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Revisiting the Effect of Dividend Policy on Firm Performance and Value: Empirical Evidence from the Korean Market

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Abstract: This study investigates the relationship between dividend policy, firm performance, and value within the Korean market, taking into account the unique context of Chaebol ownership structures. Utilizing a robust dataset of 5478 observations from the Korean Composite Stock Price Index, our empirical analysis employs advanced regression models, revealing distinctive effects of various dividend policy measures through the lenses of interest alignment and managerial entrenchment hypotheses. Surprisingly, while cash dividend payments exhibit a robust positive impact on Tobin's Q and market-to-book ratios, suggesting an overall positive link with market valuations, a closer inspection reveals divergent impacts for Chaebol and non-Chaebol firms. In Chaebol entities, dividend policy proxies consistently demonstrate positive effects on performance metrics, aligning with the interest alignment hypothesis and highlighting strategic signaling efforts. Conversely, non-Chaebol firms exhibit intriguingly negative impacts, supporting the managerial entrenchment hypothesis and implying potential challenges to market value. Firms should prioritize transparent communication on dividend policies for improved investor decision making and enhanced corporate governance in the dynamic Korean market.

Keywords: agency problem; dividend policy; firm performance; firm value; ownership concentration

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1. Introduction

The impact of dividend payouts on firm value has been widely acknowledged in the field of imperfect market theory, taking ideas from the cash flow signaling theory and the dividend information content hypothesis (Miller and Modigliani 1961; Bhattacharaya 1979; John and Williams 1985; Miller and Rock 1985). Managers with privileged knowledge of the firm's cash flow are incentivized to disclose this information to investors, providing insights into the firm's true value, according to these theoretical frameworks.

Significant concerns regarding corporate governance in Korea emanate from the unique structures that underpin the Chaebol system. Characterized by inter-corporate shareholdings and pyramidal ownership, this system, deeply rooted in Korea's economic and cultural context, unites businesses under a shared umbrella. At the apex, family members wield substantial control despite minimal cash flow rights. This intricate landscape fosters agency problems, particularly conflicts between controlling family members and minority investors, challenging the resolution of conflicts despite advancements in governance practices (La Porta et al. 1997, 2002).

Empirical evidence shows that minority shareholders in the Korean stock market are not adequately protected, which is compounded by insufficient statutory safeguards and enforcement procedures. This increases the possibility that business insiders, motivated by incentives and ability, will expropriate minority shareholders' rights and hoard excess cash flows when investment possibilities are few. The diversity of corporate governance

dynamics needs empirical research to determine the true consequences of dividend policy under these diverse governance structures (La Porta et al. 1997, 2002; Hwang et al. 2013).

In investigating the complex relationship between dividend policy and corporate performance in the Korean Composite Stock Price Index, our research finds Type I and Type II agency issues as significant determinants. Type I, which includes disagreements between owners and managers, and Type II, which involves minority shareholder expropriation, offer a more elaborate understanding of Korean business dynamics. For example, in examining the impact of Chaebol ownership structure, managerial ownership, and decision-making processes on cash holdings, insights from Bahrami and Evans (1987), Fahlenbrach (2009), and Wasserman (2003) highlight the distinct characteristics of firms where founders, directors, and managers wield enormous control. Founding CEOs, who frequently believe that their firms' survival is the product of their tireless labor, are more likely to behave in the best interests of the company than for personal benefit. This preference is reflected in their reduced spending on opulent extras, luxurious perquisites, and increased emphasis on long-term performance.

The interest alignment hypothesis resonates in the Chaebol milieu, which is characterized by convoluted ownership structures. Founder CEOs, who have significant managerial ownership, may align their interests with shareholders, resulting in a positive association between managerial ownership and cash holdings. If the interests of founder CEOs align with shareholders, dividend policy may be perceived as a mechanism to enhance firm value and performance. In this scenario, a positive relationship between dividend policy and firm outcomes might be expected (Jensen and Meckling 1976; Chen and Chuang 2009). Conversely, mirroring the entrenchment hypothesis, high managerial ownership in the Chaebol setting may generate worries about the pursuit of private interests at the expense of shareholders. This scenario could lead to a negative relationship between managerial ownership and cash holdings, particularly if decisions such as hoarding excess cash flows arise. Where the entrenchment hypothesis dominates, high managerial ownership may lead to decisions that prioritize private interests over shareholder value. This could result in a negative relationship between dividend policy and firm performance and value, highlighting potential agency problems and information asymmetry (Stulz 1990; Wang 2006; Faulkender and Wang (2006); Chen and Chuang 2009).

Previous research efforts, notably those conducted by Burns et al. (2015), Jo and Pan (2009), Gugler (2003), Faccio et al. (2001), Miller and Rock (1985), and Chen et al. (2005), have extensively examined the impact of dividend policy on firm performance and value in a variety of contexts, including European countries, East Asian countries, Hong Kong, and Austrian enterprises. Despite their contributions, the literature has varying opinions on the genuine effects of dividend policy. This study seeks to address a research vacuum by providing a thorough comprehension of the varied impacts of diverse dividend policy proxies, highlighting that investors may interpret signals differently. It highlights that not all aspects of dividend policy have a uniform impact on firm value and performance in the Korean setting. The emphasis on alignment and entrenchment theories is critical, given the unique Korean corporate environment, which is characterized by severe information asymmetry and complex agency concerns, as noted by Joh (2003), Paligorova (2010), and Lee (2022). This study aims to unravel the dynamic link within the alignment and entrenchment hypotheses, offering valuable insights for academic discourse and practical decision making in the Korean market, where major shareholders wield significant control through sophisticated cross-holding structures, contributing to the complexities of corporate finance dynamics (Jensen 1986; Shleifer and Vishny 1986).

Therefore, empirical research is required to determine the true consequences of dividend policy on Chaebol-governed enterprises. Investigating whether the impact of dividend payments changes across different ownership and governance configurations will help to better understand the complex nature of corporate governance in Korean-listed companies. The study is motivated by the sophisticated dynamics wherein managers strategically manipulate dividend policies, influenced by alignment or entrenchment theories,

and potentially deviate from their intended alignment with shareholder interests. While past studies have extensively explored this theme in developed markets and emerging economies, this study's novelty is underscored by the avalanche of unique characteristics in the Korean market, prompting an expectation of different relationships between various dividend policy measures and the firm's market performance and accounting outcomes (Jensen 1986; Shleifer and Vishny 1986).

This investigation seeks to address two pivotal research questions. (i) To what extent does dividend policy impact the firm's performance and value in the Korean market? (ii) Among Chaebol firms and non-Chaebol firms, to what extent does dividend policy impact firm performance and value through the lenses of alignment and entrenchment hypotheses? In answering these research questions, the first objective is to explore the effect of dividend policy on the firm's value and performance. In the dependent variable specification, this study employed Tobin's Q and market-to-book as firm value designates, while return on assets (ROA), return on equity (ROE), and return on sales (ROS) are designated as firm performance proxies. In the primary independent variable specification, four dividend policy proxies are employed, namely, dividend policy, cash dividend payment, dividend yield, and the dividend payout ratio. Seven control variables are employed to gauge their contributing influences in the determination of the effect of dividend policy on firms' outcomes. In the regression analyses, multiple regression models, including ordinary least squares (OLS), Least Squares Dummy Variable (LSDV), also known as the Fixed Effect Model, and a Panel Generalized Method of Moments (GMM) are used in the estimations and to arrest the endogeneity problem.

Our initial hypothesis is subjected to testing, and the results affirm that diverse dividend policy proxies exert significant effects on both the firm's market and accounting performance, even after adjusting for firm-specific characteristics. Regarding the market performance (Tobin's Q and market-to-book), cash dividend payments demonstrate a robust and statistically significant positive impact on Tobin's Q and market-to-book in both estimation methods, implying a positive relationship between cash dividend payments and market valuation. This indicates that firms distributing cash dividends are likely to experience higher market valuations, providing valuable insights for investors and strategic decision-making. Dividend policy (dummy) after adjusting for firm-specific characteristics shows positive effects in the LSDV estimation for both Tobin's Q and market-to-book. An observed negative and significant effect of dividend yield on firm value in the full study sample suggests that, on average, an increase in dividend yield ratio is associated with a decrease in firm value. This implies that, for the overall sample, a higher proportion of dividends relative to the stock price may be viewed unfavorably by investors, impacting the market valuation negatively. However, the subsequent split into Chaebol and non-Chaebol firms reveals contrasting effects, indicating the importance of ownership structure in influencing the relationship between dividend yield and firm value. It implies that a one-size-fits-all interpretation may not be applicable, and there could be unique dynamics at play, leading to different outcomes for various components of dividend policy. In terms of accounting performance (ROA, ROE, and ROS), all dividend policy measures consistently show a statistically positive effect on ROA, ROE, and ROS in the estimation models. The positive effects on accounting performance metrics align with the notion that a well-structured dividend policy positively contributes to a firm's financial health and profitability, reinforcing its attractiveness to investors.

The second objective is to simultaneously investigate the effects of various dividend policy proxies on firm value and firm performance indicators with respect to designated Chaebol firms and non-Chaebol firms under the alignment and entrenchment hypotheses. We test our second hypothesis and report interesting findings. The results show significant positive effects of the four dividend policy proxies on Tobin's Q and market-to-book ratios in Chaebol firms, emphasizing the alignment of dividend policies with market valuation. This evidence supports the interest alignment hypothesis, suggesting that these

conglomerates strategically use dividends to signal positive firm performance and enhance shareholder value. Conversely, for non-Chaebol firms, the significantly negative effects of the same dividend policy proxies on market performance metrics suggest a divergent dynamic. This supports the entrenchment hypothesis, indicating that these firms may opt to retain earnings for managerial entrenchment, potentially diminishing market value. On the accounting performance front, both Chaebol and non-Chaebol firms exhibit significantly positive effects of the four dividend policy proxies on ROA, ROE, and ROS. This aligns with the interest alignment hypothesis, emphasizing that dividend policies positively impact accounting outcomes in both business types. Non-Chaebol firms show a disparity with negative market performance but positive accounting results. This suggests challenges in translating positive operational outcomes into improved market valuation. Possible reasons include a focus on managerial retention, investor preference for retained earnings, and industry-specific investor expectations, emphasizing the need to consider context and investor outlook in the non-Chaebol context.

This study makes several important contributions. First, it systematically examines the effect of dividend policy on firm value and performance in the Korean market, addressing a significant gap in the literature specific to this context. Second, it gives detailed insights into the effects of dividend policy by taking into account the particular ownership arrangements prevalent in Korea, such as Chaebols and non-Chaebols. This helps to understand alignment and entrenchment theories in an unusual corporate governance setting. Finally, the analysis finds disparate outcomes, warning against a one-size-fits-all interpretation and underlining the importance of a comprehensive understanding of the relationship between dividend policy and firm outcome. These findings have ramifications for management, shareholders, and scholars. For managers, the research reveals that the influence of dividend policy on firm value and performance varies and that careful evaluation of specific aspects, such as ownership structures, is critical in decision making. Shareholders, particularly those in non-Chaebol corporations, should be cognizant of the uneven performance and potential entrenchment risks linked with dividend policy. Academics benefit from a deeper grasp of the Korean corporate landscape, which contributes to the larger literature on dividend policy, shareholder value, and profitability.

Based on these findings, a policy recommendation is to urge management and shareholders, particularly in Chaebol and non-Chaebol corporations, to be more transparent and communicative about dividend policy. Improved disclosure methods can help to reduce information asymmetry and align managerial choices with the interests of shareholders. This is consistent with the broader purpose of supporting corporate governance norms in the Korean market that boost transparency, accountability, and value creation. The subsequent sections unfold as follows. Section 2 looks into the examination of the existing literature and the development of hypotheses. Section 3 presents the research design, such as data, variable measurement, and model specification. Section 4 presents empirical analyses and estimation of the results. Section 5 provides the robustness tests, and Section 6 highlights the concluding thoughts.

2. Literature Review and Hypothesis Development

In the realm of imperfect market theory, the impact of dividend payouts on firm valuation has been widely acknowledged, drawing insights from the cash flow signaling theory and the dividend information content hypothesis (Miller and Modigliani 1961; Bhattacharaya 1979; John and Williams 1985; Miller and Rock 1985). According to these theoretical frameworks, managers, possessing privileged knowledge about the firm's cash flow, are incentivized to convey this information to investors, providing insights into the genuine value of the firm. The scholars in the theoretical and empirical debate around dividend policy and firm performance have contributed significantly to the field, yet consensus remains elusive. Rozeff (1982) explores determinants of dividend payout ratios, presenting an optimal dividend payout model wherein increased dividends reduce agency costs but elevate external financing transaction costs. The model posits that the

optimal dividend payout minimizes the sum of these costs. A cross-sectional test, including variables such as the fraction of equity held by insiders, past and expected future revenue growth, firm beta coefficient, and the number of common stockholders, reveals significant coefficients in the expected directions. These findings affirm that investment policy influences dividend policy.

Easterbrook (1984) outlines two agency–cost explanations of dividends, addressing the divergence between the economic literature assuming perfect managerial agency and other literature acknowledging managerial imperfections. The paper explores whether dividends serve as a means to align managers' interests with investors, proposing agency-cost explanations for dividends in the context of minimizing capital, agency, and taxation costs. Jiraporn et al. (2011) empirically link dividend payouts to corporate governance quality, guided by agency theory. Using Institutional Shareholder Services data, the study finds that firms with stronger governance are more inclined to pay larger dividends, supporting the idea that robust governance allows shareholders to influence managers, reducing opportunities for managerial expropriation through increased dividend distributions. The study's use of the two-stage least squares approach ensures consistent results, highlighting the tangible impact of corporate governance quality on crucial decisions, like dividend policy. McConnell and Servaes (1990) provide additional evidence on equity ownership and corporate value, while Li et al. (2020) explore the link between controlling shareholder share pledging and firm cash dividends. Lintner (1956) examines the distribution of incomes among dividends, retained earnings, and taxes. Mitton (2004) explores corporate governance and dividend policy in emerging markets, and Martins and Novaes (2012) investigate the impact of mandatory dividend rules on firms' ability to invest. Hu and Kumar (2004) explore managerial entrenchment and payout policy, introducing a novel perspective that integrates internal governance mechanisms, investment opportunities, management compensation, and monitoring by large shareholders. Their study, encompassing both dividend payments and share repurchases, reveals a positive correlation between factors enhancing executive entrenchment and the likelihood and level of payouts. The model, validated on a 1992–2000 sample of 2081 firms, demonstrates strong predictive performance, highlighting the asymmetric influence of entrenchment on dividend versus share repurchase policy. Isakov and Weisskopf (2015) focus on payout policies in founding family firms, and Yu et al. (2021) analyze dividend payouts and catering to demands in the context of a dividend tax reform. Atanassov and Mandell (2018) contribute evidence on tunneling from master limited partnerships. Theoretical approaches to dividend policy, such as dividend irrelevance, signaling, and agency theories, remain diverse and conflicting, presenting theoretical gaps that need clarification in the Korean market.

