)
Div	–0.0447	–0.0520	–0.0552
	(0.652)	(0.604)	(0.580)
CFVol	–0.4005	–0.2321	–0.3455
	(0.728)	(0.839)	(0.764)
R&D	9.1378**	9.2512**	8.8101**
	(0.018)	(0.018)	(0.024)
Industry and year dummies	Included	Included	Included
# Obs	812	812	812
Adj. R^2	0.2336	0.2374	0.2353

Notes: (1) The numbers in parentheses indicate the p-values. (2) ***, **, and * represent significance at the 1, 5, and 10 percent levels, respectively. (3) All continuous variables are winsorized at 1% and 99% levels. (4) Variable definitions are presented in Appendix B.

Organizational capital is conceptualized as a composite of various elements, including business practices, processes, designs, and corporate culture. This capital serves as a foundational framework that allows firms to blend human expertise effectively and consistently with physical capital. Such integration is fundamental to creating efficient production systems. According to Marwick et al. (2020), this harmonious amalgamation of human skills and physical resources, facilitated by organizational capital, plays a pivotal role in shaping a firm's cash holding strategies. The underlying premise is that well-established organizational capital can lead to more effective management and utilization of resources, thereby influencing the need and capacity of firms to hold cash.

In the discourse on the relationship between organizational capital and corporate cash holdings, two contrasting perspectives emerge. The first, rooted in the precautionary motive for holding cash, posits a positive relationship between organizational capital and cash reserves. According to this view, as advocated by Eisfeldt and Papanikolaou (2013) and He (2018), firms with substantial organizational capital are inclined to accumulate greater cash reserves. This accumulation serves as a buffer to avoid the costs associated with external financing, aimed at either mitigating potential underinvestment risks or ensuring adequate liquidity during challenging times. On the flip side, an alternative viewpoint, as suggested by Lev and Radhakrishnan (2005) and Lev et al. (2009), argues that an increase in organizational capital may lead firms to maintain lower levels of cash. This perspective is grounded in the belief that enhanced organizational capital reduces financial frictions, thereby improving operational efficiency and profitability. From this angle, the presence of strong organizational capital is perceived as diminishing the necessity for large cash holdings, as the firm is better positioned to manage its resources and operations effectively.

To evaluate the influence of organizational capital on the nexus between corporate governance and cash holdings, this study bifurcated the sample based on varying levels of organizational capital and conducted subsequent analyses. The findings, as delineated in Table 6, demonstrate distinct outcomes for firms with differing levels of organizational capital. For firms categorized under low organizational capital, the regression coefficient for the *CGScore* is –0.0548, which is statistically significant at the 1% level. This indicates a strong negative relationship between *CGScore* and cash holdings in these firms. In stark contrast, in the subset of firms with high organizational capital, the coefficient for *CGScore* does not attain statistical significance. This divergence suggests that the negative association between *CGScore* and cash holdings is more pronounced in firms with lower levels of organizational capital. These results imply that the relationship between adherence to core gov-

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ernance indices and cash holdings is significantly modulated by the firm's organizational capital. In essence, organizational capital appears to be a critical factor that influences how corporate governance impacts a firm's financial strategies, particularly in terms of cash holding practices.

Table 6. Total corporate governance score panel regression results on cash holdings; upper and lower median organizational capital

	Dependent Variable: Cash Holdings	
	Upper Median	**Lower Median**
Intercept	–2.2797	–2.4841
	(0.143)	(0.173)
CGScore	0.0017	–0.0548***
	(0.925)	(<0.01)
Size	–0.0046	0.0043
	(0.937)	(0.939)
Lev	–1.0583**	–1.3452***
	(0.011)	(<0.01)
NetWC	–1.4682***	–1.9796***
	(<0.01)	(<0.01)
CF	0.8281	0.9904
	(0.195)	(0.239)
SG	–0.1128	–0.0318
	(0.128)	(0.717)
CapEx	–2.4423**	–2.3959**
	(0.043)	(0.025)
Div	–0.2758*	0.0546
	(0.070)	(0.640)
CFVol	0.1832	–1.9678
	(0.879)	(0.327)
R&D	4.2422	10.8470*
	(0.258)	(0.088)
Industry and year dummies	Included	Included
# Obs	386	426
Adj. R^2	0.2319	0.3113

Notes: (1) The numbers in parentheses indicate the p-values. (2) ***, **, and * represent significance at the 1, 5, and 10 percent levels, respectively. (3) All continuous variables are winsorized at 1% and 99% levels. (4) Variable definitions are presented in Appendix B.