2.1. Dividend Policy Impact on Firm Performance and Value

An empirical investigation by Chen et al. (2005) analyzed 412 publicly listed Hong Kong firms during 1995–1998, revealing mixed results regarding the relationship between dividend payouts and firm performance. Notably, a negative association was found between market-to-book and dividend yield, while a positive link existed between ROA and dividend yield, especially in large firms. Additionally, the study identified a negative relationship between dividend yield and family ownership (up to 10% ownership), turning positive in the 10 to 35% range for small firms. These findings suggested that controlling families, particularly in smaller firms, may use dividend policy for resource extraction, while investors in firms with significant agency conflicts may demand higher payouts.

Nissim and Ziv (2001) investigated the correlation between dividend changes and future profitability over a five-year period. Results indicated a positive relationship between increased dividends and income in the subsequent four years. However, a decrease in dividends was not associated with future income. The asymmetrical market reaction suggested that only a dividend increase led to improved performance over the four years

following the announcement, with no abnormal profitability observed in cases of dividend decline.

Amidu (2007) identified a positive and significant relationship between return on assets (ROA) and dividend policy in firms listed on the Ghana Stock Exchange over the 1997–2004 period. The study also found a statistically significant negative association between profitability and the dividend payout ratio. Furthermore, dividend policy exhibited a positive and significant influence on return on equity (ROE), while a negative relationship was observed between ROE and the dividend payout ratio.

Nguyen et al. (2021) analyzed 450 Vietnamese firms, finding that a higher dividend rate positively affected return on assets (ROA), while the decision of dividend payment negatively impacted ROA. For return on equity (ROE), a positive impact was observed for the dividend rate, while the decision of dividend payment had a negative influence. Additionally, the dividend rate negatively affected Tobin's Q, and the decision of dividend payment contributed to an increase in Tobin's Q at a significance level of 10%.

Benartzi et al. (1997), using Fama and French's (2001) model, found that observed dividend changes lacked informative content regarding future profits, with statistically insignificant coefficients for changes in dividends concerning year 1 and year 2 profit changes. Amihud and Murgia (1997) confirmed the dividend information content hypothesis (ICH) for 200 firms listed on the Frankfurt Stock Exchange, with a significant abnormal return of approximately 0.965 for announcements of dividend increases and −1.73 for announcements of dividend decreases. Building on the insights from Chen et al. (2005) and other relevant studies, we hypothesize that dividend policy significantly impacts firm performance and value in the Korean market. Specifically, we expect a positive association between cash dividend payments and market valuation (Tobin's Q and market-to-book) and a positive impact on accounting performance metrics (ROA, ROE, and ROS). This aligns with the notion that firms distributing cash dividends are likely to experience higher market valuations, providing valuable insights for investors and strategic decision-making.

H1. *Dividend policy impacts firm performance and value significantly.*

2.2. Differential Impact Among Chaebol and Non-Chaebol Firms

Khan et al. (2022) analyze the internal determinants of dividend policies in Japan and South Korea, revealing distinct patterns. Notably, Korean firms display similarities to Anglo-Saxon countries, with larger firms paying higher dividends during earnings increases, whereas Japanese firms differ, decreasing cash dividends with increased profitability, offering useful information for stakeholders and contributing to a detailed understanding of dividend policy dynamics in diverse financial systems. In the Korean setting, research including Nam (1991), Park (2004), Kim and Jang (2016), Kim and Lee (2022), and Jung and Chun (2017) explore dividend signaling. Park (2004) finds a positive link between changes in dividends and future profitability, supporting the signaling theory. Jung and Chun (2017) explore Korean banks' dividends, supporting the signaling theory but not the agency theory. Kim and Lee (2022) find that KOSDAQ firms prioritize dividends for signaling, contrasting KOSPI firms favoring earnings retention. However, Nam (1991), due to the sophisticated ownership structures of large business groups in the Korean market, fails to establish a significant relationship between changes in EPS, as a firm performance proxy and dividend policy in Korea.

2.2.1. Chaebol Firms

The interest alignment hypothesis resonates in the Chaebol milieu, which is characterized by convoluted ownership structures. Founder CEOs, who have significant managerial ownership, may align their interests with shareholders, resulting in a positive association between managerial ownership and cash holdings. If the interests of founder CEOs align with shareholders, dividend policy may be perceived as a mechanism to enhance

firm value and performance. In this scenario, a positive relationship between dividend policy and firm outcomes might be expected (Jensen and Meckling 1976; Chen and Chuang 2009). The effect of dividend policy on business performance and value in Chaebol firms is predicted to be influenced by the ownership structure. High managerial ownership within Chaebol structures, in particular, may result in an alignment of managerial interests with shareholders, resulting in a positive relationship between dividend policy and firm outcomes. We argue that shareholders with significant ownership stakes have a vested interest in the company's performance, leading them to actively monitor and influence managerial decisions. This active monitoring can serve as a mechanism to mitigate managerial entrenchment tendencies and promote actions that align with overall shareholder value. Based on the empirical evidence of Jiraporn et al. (2011), Chen et al. 2005, and Khan et al. 2022, this paper proposes the following:

H2a. *In terms of the alignment hypothesis, high managerial ownership within Chaebol structures may align managerial interests with shareholders, resulting in a positive relationship between dividend policy and firm outcomes.*

2.2.2. Non-Chaebol Firms

Ordinarily, a more transparent ownership structure is expected to influence dividend policy's impact on business performance and value in non-Chaebol firms. In this context, dividend policies in non-Chaebol firms are supposed to show a clearer alignment between dividend policy and positive firm performance. Conversely, mirroring the entrenchment hypothesis, where the firm's stock ownership is dispersed, high managerial ownership in non-Chaebol firms may generate worries about the pursuit of private interests at the expense of shareholders. This scenario could lead to a negative relationship between managerial ownership and cash holdings, particularly if decisions such as hoarding excess cash flows arise. Where the entrenchment hypothesis dominates, high managerial ownership may lead to decisions that prioritize private interests over shareholder value. This could result in a negative relationship between dividend policy and firm performance and value, highlighting potential agency problems and information asymmetry (Stulz 1990; Wang 2006; Faulkender and Wang (2006); Chen and Chuang 2009). Equally, when dividend payments are driven by shareholder pressure, as indicated by the outcome model (La Porta et al. 1997, 2002; Hwang et al. 2013), a negative association between managerial entrenchment and dividend payments emerges. According to Chen and Chuang (2009), entrenched managers who provide fewer shareholder protection rights may refuse to pay dividends due to a lack of pressure from dispersed shareholders. This supports the entrenchment hypothesis, which states that the presence of entrenched managers in enterprises with dispersed ownership may restrict dividend payments, resulting in negative consequences on firm results. Entrenched managers lack the motivation to mitigate agency problems, and entrenchment allows for discretionary decisions that enhance their personal utility. This situation may lead to a negative relationship between managerial ownership and cash holdings, particularly if decisions such as hoarding excess cash flows arise. Where the entrenchment hypothesis dominates, high managerial ownership may lead to decisions that prioritize private interests over shareholder value. We argue that in non-Chaebol enterprises with dispersed ownership, inadequate monitoring procedures and lower shareholder influence will also lead to a negative link between managerial entrenchment and dividend payments. Therefore, we hypothesize the following:

H2b. *In terms of the entrenchment hypothesis, a significant negative relationship between dividend policy and firm outcomes is predicted in non-Chaebol firms.*

These hypotheses form the foundation for our empirical investigation, which aims to provide varied insights into the complex relationship between dividend policy and firm

performance metrics. The unique dynamics of the Korean market, particularly in the context of Chaebol ownership structures, will be illuminated as well.

Theoretical approaches to dividend policy, such as dividend irrelevance, signaling, and agency theories, remain diverse and conflicting, presenting theoretical gaps that need clarification in the Korean market. In order to address these gaps, this research aims to (i) explore the overall effect of dividend policy on firm value and performance in the Korean market and (ii) investigate the differential impact on Chaebol and non-Chaebol firms through the lenses of alignment and entrenchment hypotheses. It aims to perform the empirical testing of hypotheses by utilizing OLS, LSDV (Fixed Effect model), and panel GMM as estimation techniques, which adds novelty to this study. Adopting these methods will not only add robustness to the investigation of the direct effects of various dividend policy proxies but also address endogeneity issues. That way, this study contributes to methodological diversity in analyzing corporate finance phenomena.

Finally, this research aims to address the unique characteristics of the Korean market by dissecting the impact of dividend policy on both market and accounting performance, considering Chaebol and non-Chaebol firms separately. This approach fills a research gap by recognizing the complex dynamics within Korean business groups and shedding light on ownership structure implications.

3. Research Design

3.1. Sample Selection

The financial information of firms was massively downloaded from the KisValue version 3.2 database. The initial sample includes 718 Korean firms listed on the Korea Composite Stock Price Index (KOSPI). Financial institutions, like insurance, banks, and capital holding companies, were excluded because their financial characteristics differed from those of industrial firms. As a result, excessive leverage for financial firms is unlikely to have an identical definition for non-financial firms (Fama and French 1992). Firms with missing dividend data and information were removed. Firms must have reported sales during the sampling period to be selected. Using the pandas jupyter in the python language program, the raw data were synthesized further and cleaned up before conversion into a balanced panel data structure. Eventually, 498 non-financial firms with comprehensive financial statements were sampled from 2010 to 2021. Due to the fact that some variables were lagged and to also capture contemporaneous estimations, our cross-sections span from 2011 to 2021, yielding a total of 5478 firm-year observations. Winsorization at 95% is observed to limit extreme values in the dataset and reduce the effect of possible spurious outliers.

3.2. Estimation Method

We employ ordinary least squares (OLS) panel data regression models in the estimation of the effect of dividend policy on firm performance and value. Also, this study employs the Least Squares Dummy Variable model (LSDV). This approach is often used when dealing with panel or longitudinal data, where observations are made on the same entities over multiple time periods or under different conditions. LSDV in panel data addresses unique entity-specific effects by introducing dummy variables for each entity, capturing characteristics not accounted for by observed variables. It accommodates time-invariant entity features, ensuring a robust estimation of fixed effects models where unobserved factors vary across entities but remain constant over time. LSDV also mitigates endogeneity concerns and controls for heterogeneity by estimating separate intercepts for each entity, enhancing efficiency and accuracy in parameter estimates. In the robustness testing, the Generalized Method of Moments/dynamic panel data will be employed to stem endogeneity issues.

3.3. Research Model and Variable Specification

Our investigation is focused on addressing two pivotal questions: (i) To what extent does dividend policy impact the firm's performance and value? (ii) Among firms in the Korean market, broadly known as Chaebol (large business conglomerates under a family control or affiliated company) and non-Chaebol firms (characterized by widely distributed governance and ownership structures), to what extent does dividend policy impact firm performance and value through the lenses of alignment and entrenchment hypotheses? In answering these research questions, the first objective is to explore the effect of dividend policy on firm value and performance. In the dependent variable specification, this study employed Tobin's Q and market-to-book as firm value designates, while return on assets (ROA), return on equity (ROE), and return on sales (ROS) are designated as firm performance proxies. In the primary independent variable specification, four dividend policy proxies are employed, namely, dividend policy, cash dividend payment, dividend yield, and dividend payout ratio. The following control variables are specified: Dummy-Chaebol, which distinguishes a large business group, a Chaebol firm, or its affiliated company from other firms in the market, the debt ratio, ownership concentration, free cash flow, asset intensity, employee intensity, and size. These control variables are all employed to gauge their contributing influences in the determination of the effects of dividend policy on firms' outcomes. The second objective is to simultaneously investigate the effects of various dividend policy proxies on firm value and firm performance indicators with respect to designated Chaebol firms and non-Chaebol firms under the alignment and entrenchment hypotheses. Positive effects conventionally imply alignment of interests, and negative effects may suggest a deviation or possible entrenchment concerns. Korea Fair Trade Commission, KFTC (BHSN 2020), and Corporate group portal (기업집단포털), designate all of the affiliates of a Chaebol group as one large business group when the total assets of all affiliates are KRW 5 trillion or more. If the leader holds 30% or more of the issued shares in conjunction with related persons, it is considered to be actually a controlling company (E-Group 2023). We split our full study sample into Chaebol firms (controlled by families or affiliated concerns with total assets of over KRW 5 trillion and high ownership stakes above 30% of issued shares) and non-Chaebol firms with dispersed stock—ownership structures. We propose a research model that examines the empirical relationship between dividend policy and firm value and performance in Korean traded companies as follows:

$$FV = \beta_0 + \beta_1 DP_{i,t} + \beta_2 CDP_{i,t} + \beta_3 DY_{i,t} + \beta_4 DPR_{i,t} + \beta_5 DEBT\ RATIO_{i,t} + \beta_6 FCF_{i,t} + \beta_7 OWN.CONC_{i,t} + \beta_8 DUMMYCHAEBOL_{i,t} + \beta_9 ASSET\text{-}INTENSITY_{i,t} + \beta_{10} EMPLOYEE\text{-}INTENSITY_{i,t} + \beta_{11} SIZE_{i,t} + \varepsilon \quad (1)$$

$$FP = \beta_0 + \beta_1 DP_{i,t} + \beta_2 CDP_{i,t} + \beta_3 DY_{i,t} + \beta_4 DPR_{i,t} + \beta_5 DEBT\ RATIO_{i,t} + \beta_6 FCF_{i,t} + \beta_7 OWN.CONC_{i,t} + \beta_8 DUMMYCHAEBOL_{i,t} + \beta_9 ASSET\text{-}INTENSITY_{i,t} + \beta_{10} EMPLOYEE\text{-}INTENSITY_{i,t} + \beta_{11} SIZE_{i,t} + \varepsilon \quad (2)$$

where

FV (firm value) = Tobin's Q and the market-to-book ratio.

FP (firm performance) = ROA, ROE, and ROS. FV and FP represent firm value and performance measures, respectively.

$\varepsilon_{i,t}$ is the error term for the firm i in year t.

$DP_{i,t}$ is the variable representing the dividend policy for firm i at time t. As a binary variable, it assumes 1 when firm i pays a dividend at time t; otherwise, it is 0.

$CDP_{i,t}$ is the variable representing cash dividend payment. As a dividend policy proxy, it is computed by dividing the total cash dividends paid by the net income of the company. This ratio specifically focuses on the portion of net income that is distributed to shareholders in the form of cash dividends. It provides insights into the firm's ability to generate sufficient cash flow from its operations to fund dividend payments.

$DY_{i,t}$ (Dividend Yield) = (Annual Dividend per Share/Current Stock Price) × 100. Dividend yield is a valuable proxy for estimating the impact of dividend policy on firm performance and value. It measures shareholder returns directly, attracts income-seeking investors, reflects market perception of company performance, signals the impact of dividend policy on stock prices, aligns with shareholder value, allows comparative analysis, reveals historical trends, and serves as a signal of financial strength and management confidence in profitability.

$DPR_{i,t}$ (dividend payout ratio) is calculated by dividing the total amount of dividends paid by a company by its net income. The formula for the DPR = (Dividends Paid/Net Income) × 100. The DPR directly communicates the proportion of net income distributed to shareholders as dividends. This makes it a straightforward measure of how much profit the company is sharing with its investors. A consistent and reasonable DPR can indicate financial discipline and prudent capital management. It reflects a firm's approach to balancing dividend payments with retained earnings for future growth and investment.

DEBT RATIO: The debt ratio is calculated by dividing a firm's total debt by its total assets. The formula for computing the debt ratio is as follows: Debt Ratio = (Total Debt/Total Assets) × 100. Debt ratios influence how efficiently a firm allocates capital. As a control variable, the debt ratio helps assess whether a firm's dividend policy is influenced by its capital structure, providing clarity on the factors shaping the relationship between dividends and financial decisions.

$FCF_{i,t}$ measures the firm's free cash flow. It is computed as cash from operating activities minus common and preferred dividends scaled by total assets.

Own $Conc._{i,t}$ (ownership concentration) is measured by the percentage of issued shares held by the first major shareholders.

$DUMMYCHAEBOL_{i,t}$: Including "DummyChaebol" as a control variable is essential to isolate the impact of Chaebol membership on the relationship under study. This dummy variable aids in accounting for the diverse business units within Chaebols, controlling for unique governance structures and ensuring a clearer understanding of how group affiliation influences the observed relationship. It takes a value of 1 if a firm i at time t is a Chaebol; it is 0 otherwise.

Tobin's $Q_{i,t}$ is the firm value variable. Tobin's Q ratio is computed as the total market value of the firm scaled by the total asset value of firm i in year t.

MARKET-TO-BOOK: The market-to-book (MTB) ratio is calculated by dividing the market capitalization of a company by its net book value. Here, the market capitalization represents the total market value of a firm's outstanding shares, and the net book value is the difference between a firm's total assets and total liabilities as reported on its balance sheet.

$ROA_{i,t}$ is the return on assets and stands in for firm performance. ROA measures a firm's ability to generate profit from its assets. ROA = (Net Income/Total Assets) × 100.

$ROE_{i,t}$ is the return on equity, which evaluates the profitability of a company in relation to its shareholders' equity. ROE = (Net Income/Shareholders' Equity) × 100.

$ROS_{i,t}$: is the return on sales, which assesses a firm's net income relative to its total revenue. ROS = (Net Income/Total Revenue) × 100.

Asset intensity of the firm is computed as $Asset_{i,t}$ scaled by $Sales_{i,t.}$ [Asset $Intensity_{i,t}$ = $Asset_{i,t}/Sales_{i,t}$]

Employee intensity of the firm is computed as $Employee_{i,t}$ scaled by $Sales_{i,t.}$ [Employee $Intensity_{i,t}$ = $Employee_{i,t}/Sales_{i,t}$]

$SIZE_{i,t}$ (total revenue): This is computed as the log of sales revenue of firm i at time t. It describes the total income generated by the company from its primary operations.

4. Results

4.1. Sample Statistics

Table 1 provides descriptive statistics for various financial and ownership-related variables across 5478 observations. Tobin's Q with a mean of 0.7057 indicates, on average, that firms have a market value slightly higher than their book value, whereas a Standard Deviation (Std. Dev.) of 0.5562 reflects variability around the mean. Market-to-book with a mean of 1.2226 suggests, on average, that the market values firms at approximately 22% above their book value, and an Std. Dev. of 0.9346 indicates significant variability. ROA (return on assets) with a mean of 0.0235 indicates a low average return on assets, while an Std. Dev. of 0.0555 shows variability. ROE (return on equity) with a mean of 0.0311 reflects a modest average return on equity, whereas an Std. Dev of 0.0994 indicates variability. A mean of 0.0575 suggests a moderate average return on sales (ROS), while an Std. Dev. of 0.1614 indicates variability. The dividend policy with a mean of 0.6687 suggests a prevalence of firms with dividend policies (values close to 1), whereas a debt ratio with a mean of 0.4014 indicates an average debt-to-assets ratio of 40%. A mean of 29.8639 is an indication that sampled firms exhibit an average ownership concentration of 29.86%, whereas a DummyChaebol mean of 0.2169 suggests the presence of firms affiliated with Chaebols. A mean of 3.0323 for asset intensity suggests that, on average, firms have a relatively higher proportion of assets contributing to their sales. However, the employee intensity mean of 1.88×10^{-9} indicates a very low average proportion of employees contributing to sales. Dividend yield with a mean of 0.0122 indicates an average dividend yield of 1.22%, while a dividend payout ratio (DPR) mean of 0.2023 suggests an average payout of 20.23% of earnings as dividends. A mean of 0.0075 for cash dividend payments (CDPsi,t) implies that, on average, firms distribute approximately 0.75% of their net income to shareholders in the form of cash dividends.

Table 1. Descriptive statistics.

Variable	Obs.	Mean	Std. Dev.	Median	Minimum	Maximum
Tobin's Q	5478	0.7057	0.5562	0.5253	0.0882	2.2114
Market-to-book	5478	1.2226	0.9346	0.9199	0.2284	3.7833
ROA	5478	0.0235	0.0555	0.0251	−0.1138	0.1257
ROE	5478	0.0311	0.0994	0.0353	−0.2402	0.2061
ROS	5478	0.0575	0.1614	0.0341	−0.2514	0.5497
DIVIDEND POLICY	5478	0.6687	0.4707	1.0000	0.0000	1.0000
CASH DIVIDEND PAYMENT	5478	0.0075	0.0083	0.0048	0.0000	0.0285
DIVIDEND YIELD	5478	0.0122	0.0125	0.0090	0.0000	0.0405
DIVIDEND PAYOUT RATIO	5478	0.2023	0.2652	0.1185	−0.0827	0.9094
DEBT RATIO	5478	0.4014	0.2211	0.3951	0.0005	2.5343
FREE CASH FLOW	5478	0.0439	0.0591	0.0406	−0.0697	0.1632
OWN. CONC.	5478	29.8639	14.8796	26.8200	9.6004	61.0900
DUMMYCHAEBOL	5478	0.2169	0.4121	0.0000	0.0000	1.0000
LN. ASSET_INTENSITY	5478	3.0323	4.8635	1.3484	0.5387	20.3293
LN.EMPLOYEE _INTENSITY	5478	1.88×10^{-9}	1.35×10^{-9}	1.53×10^{-9}	2.59×10^{-9}	5.29×10^{-9}
SIZE	5478	26.2427	1.4733	26.1601	23.4752	29.278

Note: Obs. = observations; ROA = return on assets; ROE = return on equity; ROS = return on sales; Own. Conc. = ownership concentration; Tobin's Q = firm value.

These statistics collectively depict the distribution and tendencies in firms' cash dividend payment practices, dividend yields, and dividend payout ratios. The relatively low mean values suggest that, on average, business groups may adopt a conservative approach to cash dividends, with considerable variability in these practices. Further analysis would provide additional context for understanding firms' dividend strategies.

4.2.1 Correlation Analysis

Table 2 below is the correlation table (cross-correlation matrix), which shows the pairwise correlations between different variables. Tobin's Q has a strong positive correlation with market-to-book (0.8619), ROA (0.1864), ROE (0.1363), ROS (0.1437), cash dividend payment (0.3596), asset intensity (0.0767), employee intensity (0.1869), the dividend payout ratio (0.1059), dividend policy (0.0709), free cash flow (0.1403), and DummyChaebol (0.0701), whereas it has a strong negative correlation with size (−0.1193), dividend yield (−0.1143), the debt ratio (0.3351), and ownership concentration (−0.1053). ROA has positive correlations with Tobin's Q (0.1864), market-to-book (0.0307), ROE (0.8959), ROS (0.6226), cash dividend payment (0.4995), the dividend payout ratio (0.1772), dividend yield (0.3329), dividend policy (0.4294), DPR (0.1772), dividend yield (0.3329), dividend policy (0.4294), DummyChaebol (0.1940), ownership concentration (0.0997), and free cash flow (0.4911), whereas ROA has negative correlations with asset intensity (−0.0525), employee intensity (−0.1762), and the debt ratio (−0.3000). While the observed correlations reveal useful information about the relationships between variables, it is important to remember that correlation does not indicate causation. The discovered associations point to trends in the data, but establishing a cause-and-effect relationship requires further rigorous analysis.

Table 2. Cross-correlation matrix of variables.

S/No.	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Tobin's Q	1.0000															
2	Market-to-book	0.8619 ***	1.0000														
		(0.0000)															
3	ROA	0.1864 ***	0.0307 **	1.0000													
		(0.0000)	(0.0232)														
4	ROE	0.1363 ***	0.0049	0.8959 ***	1.0000												
		(0.0000)	(0.7175)	(0.0000)													
5	ROS	0.1437 ***	−0.0302 **	0.6226 ***	0.5183 ***	1.0000											
		(0.0000)	(0.0254)	(0.0000)	(0.0000)												
6	Size	−0.1193 ***	−0.0264 **	0.1955 ***	0.1949 ***	−0.1004 ***	1.0000										
		(0.0000)	(0.0506)	(0.0000)	(0.0000)	(0.0000)											
7	Cash Dividend Payment	0.3596 ***	0.1842 ***	0.4995 ***	0.4014 ***	0.3796 ***	0.0899 ***	1.0000									
		(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)										
8	Ln. Asset Itensity	0.0767 ***	−0.0486 ***	−0.0525 ***	−0.0600 ***	0.5493 ***	−0.4211 ***	0.0818 ***	1.0000								
		(0.0000)	(0.0003)	(0.0001)	(0.0000)	(0.0000)	(0.0000)	(0.0000)									
9	Ln. Employee Intensity	0.1869 ***	0.1722 ***	−0.1762 ***	−0.1647 ***	−0.1279 ***	−0.3827 ***	−0.0614 ***	0.1000 ***	1.0000							
		(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)								
10	Dividend Payout Ratio	0.1059 ***	−0.0121	0.1772 ***	0.1564 ***	0.2811 ***	−0.0091	0.5658 ***	0.1965 ***	−0.0421 ***	1.0000						
		(0.0000)	(0.3712)	(0.0000)	(0.0000)	(0.0000)	(0.5017)	(0.0000)	(0.0000)	(0.0018)							
11	Dividend Yield	−0.1143 ***	−0.2386 ***	0.3329 ***	0.2797 ***	0.2730 ***	0.0945 ***	0.6977 ***	0.0718 ***	−0.1344 ***	0.5482 ***	1.0000					
		(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)						
12	Dividend Policy	0.0709 ***	−0.0853 ***	0.4294 ***	0.3820 ***	0.3504 ***	0.1732 ***	0.6324 ***	0.0943 ***	−0.1340 ***	0.5368 ***	0.6627 ***	1.0000				

		(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)					
13	Debt Ratio	−0.3351 ***	0.0628 ***	−0.3000 ***	−0.1944 ***	−0.4025 ***	0.2799 ***	−0.3845 ***	−0.3556 ***	−0.0811 ***	−0.2736 ***	−0.2794 ***	−0.3647 ***	1.0000			
		(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)				
14	Free Cash Flow	0.1403 ***	0.0702 ***	0.4911 ***	0.4277 ***	0.1997 ***	0.2344 ***	0.3275 ***	−0.1614 ***	−0.1019 ***	0.0947 ***	0.1977 ***	0.2424 ***	−0.1047 ***	1.0000		
		(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)			
15	Dummy Chaebol	0.0701 ***	0.0137 ***	0.1940 ***	0.1787 ***	0.1678 ***	0.0382 ***	0.3864 ***	0.0646 ***	−0.0722 ***	0.3977 ***	0.3633 ***	0.3704 ***	−0.1547 ***	0.1408 ***	1.0000	
		(0.0000)	(0.3097)	(0.0000)	(0.0000)	(0.0000)	(0.0047)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)			
16	Own. Conc.	−0.1053 ***	−0.0753 ***	0.0997 ***	0.1205 ***	0.0403 ***	0.0633 ***	0.0146	−0.0128	−0.0790 ***	0.0025	0.0192	−0.0148	0.0834 ***	0.1009 ***	0.4712 ***	1.0000
		(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0028)	(0.0000)	(0.2815)	(0.3433)	(0.0000)	(0.8550)	(0.1543)	(0.2727)	(0.0000)	(0.0000)	(0.0000)	

Note: Obs. = observations = 5478; ROA = return on assets; ROE = return on equity; ROS = return on sales; Own.Conc. = ownership concentration; Tobin's Q = firm value; *** and **, indicating statistical significance at the 1%, and 5%, levels, respectively.

4.2.2 Multicollinearity Tests

Multicollinearity can skew the results of regression analysis, leading to unreliable coefficient estimates and inflated standard errors. By assessing and ensuring low VIF values, we improve the robustness and accuracy of our estimations, providing more trustworthy insights into the relationships between the regressors and the dependent variable. Appendix A, presents the results of a multicollinearity test, assessing the Variance Inflation Factor (VIF) for each independent variable. The VIF values for each variable are relatively low, ranging from approximately 1.19 to 2.63. These values suggest that there is minimal multicollinearity among the independent variables in the model. Low VIF values are desirable as they indicate that the variables are not highly correlated with each other. This is crucial for accurate estimation of coefficients and reliable inference in regression analysis.