4. DISCUSSION

The findings from this study reveal a distinct negative association between compliance with the fifteen core governance indices and corporate cash holdings. This pattern suggests that firms with more robust governance structures are likely to maintain lower levels of cash. Such a trend is in accordance with the flexibility hypothesis of agency theory, which contends that increased agency conflicts between managers and shareholders may result in managers exercising greater discretion over excess cash reserves. This significant influence of agency conflicts in dictating a firm's cash holding strategy is a critical observation of this research. This result is consistent with prior literature that supports the flexibility hypothesis, such as Park and Yeon (2009), Kusnadi (2011), and Chen et al. (2020). These studies collectively suggest that stronger corporate governance is associated with reduced cash holdings due to the mitigation of agency conflicts. At the same time, the result contradicts studies supporting the spending and shareholder power hypothesis, such as Dittmar and Mahrt-Smith (2007) and Harford et al. (2008).

The analysis of hypotheses 2*a*, 2*b*, and 2*c* in this study yields intriguing insights into the impact of specific corporate governance structures on cash holdings. The results indicate that governance mechanisms related to shareholder protection and the board of directors are negatively associated with corporate cash holdings. This implies that firms with stronger governance frameworks in these areas tend to maintain lower levels of cash. Such findings support the notion that the enhanced monitoring roles of both the board and shareholders effectively refine internal corporate governance processes. This refinement, in turn, appears to curtail managerial discretion in the utilization of cash, aligning firm resources more closely with shareholder interests. Contrastingly, the findings do not reveal a significant correlation between compliance with audit committee-related governance indices and corporate cash holdings. This lack of a significant relationship may be illuminated by the insights of Choi et al. (2020), who posited that the effectiveness of audit committees in influencing cash management might be constrained if its members lack sufficient expertise in accounting and finance. This might explain the lack of a significant relationship between compliance with audit committee-related governance indices and corporate cash holdings.

In alignment with existing research that underscores the pivotal role of organizational capital in influencing a firm's performance, value, and cash holdings (Lev & Radhakrishnan, 2005; Lev et al., 2009; Eisfeldt & Papanikolaou, 2013; He, 2018; Marwick et al., 2020), the additional findings of this study further emphasize the critical impact of organizational capital on corporate cash holdings. The results indicate that the negative correlation between compliance with core governance indices and cash holdings is more conspicuous in firms possessing lower levels of organizational capital. This observation lends support to the precautionary motive perspective. This suggests that firms endowed with more substantial organizational capital are more likely to accumulate cash as a strategy to avoid the costs of external financing. Such firms may view the accumulation of cash as a buffer against potential underinvestment or liquidity shortfalls, thereby aligning with the notion that firms with robust organizational infrastructure can better manage their resources, diminishing the necessity for external funding.

CONCLUSION

The objective of this study is to investigate the relationship between a firm's adherence to fifteen core governance indices and its corporate cash holdings. The study's findings provide compelling evidence supporting the premise that a robust corporate governance structure is associated with lower levels of cash holdings in firms. More specifically, it has been established that compliance with governance indices, particularly those pertaining to shareholder protection and board of directors, exhibits a significant and inverse relationship with corporate cash holdings. Moreover, a notable aspect of the study is the elucidation of the role of organizational capital in this dynamic. The results indicate that the negative association between governance compliance and cash holdings is more pronounced in firms with relatively lower levels of organizational capital. This highlights the significant influence of organizational capital in modulating the relationship between corporate governance compliance and cash management strategies.

This study provides essential insights for both regulators and investors, elucidating the significant impact of compliance with core governance indices, as reported in corporate governance reports, on corporate cash holdings. For investors, the findings serve as a valuable tool; the compliance status of a firm with these indices can be a predictive indicator of its cash holding behaviors. This knowledge empowers investors to make more informed decisions when assessing the financial health and management strategies of firms. Simultaneously, these insights are invaluable for regulators. Understanding the patterns in cash holdings relative to corporate governance compliance assists in crafting more nuanced and effective regulatory policies. By shedding light on the cash management practices of firms under varying levels of governance compliance, regulators can better tailor their approaches to ensure robust corporate governance standards.

Academically, this study makes a significant contribution to the ongoing debate concerning the impact of corporate governance on cash holdings. By presenting new evidence that supports a strong inverse relationship between comprehensive corporate governance structures and corporate cash holdings, this study enriches the existing body of literature. It offers a clearer understanding of the intricate dynamics between corporate governance practices and cash management strategies, bridging gaps in previous research and opening avenues for future studies. In conclusion, the findings of this study have useful implications, providing valuable contributions to the fields of corporate finance, governance, and regulatory policy, and enhancing the understanding of the complex interplay between corporate governance and financial decision making in firms.