4.3. Empirical Analysis of the Effect of Dividend Policy on Firm Performance and Value

Table 3 reports the effect of dividends on firm value with Tobin's Q as the proxy for market performance. Dividend policy in Panel A has a coefficient of approximately −0.125 and a t-statistic of −6.933, negatively impacting Tobin's Q and being statistically significant at a 1% level, whereas in Panel B, it has a coefficient of approximately 0.131, positively impacting Tobin's Q and being statistically significant at a 1% level (t-statistic of 7.719). We observe opposite effects, significant in both, but whose magnitude and direction differ. Cash dividend payment in Panel A has a coefficient of approximately 19.875, positively impacting Tobin's Q and being statistically significant at a 1% level (t-statistic 19.924). Panel B has a coefficient of approximately 17.079, positively impacting Tobin's Q and being statistically significant at a 1% level (t-statistic 17.510). A similar positive impact was significant in both, with a slightly lower magnitude in Panel B. The dividend payout ratio in both Panel A and Panel B is not statistically significant at conventional levels with −0.008, t-statistic −0.253, and −0.006, t-statistic −0.255, respectively. Both are not significant or consistent across panels. In both estimations (Panel A: Pooled OLS and Panel B: LSDV - Fixed Effects), the debt ratio exhibits significant coefficients ranging from -1.424 to -0.578 in the OLS estimation, and from -1.294 to -0.670 in the LSDV estimation, all at the 1% significance level. Both methods show that a higher debt ratio is associated with a decrease in Tobin's Q. Free cash flow exhibits significant coefficients ranging from 0.435 to 2.028 (all significant at the 1% level) in the OLS estimation and from 0.177 to 0.765 (all significant at the 1% level) in the LSDV estimation, both methods indicating a positive association with Tobin's Q. Ownership concentration (OWN.CONC) exhibits significant coefficients ranging from -0.005 to -0.010 (all significant at the 1% level) in the OLS estimation and from -0.004 to -0.006 (all significant at the 1% level) in LSDV. Both methods suggest that higher ownership concentration is associated with a decrease in Tobin's Q. In order to confirm if being a member firm of a Chaebol conglomerate impacts the relationship, we introduce DummyChaebol. In the OLS estimation method, the coefficients range from

0.027 to 0.376 and are significant at 1%. In LSDV, the coefficients range from −0.028 to 0.200 and are significant at 1%. Both methods largely suggest that being a part of a Chaebol group is positively associated with Tobin's Q. The variable Ln.Asset_Intensity in OLS has coefficients ranging from −0.087 to −0.018 and are all significant at 1%. In LSDV, coefficients range from −0.079 to −0.166 and are all significant at 1%. Both methods show that higher asset intensity is associated with a decrease in Tobin's Q. The variable Ln.Employee_Intensity in Panel A (OLS) indicates that coefficients range from 0.021 to 0.118 and are all significant at 1%. LSDV coefficients range from 0.023 to −0.009 and are all significant at 1%. Both methods agree that higher employee intensity is associated with a higher Tobin's Q. Size in OLS estimations reveals that coefficients range from −0.027 to −0.007 and are all significant at 1%. The LSDV coefficients range from −0.031 to −0.024 and are all significant at 1%. Both methods show that larger firms tend to have a lower Tobin's Q. These control variables are included to account for various factors that may influence Tobin's Q, and their significant coefficients provide insights into the specific impact each variable has on firm value in the Korean context. The constant has coefficients ranging from 1.975 to 3.787 and are all statistically significant at a 1% level, with t-statistics ranging from 3.059 to 19.231. The constant represents the baseline value of Tobin's Q when all independent variables are zero. The positive coefficients suggest a positive baseline value for Tobin's Q. Regarding model fitness variables, OLS exhibits R-squared and adjusted R-squared ranging from 0.144 to 0.218 and 0.142 to 0.217, respectively. In LSDV, the R-squared ranges from 0.645 to 0.716, and the adjusted R-squared ranges from 0.608 to 0.668. LSDV generally shows higher R-squared values, indicating a better fit. Overall model significance, measured by F-statistic and Prob(F-statistic), is higher in OLS (F-statistics ranging from 114.628 to 190.238, Prob(F-statistic) significant at 0.000), suggesting better overall model fit compared to LSDV, which records F-statistics ranging from 17.472 to 24.343, and Prob(F-statistic) is significant at 0.000 for all four model equations. Results show that the coefficients for dividend policy, cash dividend payment, and dividend yield differ in sign between OLS and LSDV, indicating sensitivity to estimation methods. When fixed effects are considered, the impact of dividend policy shifts from negative to positive, emphasizing the necessity of accounting for unobservable firm-specific characteristics.

Table 3. Effect of dividend policy on firm value (Tobin's Q).

Panel A (Dependent Variable: Tobin's Q) Pooled OLS					**Panel B (Dependent Variable: Tobin's Q) LSDV (Fixed Effect)**			
	1	2	3	4	1	2	3	4
Variables	Coeff.(t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)
Dividend Policy	−0.125 ***				0.131 ***			
	(−6.933)				(7.719)			
Cash Dividend Payment		19.875 ***				17.079 ***		
		(19.924)				(17.510)		
Dividend Yield			−21.329 ***				−10.409 ***	
			(−18.343)				(−9.093)	
Dividend Payout Ratio				−0.008				−0.006
				(−0.253)				(−0.255)
Debt Ratio	−0.946 ***	−0.578 ***	−1.424 ***	−0.855 ***	−0.786 ***	−0.670 ***	−1.294 ***	−0.865 ***
	(−22.825)	(−14.291)	(−19.212)	(−21.421)	(−14.445)	(−12.551)	(−12.070)	(−16.036)
Free Cash Flow	1.188 ***	0.435 ***	2.028 ***	1.065 ***	0.332 ***	0.177 *	0.765 ***	0.355 ***

	(9.429)	(3.475)	(8.756)	(8.490)	(3.471)	(1.883)	(4.019)	(3.686)
Own. Conc.	−0.005 ***	−0.003 ***	−0.010 ***	−0.005 ***	−0.005 ***	−0.004 ***	−0.009 ***	−0.006 ***
	(−9.674)	(−4.975)	(−9.612)	(−8.277)	(−7.146)	(−6.272)	(−6.135)	(−8.158)
DummyChaebol	0.160 ***	−0.047 ***	0.376 ***	0.107 ***	0.027	−0.028	0.200 ***	0.074 ***
	(7.621)	(−2.293)	(9.817)	(5.023)	(1.506)	(−1.581)	(5.700)	(3.990)
Ln. Asset_Intensity	−0.024 ***	−0.028 ***	−0.018	−0.028 ***	−0.087 ***	−0.079 ***	−0.166 ***	−0.089 ***
	(−3.150)	(−3.741)	(−1.265)	(−3.588)	(−8.034)	(−7.464)	(−7.761)	(−8.218)
Ln. Employee _Intensity	0.106 ***	0.117 ***	0.118 ***	0.110 ***	0.021	0.023 *	−0.009	0.019
	(10.985)	(12.537)	(6.594)	(11.410)	(1.573)	(1.766)	(−0.345)	(1.418)
Size	0.002	−0.021 ***	0.015	−0.007	−0.027 ***	−0.031 ***	−0.017	−0.024 ***
	(0.414)	(−3.690)	(1.407)	(−1.248)	(−4.111)	(−4.810)	(−1.307)	(−3.571)
Constant	3.334 ***	3.787 ***	3.751 ***	3.555 ***	2.259 ***	2.307 ***	1.975 ***	2.260 ***
	(16.247)	(19.231)	(9.945)	(17.448)	(6.960)	(7.281)	(3.059)	(6.917)
Firm Fixed Effects (dummy variables)	No	No	No	No	Yes	Yes	Yes	Yes
Year Fixed Effects (dummy variables)	No	No	No	No	Yes	Yes	Yes	Yes
R-squared	0.168	0.218	0.144	0.161	0.702	0.716	0.645	0.699
Adjusted R-squared	0.167	0.217	0.142	0.160	0.672	0.687	0.608	0.668
F-statistic	138.262 ***	190.238 ***	114.628 ***	131.110 ***	22.750 ***	24.343 ***	17.472 ***	22.366 ***
Prob(F-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Beta corresponds to the coefficient estimates. Numbers in parentheses are t-statistics; ***, and *, indicating statistical significance at the 1%, and 10% levels, respectively.

Table 4 reports the effect of dividend policy on firm value with market-to book as the proxy for market performance. In the Pooled OLS model, a significant negative association emerges between dividend policy and the market-to-book ratio (Coeff.: −0.225 ***, t-stat: −6.988). However, the fixed effect model reveals a positive relationship, indicating a reversal of the negative association observed in the Pooled OLS model (Coeff.: 0.220 ***, t-stat: 6.982). The sign reversal implies that there are unobserved firm-specific factors influencing the relationship, suggesting that the initial negative association in the Pooled OLS model might be spurious, influenced by unobserved factors, while the fixed effect model, accounting for these factors, suggests a positive association between dividend policy and the market-to-book ratio. This implies that firms with certain characteristics, not captured by the observed variables, are likely to adopt a dividend policy, and these characteristics are positively related to firm value. Cash dividend payment in Panel A with a coefficient of 31.671 (t-statistic = 17.641), positively impacting the market-to-book ratio, is statistically significant at a 1% level. Panel B, with a coefficient of 29.167 (t-statistic = 16.036), positively impacts the market-to-book ratio at a 1% statistical significance level. Dividend yield in Panels A and B negatively impact the market-to-book ratio with a coefficient of −22.473 (t-statistic of −20.621) and −12.209 (t-statistic of −11.498), which are statistically significant at a 1% level, respectively. The dividend payout ratio has an insignificant impact in Panels A and B. In both the Pooled OLS and fixed effect models, the debt ratio has a constant and significant positive relationship with the market-to-book ratio (coefficients vary from 0.308 to 0.663), showing that it improves firm value. Free cash flow has a significant positive connection in the Pooled OLS model but loses significance in the fixed effect model (coefficients range from 0.306 to 1.994). In both models, ownership concentration has a

robust and significant negative relationship with the market-to-book ratio (coefficients range from −0.009 to −0.010), demonstrating that higher ownership concentration is associated with lower company value. In both models, being a Chaebol is significantly associated with a higher market-to-book ratio (coefficients range from 0.073 to 0.300), showing the importance of Chaebol status on business value. Asset intensity has a consistently significant negative relationship with the market-to-book ratio in both models (coefficients range from −0.030 to −0.139), indicating the impact of asset intensity on company value. Employee intensity has a significant positive connection with the market-to-book ratio in the Pooled OLS model but loses significance in the fixed effect model (coefficients around 0.040 to 0.186), indicating that its influence may vary when firm-specific effects are taken into consideration. Firm size has no significant association with the market-to-book ratio in the Pooled OLS model but becomes negatively significant in the fixed effect model (coefficients range from −0.004 to −0.044), implying the varied impact of firm size on firm value.

Table 4. Effect of dividend policy on firm value (market-to-book).

Panel A (Dependent Variable: Market-to-Book) Pooled OLS					**Panel B (Dependent Variable: Market-to-Book) Fixed Effect**			
	1	2	3	4	1	2	3	4
Variable	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)
Dividend Policy	−0.225 ***				0.220 ***			
	(−6.988)				(6.982)			
Cash Dividend Payment		31.671 ***				29.167 ***		
		(17.641)				(16.036)		
Dividend Yield			−22.473 ***				−12.209 ***	
			(−20.621)				(−11.498)	
Dividend Payout Ratio				−0.057				−0.023
				(−1.065)				(−0.528)
Debt Ratio	0.308 ***	0.913 ***	0.162 ***	0.463 ***	0.798 ***	0.999 ***	0.512 ***	0.663 ***
	(4.156)	(12.537)	(2.333)	(6.493)	(7.897)	(10.039)	(5.145)	(6.627)
Free Cash Flow	1.702 ***	0.475 ***	1.994 ***	1.487 ***	0.306 *	0.041	0.478 ***	0.343 **
	(7.560)	(2.110)	(9.188)	(6.637)	(1.724)	(0.233)	(2.707)	(1.920)
Own. Conc.	−0.009 ***	−0.005 ***	−0.011 ***	−0.008 ***	−0.010 ***	−0.008 ***	−0.012 ***	−0.011 ***
	(−9.500)	(−5.130)	(−11.764)	(−8.253)	(−7.182)	(−6.357)	(−8.757)	(−8.138)
DummyChaebol	0.300 ***	−0.040	0.461 ***	0.219 ***	0.073 ***	−0.022 ***	0.251 ***	0.155 ***
	(8.013)	(−1.095)	(12.865)	(5.720)	(2.175)	(−0.679)	(7.708)	(4.517)
Ln. Asset Intensity	−0.030 ***	−0.037 ***	−0.032 ***	−0.035 ***	−0.139 ***	−0.125 ***	−0.141 ***	−0.143 ***
	(−2.180)	(−2.723)	(−2.434)	(−2.545)	(−6.936)	(−6.375)	(−7.100)	(−7.115)
Ln. Employee Intensity	0.186 ***	0.205 ***	0.149 ***	0.193 ***	0.040	0.044 *	0.023	0.037
	(10.797)	(12.180)	(8.883)	(11.189)	(1.578)	(1.754)	(0.921)	(1.448)
Size	−0.004	−0.042 ***	−0.004	−0.021 **	−0.044 ***	−0.051 ***	−0.028 **	−0.038 ***
	(−0.348)	(−4.216)	(−0.357)	(−1.997)	(−3.600)	(−4.231)	(−2.269)	(−3.113)
Constant	5.273 ***	6.041 ***	4.705 ***	5.659 ***	3.063 ***	3.145 ***	2.711 ***	3.074 ***
	(14.383)	(17.045)	(13.310)	(15.549)	(5.080)	(5.323)	(4.528)	(5.068)

Firm Fixed (dummy variables)	No	No	No	No	Yes	Yes	Yes	Yes
Year Fixed (dummy variables)	No	No	No	No	Yes	Yes	Yes	Yes
R-squared	0.060	0.103	0.120	0.052	0.636	0.651	0.642	0.633
Adjusted R-squared	0.059	0.101	0.119	0.050	0.598	0.615	0.605	0.595
F-statistic	43.540 ***	78.115 ***	93.145 ***	37.254 ***	16.853 ***	17.955 ***	17.294 ***	16.597 ***
Prob(F-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Beta corresponds to the coefficient estimates. Numbers in parentheses are t-statistics; ***,**, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

4.4. Discussion

The observed trend in the relationship between dividend policy and firm value, as measured by Tobin's Q and the market-to-book ratio, displays noteworthy patterns. The Pooled OLS model consistently finds a negative relationship between dividend policy and the market-to-book ratio (Coeff.: −0.225 ***, t-stat: −6.988), replicating Tobin's Q findings. The fixed effect model, on the other hand, reveals a notable reversal, implying that unobserved firm-specific factors may impact this association. The positive connection in the fixed effect model (Coeff.: 0.220 ***, t-stat: 6.982) suggests that firms that adopt a dividend policy may have specific qualities that are positively related to company value that are not sufficiently reflected by observed variables. This result shows the significance of accounting for specific company effects when evaluating the impact of dividend policy on firm value in the Korean market.

Analyzing specific dividend policy proxies deepens the account. Cash dividend payments consistently have a positive impact on Tobin's Q and the market-to-book ratio in both models, indicating how significant they are in increasing company worth. An observed negative and significant effect of dividend yield on firm value in the full study sample suggests that, on average, an increase in the dividend yield ratio is associated with a decrease in firm value. This implies that, for the overall sample, a higher proportion of dividends relative to the stock price may be viewed unfavorably by investors, impacting the market valuation negatively. While the dividend payout ratio is negative, it loses statistical significance in both models. This evidence highlights such agency issues between managers and stockholders. The consistent negative relationship between dividend yield and firm value reveals potential agency issues inherent in financial signaling and future prospects. This striking trend highlights three major agency issues. First, Korean firms with greater dividend yields, indicating financial instability, suffer lower valuations under information asymmetry and adverse selection, showing management's difficulty in convincing investors about future growth in the face of information asymmetry. Second, within managerial entrenchment, the negative connection means that managers, particularly in non-Chaebol enterprises, fight dividends, putting personal interests over shareholder wealth and potentially undermining firm value. Third, agency costs and misalignment demonstrate a persistent negative effect associated with managers withholding dividends, saving capital for non-value-enhancing activities, and leading to misalignment with shareholder interests (Jensen and Meckling 1976); (Wang 2006); (Stulz 1990); Lee (2022).

In Table 5, the result of regression analysis testing the effect of dividend policy on firm performance (return on assets) is presented. In Pooled OLS (Panel A) Model 1, the dependent variable is the return on assets (also known as ROA), while dividend policy is the independent variable of interest. The coefficient is 0.031 ***, and the t-statistic is (19.918). This evidence shows that the coefficient for the dividend policy variable is statistically significant at the 1% level. This suggests a positive relationship between dividend policy and ROA. When compared to the fixed effects model (Panel B Model 1), we observe

that the coefficient is 0.024 *** and the t-statistic is (12.161). In the fixed effects model, the dividend policy coefficient stays statistically significant at the 1% level. The minor decrease in the coefficient implies that the fixed effects model accommodates individual differences. In Pooled OLS (Panel A) Model 2, the dependent variable remains return on assets (ROA), while dividend payment in cash is the independent variable. The coefficient is 2.163 ***, and the t-statistic is (25.091). The cash dividend payment coefficient in Model 2 is statistically significant at the 1% level, indicating a large positive influence on ROA. When compared to the fixed effects model (Panel B Model 2), the coefficient is 2.063 ***, and the t-statistic is (17.779). In the fixed effects model, the coefficient for cash dividend payment remained highly significant at the 1% level, indicating the robustness of the positive relationship with ROA. In Pooled OLS (Panel A) Model 3, the dependent variable is ROA (return on assets), while dividend yield is the independent variable. The coefficient is 0.707 ***, and the t-statistic is (12.861). At the 1% significance level, Model 3 demonstrates a statistically significant positive relationship between dividend yield and ROA. When compared to the fixed effects model (Panel B Model 3), the coefficient is 0.599 ***, and the t-statistic is (8.751). The positive relationship between dividend yield and ROA remains significant in the fixed effects model at the 1% level but with a slightly decreased coefficient. Return on assets (ROA) is the dependent variable in Model 4, Pooled OLS (Panel A), whereas the dividend payout ratio is the independent variable. Model 4 demonstrates a statistically significant positive correlation between the dividend payout ratio and ROA at the 1% significance level, with a coefficient of 0.010 *** and t-statistic of 3.807. When compared to the fixed effects model (Panel B Model 4), the coefficient is −0.004 and the t-statistic is (−1.552). When firm-specific factors are taken into account, the relationship between the dividend payout ratio and ROA turns negative and statistically insignificant at the 12% level in the fixed effects model. Looking at the control variables in the Pooled OLS vs. the fixed effects model, we found that the debt ratio in the Pooled OLS (Panel A) has a coefficient range (Models 1 to 4) of −0.083 *** to −0.055 *** and a t-statistic of −23.516 to −15.668. The coefficients in Models 1 to 4 range from −0.116 *** to −0.092 *** in the fixed effects (Panel B), whereas the t-statistic ranges from −18.035 to −14.429. In comparison, the debt ratio consistently demonstrates a strong negative relationship with ROA across both Pooled OLS and fixed effects models, with slightly bigger coefficients in the fixed effects model. The negative effect suggests that excessive leverage reduces the firm's performance with specific reference to its return on assets. Free cash flow in Pooled OLS (Panel A) has coefficients (Models 1 to 4) ranging from 0.301 *** to 0.368 *** and t-statistics ranging from 27.902 to 33.364. Equally, the coefficients in Models 1 to 4 range from 0.217 *** to 0.238 ***, while the t-statistic ranges from 19.446 to 20.799 in the fixed effects (Panel B). In both the Pooled OLS and fixed effects estimations, free cash flow has a positive and statistically significant relationship with ROA, with identical magnitudes. The result suggests that firms with augmented cash generation are associated with higher firm performance with respect to return on assets. Ownership concentration (Own. Conc.) in Pooled OLS (Panel A) has coefficients in Models 1 to 4 that range from 0.00016 *** to 0.00033 *** and t-statistics from 3.420 to 7.327, while in the fixed effects (Panel B), the coefficients in Models 1 to 4 range from 0.00018 *** to 0.00037 ***, and t-statistics range from 2.020 to 4.408. These results indicate that ownership concentration has a consistent positive correlation with ROA in both Pooled OLS and fixed effects models. DummyChaebol in the Pooled OLS (Panel A) has coefficients in Models 1 to 4 that range from −0.008 *** to 0.006 ***, and the t-statistic ranges from −4.318 to 3.188, while in the fixed effects (Panel B), we observe coefficients in Models 1 to 4 ranging from −0.007 *** to 0.007 *** and t-statistics ranging from −3.262 to 2.960. DummyChaebol exhibits varied relationships with ROA in both models, with changes in significant levels among models. The evidence from DummyChaebol in Pooled OLS (Panel A) coefficients ranging from −0.008 to 0.006 provides some insights. The negative coefficients indicate a probable detrimental influence on ROA for enterprises linked with Chaebol conglomerates. The different coefficients across models suggest that the association between Chaebol affiliation and ROA is model dependent. T-statistics

range from −4.318 to 3.188. The continuously high absolute values of t-statistics reflect the statistical importance of the observed correlations. DummyChaebol in fixed effects (Panel B) has coefficients ranging from −0.007 to 0.007. The negative coefficients remain, indicating a probable negative connection with ROA. The association varies between models, as with Pooled OLS. T-statistics range from −3.262 to 2.960. The absolute t-statistics remain rather high, indicating the statistical significance of the observed connections. Asset intensity (Ln) in Pooled OLS (Panel A) has coefficients in Models 1 to 4 ranging from −0.005 *** to −0.004 *** and t-statistics ranging from −7.275 to −5.970. In the fixed effects (Panel B), asset intensity has coefficients in Models 1 to 4 ranging from −0.007 *** to −0.006 ***, and t-statistics ranging from −5.421 to −4.456. In both the Pooled OLS and fixed effects models, asset intensity displays a consistently negative association with ROA. Employee intensity (Ln) in Pooled OLS (Panel A) has a coefficient in Models 1 to 4 ranging from −0.007 *** to −0.006 ***, and a t-statistic ranging from −7.980 to −6.526. In the fixed effects (Panel B), employee intensity has coefficients in Models 1 to 4 ranging from −0.014 *** to −0.014 *** and t-statistics ranging from −8.736 to −8.436. Employee intensity has a consistently negative relationship with ROA in both Pooled OLS and fixed effects models. Size in Pooled OLS (Panel A) has coefficients in Models 1 to 4 ranging from 0.002 to 0.004 *** and t-statistics ranging from 4.120 to 8.592. In the fixed effects (Panel B), the coefficients in Models 1 to 4 range from 0.0005 to 0.001 ***, with t-statistics ranging from 0.646 to 1.761. Size has a positive connection with ROA in both Pooled OLS and fixed effects models, with differing levels of significance. Considering the model fitness variables in Pooled OLS, R-squared explains between 34.8% and 41.4%, whereas in the fixed effects model, it explains between 57.2% and 59.7% of the variation in ROA. R-squared and adjusted R-squared in the fixed effects model often have higher values, indicating superior goodness- of fit. However, the Pooled OLS models have higher F-statistics, indicating better overall model fit. Considering the Prob(F-statistic), all models have extremely significant Prob(F-statistic) values, demonstrating overall model significance (Stulz 1990); (Jensen and Meckling 1976).

Table 5. Effect of dividend policy on firm performance (return on assets).

Panel A (Dependent Variable: Return on Assets) Pooled OLS					**Panel B (Dependent Variable: Return on Assets) Fixed Effect**			
	1	2	3	4	1	2	3	4
Variables	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)
Dividend Policy	0.031 ***				0.024 ***			
	(19.918)				(12.161)			
Cash Dividend Payment		2.163 ***				2.063 ***		
		(25.091)				(17.779)		
Dividend Yield			0.707 ***				0.599 ***	
			(12.861)				(8.751)	
Dividend Payout Ratio				0.010 ***				−0.004
				(3.807)				(−1.552)
Debt Ratio	−0.062 ***	−0.055 ***	−0.075 ***	−0.083 ***	−0.101 ***	−0.092 ***	−0.107 ***	−0.116 ***
	(−17.477)	(−15.668)	(−21.361)	(−23.516)	(−15.657)	(−14.429)	(−16.743)	(−18.035)
Free Cash Flow	0.339 ***	0.301 ***	0.354 ***	0.368 ***	0.234 ***	0.217 ***	0.232 ***	0.238 ***
	(31.491)	(27.902)	(32.294)	(33.364)	(20.764)	(19.446)	(20.398)	(20.799)
Own. Conc.	0.00032 ***	0.00033 ***	0.00023 ***	0.00016 ***	0.00033 ***	0.00037 ***	0.00023 ***	0.00018 ***

	(6.848)	(7.327)	(4.820)	(3.420)	(3.837)	(4.408)	(2.635)	(2.020)
DummyChaebol	−0.004 ***	−0.008 ***	0.001	0.006 ***	−0.003 ***	−0.007 ***	0.0001	0.007 ***
	(−2.474)	(−4.318)	(0.429)	(3.188)	(−1.466)	(−3.262)	(0.071)	(2.960)
Ln. Asset Intensity	−0.005 ***	−0.004 ***	−0.004 ***	−0.004 ***	−0.006 ***	−0.006 ***	−0.007 ***	−0.007 ***
	(−7.275)	(−5.970)	(−5.974)	(−6.048)	(−5.020)	(−4.456)	(−5.421)	(−5.320)
Ln. Employee Intensity	−0.006 ***	−0.006 ***	−0.006 ***	−0.007 ***	−0.014 ***	−0.014 ***	−0.014 ***	−0.014 ***
	(−7.070)	(−7.722)	(−6.526)	(−7.980)	(−8.665)	(−8.736)	(−8.436)	(−8.729)
Size	0.002 ***	0.003 ***	0.004 ***	0.004 ***	0.001	0.0005	0.001	0.001
	(4.120)	(6.208)	(7.789)	(8.592)	(0.943)	(0.646)	(1.086)	(1.761)
Constant	−0.166 ***	−0.196 ***	−5.974 ***	−0.218 ***	−0.271 ***	−0.265 ***	−0.254 ***	−0.269 ***
	(−9.460)	(−11.489)	(−10.659)	(−12.154)	(−7.073)	(−7.038)	(−6.582)	(−6.903)
Firm Fixed (dummy variables)	No	No	No	No	Yes	Yes	Yes	Yes
Year Fixed (dummy variables)	No	No	No	No	Yes	Yes	Yes	Yes
R-squared	0.391	0.414	0.366	0.348	0.584	0.597	0.578	0.572
Adjusted R-squared	0.390	0.413	0.365	0.347	0.541	0.556	0.535	0.528
F-statistic	438.596 ***	483.139 ***	394.340 ***	365.466 ***	13.538 ***	14.301 ***	13.215 ***	12.879 ***
Prob(F-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Beta corresponds to the coefficient estimates. Numbers in parentheses are t-statistics; *** indicating statistical significance at the 1% level.

In Table 6, the result of regression analysis testing the effect of dividend policy on firm performance (return on equity) is presented. In Model 1, dividend policy (Pooled OLS) has a coefficient of 0.0566 *** and a t-statistic = 19.0833, whereas in the fixed effects estimation, the coefficient is 0.0461 *** and the t-statistic = 11.7037.

Table 6. Effect of dividend policy on firm performance (return on equity).

Panel A (Dependent Variable: Return on Equity) Pooled OLS					**Panel B (Dependent Variable: Return on Equity) Fixed Effect**			
	1	2	3	4	1	2	3	4
Variables	Coeff.(t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)
Dividend Policy	0.0566 ***				0.0461 ***			
	(19.0833)				(11.7037)			
Cash Dividend Payment		3.1360 ***				3.0494 ***		
		(18.4558)				(13.1793)		
Dividend Yield			1.1459 ***				0.9368 ***	
			(10.7880)				(6.9333)	
Dividend Payout Ratio				0.0238 ***				0.0018
				(4.7007)				(0.3255)
Debt Ratio	−0.0577 ***	−0.0565 ***	−0.0839 ***	−0.0948 ***	−0.1545 ***	−0.1473 ***	−0.1700 ***	−0.1816 ***
	(−8.4533)	(−8.2024)	(−12.3980)	(−14.0508)	(−12.2143)	(−11.6338)	(−13.4335)	(−14.3786)
Free Cash Flow	0.5251 ***	0.4826 ***	0.5554 ***	0.5777 ***	0.3827 ***	0.3591 ***	0.3808 ***	0.3912 ***

	(25.2692)	(22.6619)	(26.2525)	(27.2323)	(17.2196)	(16.1262)	(16.9572)	(17.3637)
Own. Conc.	0.0007 ***	0.0007 ***	0.0005 ***	0.0005 ***	0.0008 ***	0.0008 ***	0.0006 ***	0.0005 ***
	(7.9865)	(7.3901)	(5.7691)	(4.8787)	(4.5682)	(4.6228)	(3.3384)	(3.0283)
DummyChaebol	−0.0090 ***	−0.0082 **	0.0025	0.0087 **	−0.0082 **	−0.0102 **	−0.0004	0.0070 *
	(−2.6035)	(−2.3798)	(0.7120)	(2.4168)	(−1.9701)	(−2.4556)	(−0.0878)	(1.6280)
Ln. Asset Intensity	−0.0075 ***	−0.0058 ***	−0.0060 ***	−0.0064 ***	−0.0135 ***	−0.0125 ***	−0.0145 ***	−0.0143 ***
	(−5.8776)	(−4.5116)	(−4.6185)	(−4.8648)	(−5.3690)	(−4.9833)	(−5.7277)	(−5.6343)
Ln. Employee Intensity	−0.0083 ***	−0.0093 ***	−0.0081 ***	−0.0100 ***	−0.0202 ***	−0.0202 ***	−0.0199 ***	−0.0210 ***
	(−5.2313)	(−5.8783)	(−4.9410)	(−6.1255)	(−6.3834)	(−6.4057)	(−6.2351)	(−6.5358)
Size	0.0029 ***	0.0052 ***	0.0064 ***	0.0071 ***	0.0008	0.0007	0.0012	0.0020
	(3.0199)	(5.4846)	(6.6502)	(7.2806)	(0.5225)	(0.4683)	(0.7750)	(1.3007)
Constant	−0.2679 ***	−0.3326 ***	−0.3195 ***	−0.3626 ***	−0.4004 ***	−0.3922 ***	−0.3745 ***	−0.4023 ***
	(−7.9188)	(−9.9168)	(−9.2731)	(−10.5207)	(−5.3092)	(−5.2188)	(−4.9149)	(−5.2564)
Firm Fixed (dummy variables)	No	No	No	No	Yes	Yes	Yes	Yes
Year Fixed (dummy variables)	No	No	No	No	Yes	Yes	Yes	Yes
R-squared	0.2923	0.2894	0.2609	0.2482	0.4968	0.5004	0.4879	0.4829
Adjusted R-squared	0.2912	0.2883	0.2598	0.2471	0.4446	0.4485	0.4347	0.4292
F-statistic	282.2895 ***	278.3891 ***	241.2577 ***	225.6452 ***	9.5119 ***	9.6497 ***	9.1780 ***	8.9979 ***
Prob(F-statistic)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: Beta corresponds to the coefficient estimates. Numbers in parentheses are t-statistics, ***, **, and * indicating statistical significance at the 1%, 5%, and 10% levels, respectively.