AUTHOR CONTRIBUTIONS

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Formal analysis: Kevin Troy Chua.
Funding acquisition: Hansol Lee.
Investigation: Hansol Lee, Kevin Troy Chua.
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Writing – original draft: Hansol Lee, Kevin Troy Chua.
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APPENDIX A

Table A1. Fifteen corporate governance key indices

Categories	Key Indices	
Shareholder Protection	(1)	Announced the convening of a shareholder meeting four weeks prior to the annual general meeting.
	(2)	Adopted an electronic voting system.
	(3)	Avoiding the peak seasons for shareholder general meeting.
	(4)	Provide annual notice of dividend policy and distribution plans to shareholders at least once a year.
Board of Directors	(5)	Established and implemented CEO succession plan and policies (including emergency appointment policy).
	(6)	Established and operated internal control policies.
	(7)	Separated board chairman from the CEO.
	(8)	Adopted a cumulative voting system.
	(9)	Established policies to prevent appointment of any director who has damaged corporate value or infringed shareholder rights.
	(10)	Removed outside directors who served more than six years.
Audit Committee	(11)	Provided education program for audit committee at least once a year.
	(12)	Established independent internal audit team to support internal audit tasks.
	(13)	Included accounting or finance expertise in the audit committee.
	(14)	Allowed audit committee to hold meeting with external auditors at least quarterly without the presence of the firm's management.
	(15)	Established and implemented procedures for audit committee to access material information on the business operation.

APPENDIX B

Table B1. Variable definitions

Variable	Definition
Dependent Variable	
ln(Cash)	***Cash Holdings***. The natural logarithm of cash and short–term investment over net assets. Net assets are total assets less cash and short–term investment.
Independent and Control Variables	
CGScore	***Total Corporate Governance Score***. The summed number of complied factors disclosed in the corporate governance report of the firm, where the maximum score is fifteen (15).
SPScore	***Shareholder Protection Score***. The summed number of complied factors disclosed in the corporate governance report of the firm in relation to shareholder protection, where the maximum score is four (4).
BDScore	***Board of Directors Score***. The summed number of complied factors disclosed in the corporate governance report of the firm in relation to board of directors, where the maximum score is six (6).
ACScore	*Audit Committee Score*. The summed number of complied factors disclosed in the corporate governance report of the firm in relation to audit committee, where the maximum score is five (5).
Size	***Firm size***. Natural logarithm of total assets of the firm.
Lev	***Leverage***. Total debt over total assets.
NetWC	***Net Working Capital***. Net working capital over net assets. Net working capital is calculated as current assets less current liabilities and cash and short–term investment. Net assets are total assets less cash and short–term investment.
CF	***Cash Flow***. Cash flow over net assets. Cash flow is income before extraordinary items with the inclusion of R&D expenditures and depreciation. Net assets are total assets less cash and short–term investment.
SG	***Sales Growth***. The difference of current year sales and previous year sales, divided by previous year sales.
CapEx	***Capital Expenditures***. Capital expenditure over net assets. Net assets are total assets less cash and short–term investment.
Div	***Dividend Payout***. A dummy variable that equals one (1) if dividend payout is greater than zero, and zero (0) otherwise.
CFVol	***Cash Flow Volatility***. Standard deviation of cash flows divided by net assets over a three–year period. Cash flow is income before extraordinary items with the inclusion of R&D expenditures and depreciation. Net assets are total assets less cash and short–term investment.
R&D	***Research and Development***. R&D expenditures over net assets. Net assets are total assets less cash and short–term investment.

APPENDIX C

Table C1. Examples of disclosure on compliance status of 15 core corporate governance indicators (Samsung Electronics Co., Ltd.)

Category	Key Indices	Compliance	Note
Shareholder	Announced the convening of a shareholder meeting 4 weeks prior to the annual general meeting	o	Started sending notices 29 days prior to the AGM
	Adopted Electronic Voting system	o	First adopted at the 51st AGM
	Avoiding the peak seasons for shareholder general meeting	o	Avoided the date of general meeting concentration
	Provide annual notice of dividend policy and distribution plans to shareholders at least once a year	o	Provided details on shareholder return policy and future plans via IR meetings and public disclosures
Board	Established and implemented CEO succession plan and policies (including emergency appointment policy)	o	Established and continue to improve a documented succession policy
	Established and operated internal control policies	o	Established and operating an internal control policy on risk management, compliance, internal accounting management, management of public disclosure information, etc.
	Separated board chairman from the CEO	o	Separated since March 2018
	Adopted cumulative voting system	x	□
	Established policies to prevent appointment of any director who has damaged corporate value or infringed shareholder rights	o	Based on a documented management principle, review process for the eligibility of an appointed executive operating
	Removed outside directors who served more than six years	o	N/A
Auditor	Provided education program for audit committee at least once a year	o	Conducted in July 2020
	Established independent internal audit team to support internal audit tasks	x	Audit Team is overseen by the Corporate Management Office, conducting and supporting internal auditing activities and Audit Committee activities
	Included accounting or finance expertise in the audit committee	o	2 out of 3 Audit Committee members (Director Jae-wan Bahk, Han-jo Kim)
	Allowed audit committee to hold meeting with external auditors at least quarterly without the presence of the firm's management	o	Held more than once a quarter
	Established and implemented procedures for audit committee to access material information on the business operation	o	Audit Committee regulation states the Authority to request reports on the business status of the Company and investigate assets of the Company

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