The evidence in both models shows a positive association between dividend policy and ROE. Pooled OLS suggests a stronger positive effect (larger coefficient and higher t-statistic) compared to fixed effects, indicating that considering firm-specific effects diminishes the observed impact. In Model 2, cash dividend payment in the OLS estimation has a coefficient = 3.1360 *** and a t-statistic = 18.4558, while in the fixed effects estimation, the coefficient = 3.0494 *** and the t-statistic = 13.1793. This result suggests that both models show a positive association between cash dividend payment and ROE. The impact is slightly lower in the fixed effects model, suggesting that firm-specific effects moderate the relationship. In Model 3, dividend yield under d OLS has a coefficient = 1.1459 *** and a t-statistic = 10.7880, whereas in the fixed effect model, the coefficient = 0.9368 *** and the t-statistic = 6.9333. This means that both models indicate a positive association between dividend yield and ROE. The fixed effects model equally shows a lower impact, suggesting that firm-specific factors moderate the relationship. In Model 4, the dividend payout ratio in OLS has a coefficient = 0.0238 *** and a t-statistic = 4.7007, and in the fixed effects, the coefficient = 0.0018 and the t-statistic = 0.3255. Both models suggest a positive association, but the impact is more pronounced in the Pooled OLS model. With the t-statistics exceeding the conventional significance levels, the fixed effects model indicates a weaker relationship after accounting for firm-specific effects. This result reflects Rozeff's (1982) and Easterbrook's (1984) opinion that dividends play a vital role in addressing the agency issue (Faccio et al. 2001).

In Table 7, the result of regression analysis testing the effect of dividend policy on firm performance (return on sales) is presented. The result suggests a highly significant positive association of "DIVIDEND POLICY" with return on sales (ROS) in both estimations with coefficients of 0.0651 (t-statistic = 15.1575) and 0.0399 (t-statistic of 7.6866) in

Panel A (Pooled OLS) and Panel B (fixed effects) models, respectively. In Model 2, cash dividend payment with coefficients of 4.6423 and t-statistics = 19.1589 and 3.2707 and t-statistics = 10.7604 in OLS and fixed effect estimations, respectively, indicate a highly significant positive association between cash dividend payment and ROS. Firms with higher cash dividend payments tend to have higher ROS. Dividend yield in Model 3 has a coefficient of 1.4876 and a t = 9.7803 and 0.9804 and a t = 5.5454 in the OLS and fixed effect estimations, indicating a significant positive relationship with ROS. Model 4, Panel A and B reveal that the dividend payout ratio has a coefficient of 0.0159 (t = 2.1878) and 0.0159 (t = 2.1878), indicating a significant positive relationship with ROS. The positive effects of all dividend proxies (dividend policy, cash dividend payment, dividend yield, dividend payout ratio) on return on sales (ROS) in both Panel A and Panel B across Models 1 to 4 suggest that, on average, firms that follow dividend policies pay cash dividends and have higher dividend yields, and payout ratios have higher return on sales. Under the OLS estimation, in the second model, DummyChaebol with a negative coefficient (-0.0094) is statistically significant at the 10% level. This suggests a modest negative impact of being a Chaebol firm on Return On Sales. Considering firm specific characteristics, under LSDV estimation, in model 4, DummyChaebol with the positive coefficient of 0.0149 is statistically significant at the 1% level, indicating a notable positive impact of being a Chaebol firm on Return On Sales. All the other control variables and model fitness show consistent effects, like the patterns observed in the case of ROA and ROE. Our empirical evidence and results from our investigations of ROA, ROE, and ROS suggest consistency with signaling theory, which conveys that dividend policies can act as indicators of corporate success and value. The differences in strength and statistical significance levels among the proxies show that different components of dividend policy contribute significantly to firm performance, according to Bhattacharya (1979), John and Williams (1985), and Miller and Rock (1985).

Additionally, cash dividend payment, dividend yield, and the dividend payout ratio exhibit highly significant positive relationships with ROS. Our empirical evidence aligns with signaling theory, suggesting that dividend policies serve as indicators of corporate success and value. These results support our first hypothesis that dividend policy impacts firm performance and value significantly.

Table 7. Effect of dividend policy on firm performance (return on sales).

Panel A (Dependent Variable: Return on Sales) Pooled OLS					**Panel B (Dependent Variable: Return on Sales) Fixed Effect**			
	1	2	3	4	1	2	3	4
Variable	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)
Dividend Policy	0.0651 ***				0.0399 ***			
	(15.1575)				(7.6866)			
Cash Dividend Payment		4.6423 ***				3.2707 ***		
		(19.1589)				(10.7604)		
Dividend Yield			1.4876 ***				0.9804 ***	
			(9.7803)				(5.5454)	
Dividend Payout Ratio				0.0711 ***				0.0159 ***
				(9.8908)				(2.1878)
Debt Ratio	−0.1002 ***	−0.0844 ***	−0.1279 ***	−0.1335 ***	−0.1860 ***	−0.1726 ***	−0.1973 ***	−0.2071 ***
	(−10.1458)	(−8.5918)	(−13.1950)	(−13.9373)	(−11.1745)	(−10.3784)	(−11.9135)	(−12.5560)
Free Cash Flow	0.6104 ***	0.5287 ***	0.6413 ***	0.6632 ***	0.3519 ***	0.3248 ***	0.3484 ***	0.3610 ***
	(20.3142)	(17.4090)	(21.1682)	(22.0245)	(12.0289)	(11.1056)	(11.8572)	(12.2738)

Own. Conc.	0.0006 ***	0.0006 ***	0.0004 ***	0.0005 ***	0.0008 ***	0.0008 ***	0.0006 ***	0.0006 ***
	(4.6377)	(4.9876)	(3.1119)	(3.4604)	(3.5142)	(3.8104)	(2.7661)	(2.7529)
DummyChaebol	−0.0023	−0.0094 *	0.0089 *	0.0053	0.0059	0.0005	0.0113 **	0.0149 ***
	(−0.4596)	(−1.8993)	(1.7810)	(1.0249)	(1.0777)	(0.0913)	(2.0781)	(2.6480)
Ln. Asset Intensity	0.0769 ***	0.0789 ***	0.0786 ***	0.0770 ***	0.0478 ***	0.0491 ***	0.0469 ***	0.0471 ***
	(41.6715)	(43.3833)	(42.1772)	(41.1126)	(14.4781)	(14.9228)	(14.1675)	(14.2048)
Ln. Employee Intensity	−0.0426 ***	−0.0434 ***	−0.0420 ***	−0.0439 ***	−0.0462 ***	−0.0460 ***	−0.0458 ***	−0.0471 ***
	(−18.5264)	(−19.1512)	(−17.9279)	(−18.8936)	(−11.0822)	(−11.1072)	(−10.9397)	(−11.2398)
Size	0.0003	0.0022	0.0042 ***	0.0046 ***	−0.0030	−0.0033	−0.0028	−0.0019
	(0.1952)	(1.6231)	(3.0041)	(3.3298)	(−1.4703)	(−1.6512)	(−1.3690)	(−0.9629)
Constant	−0.9034 ***	−0.9657 ***	−0.9553 ***	−1.0006 ***	−0.8209 ***	−0.8120 ***	−0.7936 ***	−0.8316 ***
	(−18.4667)	(−20.1902)	(−19.3628)	(−20.4516)	(−8.2685)	(−8.2239)	(−7.9605)	(−8.3216)
Firm Fixed (dummy variables)	No	No	No	No	Yes	Yes	Yes	Yes
Year Fixed (dummy variables)	No	No	No	No	Yes	Yes	Yes	Yes
R-squared	0.4390	0.4522	0.4255	0.4257	0.6695	0.6731	0.6676	0.6658
Adjusted R-squared	0.4382	0.4514	0.4246	0.4248	0.6351	0.6392	0.6331	0.6312
F-statistic	534.9007 ***	564.2621 ***	506.2281 ***	506.6930 ***	19.5134 ***	19.8426 ***	19.3490 ***	19.1982 ***
Prob(F-statistic)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: Beta corresponds to the coefficient estimates. Numbers in parentheses are t-statistics; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Tables 8–12 concurrently analyze the impact of four dividend policy proxies on firm value and performance indicators for designated Chaebol and non-Chaebol firms under alignment and entrenchment hypotheses. In Panel A of Table 8, focusing on Chaebol firms and utilizing Tobin's Q as the firm value proxy, positive coefficients for the dividend policy dummy, cash dividend payment, dividend yield, and the dividend payout ratio are 0.0425, 31.4857, 17.6897, and 0.1873, respectively. These findings indicate a favorable association with Tobin's Q, supporting the alignment hypothesis, signifying managerial interests aligning with shareholders. Similarly, in Panel A of Table 9, examining Chaebol firms with market-to-book as the firm value proxy, positive coefficients of 0.0965, 51.8581, 28.6259, and 0.2939 for the dividend policy dummy, cash dividend payment, dividend yield, and the dividend payout ratio, respectively, affirm the interest-alignment hypothesis. In Table 10, Panel A presents estimates for Chaebol firms using return on assets (ROA) as the firm performance proxy. The positive coefficients of 0.0228, 2.3368, 0.3871, and 0.0393 for the dividend policy dummy, cash dividend payment, dividend yield, and the dividend payout ratio, respectively, indicate alignment of managerial interest with shareholders. In Table 11, Panel A provides estimates for Chaebol firms using return on equity (ROE) as the firm performance proxy. The observed coefficients are as follows: 0.0414 for the dividend policy dummy, 3.3987 for cash dividend payment, 0.3683 for dividend yield, and 0.0637 for the dividend payout ratio. These positive coefficients collectively support the alignment of managerial interest with shareholders. Table 12, Panel A also offers estimates for Chaebol firms, focusing on return on sales (ROS) as the firm performance measure. Consistent with patterns observed in ROA and ROE, significant positive coefficients are reported: 0.0437 for the dividend policy dummy, 3.7351 for cash dividend payment, 0.4770 for dividend yield, and 0.0805 for the dividend payout ratio. These findings reinforce the alignment of managerial interests with those of the shareholders. However, in Panel B of Table 8 for non-Chaebol firms, an unexpected reversal of effects is evident, with

negative coefficients (dividend policy dummy: -0.0655, cash dividend payment: -17.8617, dividend yield: -12.0933, dividend payout ratio: -0.0130) associated with Tobin's Q. This surprising outcome suggests a shift towards the managerial entrenchment hypothesis, indicating a potential non-alignment of managerial interests with shareholders and a consequent decrease in market value. Similarly, in Panel B of Table 9 for non-Chaebol firms, a reversal is observed with negative coefficients (-0.2896 for dividend policy dummy, -27.6540 for cash dividend payment, -21.5589 for dividend yield, -0.0575 for dividend payout ratio) in relation to market-to-book (MTB) as the firm value proxy. This unexpected reversal aligns with the entrenchment hypothesis, signifying a divergence of managerial and shareholder interests and implying a reduction in market value. These surprise findings in Panel B highlight the multifaceted dynamics of dividend policy effects on firm value among non-Chaebol enterprises, giving critical context for the research findings.

Table 8. Effect of dividend policy on Tobin's Q (Chaebol vs. non-Chaebol firms).

Panel A (Dependent Variable: Tobin's Q) Chaebol Firms: n = 2375					**Panel B (Dependent Variable: Tobin's Q) Non-Chaebol Firms: n = 3103**			
	1	2	3	4	1	2	3	4
Variables	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)
Dividend Policy	0.0425 ***				(−0.0655) ***			
	(9.8654)				(−3.0207)			
Cash Dividend Payment		31.4857 ***				−17.8617 ***		
		(17.1094)				(−13.765)		
Dividend Yield			17.6897 ***				−12.0933 ***	
			(14.4223)				(−15.2515)	
Dividend Payout Ratio				0.1873 ***				−0.013
				(3.076)				(−0.3553)
Debt Ratio	−0.901608 ***	−0.4395 ***	−0.7159 ***	−0.7621 ***	−0.76545 ***	−0.6358 ***	−1.1336 ***	−0.9318 ***
	(−14.23265)	(−4.8880)	(−7.8902)	(−7.7741)	(−10.79497)	(−11.6473)	(−21.9064)	(−17.6073)
Free Cash Flow	0.9430 ***	0.8638 ***	2.8423 ***	2.3770 ***	0.3899 ***	0.5080 ***	1.4943 ***	1.1715 ***
	(5.1860)	(3.1524)	(10.4781)	(8.1612)	(3.0777)	(2.9208)	(8.9199)	(6.7797)
Own. Conc.	0.003	0.0018	0.0005	0.0007	0.0436 ***	−0.0164 ***	−0.0122 ***	−0.0150 ***
	2.1031	−1.2931	−0.3713	−0.4387	(−9.6188)	(−10.9564)	(−8.1726)	(−9.7276)
Ln. Asset Intensity	−0.0392 ***	0.0297	−0.0315 **	−0.012	−0.076271 ***	−0.0233 **	−0.0153	−0.018
	(−3.3617)	(1.9898)	(−2.0586)	(−0.7284)	(−5.5191)	(−2.3079)	(−1.5253)	(−1.7197)
Ln. Employee Intensity	0.07941 ***	0.0786 ***	0.0243	0.0671 ***	0.00307	0.1295 ***	0.1014 ***	0.1249 ***
	(5.5694)	(4.312)	(1.2797)	(3.3098)	(0.1656)	(10.1831)	(7.9729)	(9.5315)
Size	0.0101	0.0550 ***	0.0063	0.0446 ***	−0.0289 ***	−0.0329 ***	−0.002	−0.0171 **
	(1.1261)	(4.3994)	(0.4842)	(3.1913)	(−3.4443)	(−4.3539)	(−0.2640)	(−2.2081)
Constant	2.3326 ***	0.5057	1.5465 ***	0.9926 **	3.793154	4.6370 ***	3.6024 ***	4.3206 ***
	(7.1039)	(1.1501)	(3.4259)	(2.0146)	(14.0805)	(18.0984)	(13.9631)	(16.3777)
Firm Fixed (dummy variables)	No	No	No	No	No	No	No	No
Year Fixed (dummy variables)	No	No	No	No	No	No	No	No
R-squared	0.1513	0.3001	0.2573	0.1334	0.1682	0.2287	0.2387	0.181516
Adjusted R-squared	0.1492	0.2959	0.2529	0.1282	0.1666	0.227	0.237	0.1797
F-statistic	70.4088 ***	72.2705 ***	58.4142 ***	25.9461 ***	104.3575 ***	131.1020 ***	138.6298 ***	98.0546 ***

Prob(F-statistic)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: Beta corresponds to the coefficient estimates. The numbers in parentheses are t-statistics; *** and ** indicating statistical significance at the 1% and 5% levels, respectively.

Table 9. Effect of dividend policy on market-to-book (Chaebol vs. non-Chaebol firms).

Panel A (Dependent Variable: Market-to-Book) Chaebol Firms: n = 2375					**Panel B (Dependent Variable: Market-to-Book) Non-Chaebol Firms: n = 3103**			
	1	2	3	4	1	2	3	4
Variables	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)
Dividend Policy	0.0965 ***				−0.2896 ***			
	(2.1322)				(−7.2335)			
Cash Dividend Payment		51.8581 ***				−27.6540 ***		
		(16.8372)				(−11.9865)		
Dividend Yield			28.6159 ***				−21.5589 ***	
			(13.9104)				(−15.4114)	
Dividend Payout Ratio				0.2939 ***				−0.0575
				(2.8920)				(−0.8876)
Debt Ratio	0.3022 ***	1.0684 ***	0.6122 ***	0.5380 ***	0.1918 ***	0.8567 ***	0.0377	0.3873 ***
	(2.6213)	(7.0990)	(4.0230)	(3.2878)	(1.9730)	(8.8276)	(0.4128)	(4.1461)
Free Cash Flow	1.0938 ***	1.3494 ***	4.5922 ***	3.8357 ***	2.2615 ***	0.8211 ***	2.4248 ***	1.8622 ***
	(3.3049)	(2.9423)	(10.0935)	(7.8900)	(7.2681)	(2.6551)	(8.2046)	(6.1045)
Own. Conc.	0.0031	0.0032	0.0010	0.0013	0.0436 ***	−0.0261 ***	−0.0189 ***	−0.0238 ***
	(2.1033)	(1.3343)	(0.4252)	(0.4859)	(9.6188)	(−9.7716)	(−7.1535)	(−8.7138)
Ln. Asset Intensity	−0.0384 **	0.0728 ***	−0.0272	0.0045	−0.0179	−0.0408 **	−0.0277	−0.0314
	(−1.81055)	(2.9159)	(−1.0619)	(0.1628)	(−0.9728)	(−2.2724)	(−1.5636)	(−1.6965)
Ln. Employee Intensity	0.1290 ***	0.1424 ***	0.0543	0.1235 ***	0.2228 ***	0.2331 ***	0.1841 ***	0.2254 ***
	(4.9709)	(4.6672)	(1.7026)	(3.6504)	(9.5888)	(10.3105)	(8.2030)	(9.7457)
Size	0.0265 *	0.0941 ***	0.0149	0.0766 ***	−0.0227 ***	−0.0731 ***	−0.0216	−0.0479 ***
	(1.6289)	(4.4960)	(0.6794)	(3.2819)	(−1.6110)	(−5.4419)	(−1.6375)	(−3.5083)
Constant	2.8893 ***	0.3420	2.0468 ***	1.1619	6.3950 ***	7.8318 ***	6.0598 ***	7.3199 ***
	(4.8345)	(0.4648)	(2.7035)	(1.4128)	(13.5005)	(17.1927)	(13.3136)	(15.7177)
Firm Fixed (dummy variables)	No	No	No	No	No	No	No	No
Year Fixed (dummy variables)	No	No	No	No	No	No	No	No
R-squared	0.1513	0.2761	0.2287	0.1085	0.1682	0.1251	0.1497	0.0847
Adjusted R-squared	0.1492	0.2718	0.2241	0.1032	0.1666	0.1231	0.1478	0.0826
F-statistic	43.4075 ***	64.2927 ***	49.9735 ***	20.5155 ***	44.3525 ***	63.2021 ***	77.8439 ***	40.9068 ***
Prob(F-statistic)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: Beta corresponds to the coefficient estimates. Numbers in parentheses are t-statistics; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 10. Effect of dividend policy on ROA (Chaebol vs. non-Chaebol firms).

Panel A (Dependent Variable: Return on Assets) Chaebol Firms: n = 2375					**Panel B (Dependent Var: Return on Assets) Non-Chaebol Firms: n = 3103**			
	1	2	3	4	1	2	3	4
VARIABLE	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)
Dividend Policy	0.0228 ***				0.0336 ***			
	(10.7787)				(17.5385)			
Cash Dividend Payment		2.3368 ***				2.0901 ***		
		(27.9421)				(18.5820)		
Dividend Yield			0.3871 ***				0.7532 ***	
			(5.6239)				(10.5094)	
Dividend Payout Ratio				0.0393 ***				0.0151 ***
				(13.1400)				(4.6678)
Debt Ratio	−0.05041 ***	−0.0148 ***	−0.0388 ***	−0.0359 ***	−0.068375	−0.0606 ***	−0.0820 ***	−0.0903 ***
	(−9.3393)	(−3.6190)	(−7.6148)	(−7.4438)	−14.67382	(−12.8036)	(−17.5231)	(−19.3019)
Free Cash Flow	0.3045 ***	0.1260 ***	0.2208 ***	0.2168 ***	0.361031	0.3341 ***	0.3908 ***	0.4056 ***
	(19.6525)	(10.1154)	(14.5059)	(15.1418)	24.20913	(22.1591)	(25.8070)	(26.5467)
Own. Conc.	−0.0002 **	−0.0001	−0.0002 **	−0.0002 **	0.0436	0.0005 ***	0.0005 ***	0.0006 ***
	(2.1071)	(−1.2502)	(−2.0878)	(−2.4724)	9.6188	(4.0336)	(3.7366)	(4.6451)
Ln. Asset Intensity	−0.0069 ***	−0.0036 ***	−0.0058 ***	−0.0054 ***	−0.004037	−0.0035 ***	−0.0032 ***	−0.0035 ***
	(−6.8927)	(−5.2390)	(−6.7441)	(−6.6237)	−4.567514	(−4.0453)	(−3.4928)	(−3.7531)
Ln. Employee Intensity	−0.0078 ***	−0.0030 ***	−0.0028 ***	−0.0035 ***	−0.003494	−0.0041 ***	−0.0032 ***	−0.0044 ***
	(−6.4416)	(−3.5862)	(−2.6112)	(−3.5337)	−3.136409	(−3.7535)	(−2.7606)	(−3.8196)
Size	−0.0013 *	0.0011 **	0.0007	−0.0011	0.003869	0.0051 ***	0.0059 ***	0.0066 ***
	(−1.6940)	(1.8982)	(0.9100)	(−1.6038)	5.722466	(7.7453)	(8.7734)	(9.6581)
Constant	−0.1019 ***	−0.0739 ***	−0.0278	0.0276	−0.160963	−0.2103 ***	−0.2012 ***	−0.2375 ***
	(−3.6450)	(−3.6968)	(−1.0957)	(1.1398)	−7.090258	(−9.4677)	(−8.6270)	(−10.1815)
Firm Fixed (dummy variables)	No	No	No	No	No	No	No	No
Year Fixed (dummy variables)	No	No	No	No	No	No	No	No
R-squared	0.3202	0.5769	0.3153	0.3867	0.434962	0.4456	0.4050	0.3881
Adjusted R-squared	0.3185	0.5744	0.3112	0.3831	0.433867	0.4444	0.4037	0.3867
F-statistic	185.8949 ***	229.8492 ***	77.6276 ***	106.2848 ***	397.2125	355.4167 ***	300.9735 ***	280.4196 ***
Prob(F-statistic)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: Beta corresponds to the coefficient estimates. Numbers in parentheses are t-statistics; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 11. Effect of dividend policy on ROE (Chaebol vs. non-Chaebol firms).

Panel A (Dependent Variable: Return on Equity) Chaebol Firms: n = 2375					**Panel B (Dependent Variable: Return on Equity) Non-Chaebol Firms: n = 3103**			
	1	2	3	4	1	2	3	4
Variables	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)
Dividend Policy	0.0414 ***				0.0634 ***			
	(9.9580)				(17.3330)			
Cash Dividend Payment		3.3987 ***				2.9698 ***		
		(20.4250)				(13.5486)		
Dividend Yield			0.3683 ***				1.26269 ***	
			(2.9511)				(9.2241)	
Dividend Payout Ratio				0.0637 ***				0.0325 ***
				(11.6903)				(5.2749)
Debt Ratio	−0.0189 ***	0.0814 ***	0.0469 ***	0.0510 ***	−0.0837	−0.0848 ***	−0.0848 ***	−0.1238 ***
	(−1.7930)	(10.0070)	(5.0779)	(5.8173)	(−9.4348)	(−9.1986)	(−9.1986)	(−13.9233)
Free Cash Flow	0.4778 ***	0.1899 ***	0.3339 ***	0.3195 ***	0.5577 ***	0.5426 ***	0.5426 ***	0.6401 ***
	(15.7234)	(7.6659)	(12.0964)	(12.2574)	(19.6297)	(18.4686)	(18.4686)	(22.0454)
Own. Conc.	0.0003	0.0000	−0.0002	−0.0002	0.0335 ***	0.0012 ***	0.0012 ***	0.0013 ***
	(−1.1031)	(−0.2082)	(−1.0696)	(−1.3569)	(4.3188)	(4.5698)	(4.5698)	(4.9278)
Ln. Asset Intensity	−0.0091 ***	−0.0024 *	−0.0060 ***	−0.0049 ***	−0.0075 ***	−0.0063 ***	−0.0063 ***	−0.0066 ***
	(−4.6532)	(−1.8082)	(−3.8276)	(−3.3395)	(−4.4692)	(−3.6909)	(−3.6909)	(−3.7325)
Ln. Employee Intensity	−0.0118 ***	−0.0055 ***	−0.0057 ***	−0.0063 ***	−0.0045 **	−0.0059 ***	−0.0059 ***	−0.0061 ***
	(−4.9592)	(−3.3484)	(−2.9637)	(−3.4638)	(−2.0984)	(−2.7314)	(−2.7314)	(−2.7766)
Size	−0.0018	0.0006	−0.0003	−0.0027 **	0.0047 ***	0.0078 ***	0.0078 ***	0.0098 ***
	(−0.1935)	(0.5741)	(−0.2385)	(−2.1541)	(3.6536)	(6.1252)	(6.1252)	(7.5245)
Constant	−0.1887 ***	−0.1475 ***	−0.0769	0.0080	−0.2193 ***	−0.3300 ***	−0.3300 ***	−0.3621 ***
	(−3.4387)	(−3.7109)	(−1.6743)	(0.1820)	(−5.0690)	(−7.6252)	(−7.6252)	(−8.1702)
Firm Fixed (dummy variables)	No	No	No	No	No	No	No	No
Year Fixed (dummy variables)	No	No	No	No	No	No	No	No
R-squared	0.2041	0.4253	0.2278	0.3029	0.3459	0.3288	0.3288	0.2953
Adjusted R-squared	0.2021	0.4219	0.2232	0.2987	0.3446	0.3273	0.3273	0.2937
F-statistic	101.2121 ***	124.7523 ***	49.7359 ***	73.2349 ***	272.9332 ***	216.5724 ***	216.5724 ***	185.2820 ***
Prob(F-statistic)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: Beta corresponds to the coefficient estimates. Numbers in parentheses are t-statistics; ***, **, and * indicate statistical significance at the 1%,5%, and 10% levels, respectively.

Table 12. Effect of dividend policy on ROS (Chaebol vs. non-Chaebol firms).

Panel A (Dependent Variable: Return on Sales) Chaebol Firms: n = 2375					**Panel B (Dependent Variable: Return on Sales) Non-Chaebol Firms: n = 3103**			
	1	2	3	4	1	2	3	4
VARIABLE	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)
Dividend Policy	0.0437 ***				0.0776 ***			
	(7.7283)				(14.0397)			
Cash Dividend Payment		3.7351 ***				5.5709 ***		
		(12.7399)				(17.3091)		
Dividend Yield			0.4770 **				2.1047 ***	
			(2.3630)				(10.3257)	
Dividend Payout Ratio				0.0805 ***				0.0904 ***
				(8.9492)				(9.9214)
Debt Ratio	−0.0967 ***	−0.0355 **	−0.0736 ***	−0.0683 ***	−0.0986 ***	−0.0691 ***	−0.1244 ***	−0.1335 ***
	(−6.7196)	(−2.4803)	(−4.9280)	(−4.7151)	(−7.3484)	(−5.1005)	(−9.3513)	(−10.1639)
Free Cash Flow	0.4949 ***	0.1433 ***	0.2993 ***	0.2814 ***	0.6919 ***	0.6027 ***	0.7511 ***	0.7745 ***
	(11.9806)	(3.2819)	(6.7035)	(6.5393)	(16.1154)	(13.9698)	(17.4415)	(18.0559)
Own. Conc.	0.0001	0.0000	−0.0002	−0.0002	0.0436	0.0002	0.0002	0.0004
	(−0.4031)	(−0.0930)	(−0.6911)	(−0.8897)	(0.6188)	(0.6109)	(0.4042)	(0.9484)
Ln. Asset Intensity	0.0720 ***	0.1033 ***	0.0996 ***	0.1008 ***	0.0783 ***	0.0789 ***	0.0799 ***	0.0774 ***
	(27.1785)	(43.4648)	(39.5484)	(41.3809)	(30.7728)	(31.4885)	(30.9706)	(29.7843)
Ln. Employee Intensity	−0.0459 ***	−0.0338 ***	−0.0338 ***	−0.0345 ***	−0.0383 ***	−0.0399 ***	−0.0372 ***	−0.0399 ***
	(−14.1587)	(−11.6247)	(−10.8085)	(−11.5290)	(−11.9354)	(−12.6570)	(−11.3619)	(−12.2790)
Size	−0.0076 ***	−0.0024	−0.0033	−0.0063 ***	0.0044 ***	0.0065 ***	0.0087 ***	0.0096 ***
	(−3.7271)	(−1.2006)	(−1.5443)	(−3.0723)	(2.2697)	(3.4825)	(4.5256)	(5.0124)
Constant	−0.7163 ***	−0.6238 ***	−0.5475 ***	−0.4399 ***	−0.9261 ***	−1.0153 ***	−0.9853 ***	−1.0582 ***
	(−9.6015)	(−8.9048)	(−7.3696)	(−6.0418)	(−14.1681)	(−15.9772)	(−14.8558)	(−16.1593)
Firm Fixed (dummy variables)	No	No	No	No	No	No	No	No
Year Fixed (dummy variables)	No	No	No	No	No	No	No	No
R-squared	0.4539	0.7642	0.7330	0.7488	0.4374	0.4549	0.4220	0.4205
Adjusted R-squared	0.4526	0.7628	0.7314	0.7473	0.4363	0.4536	0.4207	0.4192
F-statistic	328.1603 ***	546.2895 ***	462.8251 ***	502.5037 ***	401.1355 ***	368.9300 ***	322.8205 ***	320.8646 ***
Prob(F-statistic)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: Beta corresponds to the coefficient estimates. Numbers in parentheses are t-statistics; *** and **, indicating statistical significance at the 1% and 5% levels, respectively.

Table 13 provides an integrated analysis of the effect of various dividend policy measures on firm performance and value as captured earlier. Based on Table 13 above, the significantly positive effects of the four dividend policy proxies on Tobin's Q and market-to-book ratios in Chaebol firms emphasize the alignment of dividend policies with market valuation. This evidence supports the interest alignment hypothesis, suggesting that these conglomerates strategically use dividends to signal positive firm performance and enhance shareholder value. Conversely, for non-Chaebol firms, the significantly negative effects of the same dividend policy proxies on market performance metrics suggest a divergent dynamic. This supports the entrenchment hypothesis, indicating that these firms may opt to retain earnings for managerial entrenchment, potentially diminishing market value. On the accounting performance front, both Chaebol and non-Chaebol firms exhibit significantly positive effects of the four dividend policy proxies on ROA, ROE, and ROS. This aligns with the interest alignment hypothesis, emphasizing that dividend policies positively impact accounting outcomes in both business types. Non-Chaebol firms show a disparity with negative market performance and have positive accounting results. This suggests challenges in translating positive operational outcomes into improved market valuation. Possible reasons include a focus on managerial retention, investor preference for retained earnings, and industry-specific investor expectations, emphasizing the need to consider context and investor outlook in the non-Chaebol context. The second hypothesis of this study is supported by this result.

Table 13. Effect of dividend policy on firm performance and value.

	Chaebol Firms: n = 2375				**Non-Chaebol Firms: n = 3103**			
Independent Variables →	**Dividend Policy**	**Cash Dividend Payment**	**Dividend Yield**	**Dividend Payout Ratio**	**Dividend Policy**	**Cash Dividend Payment**	**Dividend Yield**	**Dividend Payout Ratio**
Dependent Variables ↓	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)
Tobin's Q	0.0425 ***	31.4857 ***	17.6897 ***	0.1873 ***	−0.0655 ***	−17.8617 ***	−12.0933 ***	−0.0130
	(9.8654)	(17.1094)	(14.4223)	(3.076)	(−3.0207)	(−13.7650)	(−15.2515)	(−0.3553)
Market-to-book	0.0965 ***	51.8581 ***	28.6159 ***	0.2939 ***	−0.2896 ***	−27.6540 ***	−21.5589 ***	−0.0575
	(2.1322)	(16.8372)	(13.9104)	(2.892)	(−7.2335)	(−11.9865)	(−15.4114)	(−0.8876)
Return On Assets	0.0228 ***	2.3368 ***	0.3871 ***	0.0393 ***	0.0336 ***	2.0901 ***	0.7532 ***	0.0151 ***
	(10.7787)	(27.9421)	(5.6239)	(13.14)	(17.5385)	(18.582)	(10.5094)	(4.6678)
Return On Equity	0.0414 ***	3.3987 ***	0.3683 ***	0.0637 ***	0.0634 ***	2.9698 ***	1.2627 ***	0.0325 ***
	(9.9580)	(20.425)	(2.9511)	(11.6903)	(17.3300)	(13.5486)	(9.2241)	(5.2749)
Return On Sales	0.0437 ***	3.7351 ***	0.4770 **	0.0805 ***	0.0776 ***	5.5709 ***	2.1047 ***	0.0904 ***
	(7.7283)	(12.7399)	(2.363)	(8.9492)	(14.0397)	(17.3091)	(10.3257)	(9.9214)

Note: Beta corresponds to the coefficient estimates. Numbers in parentheses are t-statistics; ***, and **, indicating statistical significance at the 1%, and 5%, levels, respectively. Horizontal arrow (→) shows the four dividend policy measures while the vertical arrow (↓)shows the market and accounting performance metrics.

5. Robustness Testing Using Generalized the Method of Moments (GMM) Technique

In this section, we implement the Generalized Method of Moments regression as a remedy for the endogeneity issue. Given the substantial panel data observations (n = 5478) and a limited time frame (2011–2021), the GMM emerges as a suitable estimator with one lag of the independent variables. Employing the dynamic panel data GMM approach, we select the one-period lag values of the regressors as instruments. The first-stage regression

confirms the adequacy of these instruments. To address individual effects, not fully accounted for in fixed effect regression models (LSDV), we opt for the difference GMM method. While LSDV controls for individual effects, the demeaning operation in fixed effect regression introduces additional variables correlated with the error term, leading to endogeneity concerns. Following Arellano and Bond (1991) and Arellano and Bover (1995), the Panel Generalized Method of Moments (panel GMM) with first difference transformation is applied to mitigate unobserved effects and establish equal-sided conditions between explanatory variables and the error term. The GMM instrument specification can be represented in the following regression equation:

$$TOBIN'SQ_{i,t} = \beta_1.TOBINSQ_{i,t-2} + \beta_2.DIVIDENDPOLICY_{i,t-1} + \beta_3.DEBT\_RATIO_{i,t-1} + \beta_4FCF_{i,t-1} + \beta_5.OWN.CONC\_{}_{i,t-1} + \beta_6DUMMYCHAEBOL_{i,t-1} + \beta_7LOG\_ASSET\_INTENSITY\_{}_{i,t-1} + \beta_8LOG\_EMPLOYEE\_INTENSITY\_{}_{i,t-1} + \beta_9SIZE_{i,t-1} + u_{i,t} \quad (3)$$

where $TOBIN'SQ_{i,t}$ is the dependent variable and β_1, β_2, …, β_9 are the coefficients to be estimated. $u_{i,t}$ represents the error term. Equation (3) above captures the dynamic panel GMM estimation with the first differences, addressing endogeneity concerns in the model.

In Table 14, the GMM procedure used in this study is the Panel Generalized Method of Moments (panel GMM) with the first difference transformations.

Table 14. Effect of dividend policy on firm value using the GMM.

Dependent Variable: Tobin's Q				
	1	2	3	4
Variables	Coeff.(t)	Coeff.(t)	Coeff.(t)	Coeff.(t)
Tobin's Q_{t-2}	0.3003 ***	0.2024 ***	0.3391 ***	0.3296 ***
	(8.0627)	(4.9463)	(8.7507)	(5.5336)
Dividend Policy	0.1119 **			
	(2.0988)			
Cash Dividend Payment		27.5518 ***		
		(5.0153)		
Dividend Yield			−16.6650 ***	
			(−6.3574)	
Dividend Payout Ratio				1.5123 ***
				(4.1472)
Debt Ratio	−0.8520 **	−0.5684	−1.2531 ***	−1.6715 ***
	(−2.3961)	(−1.5296)	(−3.3839)	(−2.8977)
Free Cash Flow	0.2157	0.2555	0.4228 **	0.1519
	(1.2459)	(1.4950)	(2.3122_	(0.5008)
Own. Conc.	−0.0070 *	−0.0047	−0.0092 **	−0.0014
	(−1.7001)	(−1.2342)	(−2.2090)	(−0.4859)
DummyChaebol	−0.0134	0.0498	−0.0331	−0.0388
	(−0.1515)	(0.5693)	(−0.3520)	(0.3452)
Ln. Asset Intensity	−0.0709	−0.1547	0.0047	0.0115
	(−1.1899)	(−2.4242)	(0.0816)	(0.1484)
Ln. Employee Intensity	−0.0227	0.0241	−0.0519	0.0424
	(−0.7419)	(0.7608)	(−1.6576)	(0.8644)

Size	0.0062	0.0056	0.0018	0.0213
	(0.7011)	(0.5461)	(0.1939)	(1.3038)
Cross-section fixed (first differences)	Yes	Yes	Yes	Yes
Instrument rank	53.0000	53.0000	53.0000	53.0000
Mean dependent var	0.0248	0.0248	0.0248	0.0248
S.E. of regression	0.3414	0.3349	0.3563	0.5366
J-statistic	129.7798 ***	124.5355 ***	121.5857 ***	101.4420 ***
Prob(J-statistic)	0.0000	0.0000	0.0000	0.0000

Note: Beta corresponds to the coefficient estimates. Numbers in parentheses are t-statistics; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

In the instrument transformation, the lag 2 of the dependent variable (Tobin's Q) is found suitable as an instrument for the GMM regression analysis while the other regressors retained a one-period lag. So (t-1) means a one- period lag while (t-2) means lag 2 or two-periods lag . Therefore, the variables included are the lagged values of Tobin's Q (Tobin's Q_{t-2}) four dividend policy proxies for the respective estimation equations namely: Dividend Policy$_{t-1,}$ Cash Dividend Payment$_{t-1,}$ Dividend Yield$_{t-1}$ and Dividend Payout Ratio$_{t-1.}$ Equally included are the following control variables: Debt_Ratio$_{t-1}$, Free cash flow, FCF$_{t-1}$; Ownership Concentration, Own.Conc.$_{t-1}$; DummyChaebol$_{t-1}$; Asset Intensity$_{t-1}$; Employee Intensity$_{t-1}$; and firm size, Size$_{t-1}$. The instruments employed are the same across different estimated equations (1 to 4). These instruments are included to address potential endogeneity issues in the estimation. Regarding the model performance statistics for the GMM estimation, in Equation 1, for instance, the J-statistic is a test statistic for over-identifying restrictions. In the provided Table 14, the J-statistic is reported to be 129.7798. It tests whether the instruments collectively satisfy the over-identifying restrictions. A small p-value (ideally less than the significance level of 0.05) indicates a rejection of the null hypothesis and that the instruments are valid. Prob(J-statistic) is the p-value associated with the J-statistic. In Table 14, it is reported to be 0.0000. This low p-value suggests that the instruments are valid, supporting the overall validity of the GMM estimation. This indicates a highly significant J-statistic, suggesting that the instruments collectively used in the estimation are valid. The results from the GMM estimation show that the lagged Tobin's Q, the dividend policy variables, and other control variables are statistically significant, providing confidence in the robustness of the estimation method. This reveals support for the alignment and entrenchment hypotheses among Chaebol and non-Chaebol firms. The positive coefficients on dividend policy, cash dividend payment, and the dividend payout ratio support the interest alignment hypothesis, indicating that these firms strategically use dividends to signal positive performance and enhance shareholder value.

However, the negative impact of dividend yield introduces a new dynamic, potentially reflecting investor concerns. The consistent negative impact of dividend yield on Tobin's Q and market-to-book for the non-Chaebol firms in both the split study sample and GMM estimation suggests a striking trend. This observation implies that, on average, a higher proportion of dividends relative to stock price may be perceived unfavorably by investors, resulting in a negative impact on market valuation. In the context of non-Chaebol firms, this negative effect is consistent with the entrenchment hypothesis, which suggests that firms may opt to retain earnings for managerial entrenchment, potentially diminishing market value. The negative relationship observed with dividend yield in the non-Chaebol context could indicate that investors view higher dividend yields as a signal of reduced growth prospects or financial challenges. This impact prompts further investigation into investor expectations, industry-specific dynamics, and contextual factors influencing the non-Chaebol landscape in the Korean market. The consistent positive influ-

ence of Tobin's Q from the previous period reinforces the lasting impact of past firm performance on current market valuation. The GMM robustness checks, addressing endogeneity concerns, enhance the credibility of these findings, contributing to a better understanding of how dividend policies interact with firm value within the Korean corporate context.

6. Conclusions

In conclusion, this study empirically revisits the effect of dividend policy on firm performance and value using data from the Korean market. It explores the distinctive challenges posed by agency problems, particularly Type I and Type II, which are prevalent in the Korean setting. The alignment and entrenchment theories are examined through a comprehensive analysis, considering the unique characteristics of Chaebol conglomerates and non-Chaebol firms. The empirical results reveal that in Chaebol firms, the significantly positive effects of the four dividend policy proxies on Tobin's Q and market-to-book ratios emphasize the alignment of dividend policies with market valuation. This aligns with the interest alignment hypothesis, suggesting that these conglomerates strategically use dividends to signal positive firm performance and enhance shareholder value.

Conversely, for non-Chaebol firms, the significantly negative effects of the same dividend policy proxies on market performance metrics suggest a divergent dynamic. This supports the entrenchment hypothesis, indicating that these firms may opt to retain earnings for managerial entrenchment, potentially diminishing market value.

On the accounting performance front, both Chaebol and non-Chaebol firms exhibit significantly positive effects of the four dividend policy proxies on ROA, ROE, and ROS. This aligns with the interest alignment hypothesis, emphasizing that dividend policies positively impact accounting outcomes in both business types. Non-Chaebol firms' divergence, with negative market performance and positive accounting results, may stem from a focus on managerial retention and prioritizing earnings for future investments, thereby potentially affecting market perception. Investor preference for retained earnings as a sign of reinvestment may not align with positive accounting performance, impacting market valuations. Additionally, industry-specific investor expectations regarding dividend policies may lead to negative market reactions despite positive accounting outcomes.

This research contributes to the literature on dividend policy by investigating its impact on Korean firms, distinguishing between Chaebol and non-Chaebol entities, and providing insights into alignment and entrenchment theories. The use of OLS, LSDV, and GMM methods provides methodological novelty, addressing endogeneity concerns. By dissecting dividend policy effects on market and accounting performance in Korea, this study fills a research gap and offers insights into ownership structure implications. The diverse outcomes warn against a blanket interpretation, underlining the importance of an in-depth comprehension of the relationship between dividend policy and business outcomes.

The practical implication for practitioners is that this research provides valuable insights into the elaborate effects of dividend policy on both market and accounting performance in Korean firms. Understanding these dynamics can guide strategic decision making, especially for those involved with Chaebol and non-Chaebol entities. Shareholders can use this information to assess the potential impact of dividend policies on firm value and make informed investment decisions. In the academic community, this study contributes methodologically by employing OLS, LSDV, and GMM, and it fills a research gap by examining the unique characteristics of the Korean market. This research enhances the overall understanding of the relationship between dividend policy, firm performance, and value. The appeal for improved transparency and communication in dividend policy serves as a policy recommendation, aligning with broader corporate governance norms to enhance transparency, accountability, and value creation in the Korean market.

7. Limitations of this Study

(i) Generalizability: The findings are exclusive to the Korean market and may not be directly applicable to other contexts due to the distinctive characteristics of Chaebol conglomerates and the prevailing ownership arrangements in Korea
(ii) Data Restrictions: This study relies on publicly available data, and their quality and completeness may have an impact on the robustness of the findings. Furthermore, the study period's temporal constraints may not capture long-term effects outside the period.
(iii) Dynamics of Ownership Structures: This study assumes that ownership structures are stable; however, changes over time are not fully explored. Dynamic shifts in ownership could have implications for the observed relationships.
(iv) Market Dynamics: This study focuses on a given time period, and market conditions may change over time. External economic forces and adjustments to regulations are not fully considered.
(v) Dividend Policy Proxies: While this study includes several dividend policy substitutes, these may not capture all dimensions of dividend policy, potentially overlooking peculiarities in managerial decision making. Future research should conduct cross-cultural analysis and explore dividend policy effects across diverse global markets to assess cross-cultural variations. Additionally, longitudinal data are encouraged in order to extend study periods to capture evolving market dynamics and long-term effects. Furthermore, an investigation of agency dynamics that delves deeper into the intricacies of Type I and Type II agency problems is suggested, as well as the exploration of individual firm characteristics within Chaebol and non-Chaebol categories for more insights. Finally, an investigation of the influence of regulatory changes on the relationship between dividend policy and firm outcomes is suggested.

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Appendix A

Multicollinearity Test		
Variable	Coefficient Variance	Centered VIF
Dividend Policy	3.28×10^{-6}	2.299288
Cash Dividend Payment	0.011946	2.633934
Dividend Yield	0.004906	2.446057
Dividend Payout Ratio	8.03×10^{-6}	1.787331

Own. Conc.	2.02×10^{-9}	1.418097
Debt Ratio	1.23×10^{-5}	1.586581
Free Cash Flow	0.000114	1.258367
Size	2.33×10^{-7}	1.604303
Asset_Intensity	5.67×10^{-7}	1.491007
Employee_Intensity	6.34×10^{-7}	1.192572
DummyChaebol	3.27×10^{-6}	1.758633

Note: VIF = Variance Inflation Factor, Own.Con. = ownership concentration; included observations = 5478.

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