Debt Capital and Dividend Policy as Complementary Indicators of Firm Valuation

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Article

Debt Capital and Dividend Policy as Complementary Indicators of Firm Valuation

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Abstract: This study investigates the relationship between debt capital and dividend policy as complementary indices of firm valuation in corporations listed on the Korea Composite Stock Price Index. Using Tobin's Q as a proxy for firm value and employing Ordinary Least Squares (OLS) , Two-Stage Least Squares (2-SLS) and GMM regression techniques, the analysis exposes how debt capital and dividend policies diminish firm value independently but have a synergistic effect upon interaction. Ownership structure, particularly Chaebol affiliation, lowers company value in isolation but moderates the detrimental effects of these financial practices. Further results emphasize the negative impact of firm size and the favorable impact of free cash flow on firm valuation. These findings contribute to the corporate finance literature by expanding our understanding of capital structure, dividend payout strategies, and ownership structure relationships. The study also provides actionable insight for corporate managers, investors and policymakers. It underlines the significance of balanced fiscal practices and governance reforms customized for markets with concentrated ownership configurations.

Keywords: capital structure; dividend policy; firm valuation; ownership structure

1. Introduction

Corporate finance has traditionally struggled with the complex mechanisms by which firms optimize their capital structures and dividend distribution policies to maximize valuation. Ross, Westerfield, Jaffe, and Jordan (2018) argue that optimal debt levels strike a compromise between tax advantages and financial distress costs, guaranteeing that the marginal tax subsidy equals the marginal debt cost. This optimization reduces the weighted average cost of capital (WACC), demonstrating managerial confidence in future profitability and increasing firm value. Amongst the numerous ongoing arguments on the subject, the interaction of debt capital and dividend policy as complementary signals of company valuation remains a critical topic of investigation. Cooper and Lambertides (2018) find that large dividend increases are usually accompanied by a big increase in leverage, complicating the situation. This pattern demonstrates management's deliberate use of dividend payouts to mitigate excess debt capacity, thereby signaling stability and financial discipline to the market (Jensen, 1986; González, 2013; Neilsen, 2005; Chindengwike, 2024; Harvey, Lins, & Roper, 2004; Brockman, & Unlu, 2009; Bhattacharya, 1979; Asquith, & Mullins, 1983; Atanassov, & Mandell, 2018).

According to Cooper and Lambertides, these leverage adjustments are not taken into consideration by traditional partial adjustment frameworks or typical dividend policy determinants including firm maturity, investment possibilities, and risk.

Dividend increases, on the other hand, reflect a more complex re-balancing of leverage dynamics, implying that dividends and debt both influence business valuation via sophisticated, interdependent channels (Brav, Graham, Harvey, & Michaely, 2005). Besides, Brockman and Unlu (2009) present persuasive evidence that institutional issues, such as creditor rights, have a major impact on dividend policy. Their findings show that in nations with lower creditor safeguards,

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corporations use more stringent payout practices to reduce agency costs of debt. This substitution of governance systems emphasizes the importance of institutional circumstances in affecting the relationship between leverage and dividend decisions.

According to Kang, 2023, the chronic "Korean discount," defined as the systematic undervaluation of Korean corporations compared to global peers, amplifies the necessity of tackling this issue within the Korean stock market (Ducret & Isakov, 2020). The combined constraints of high leverage, as well as the cultural and economic idiosyncrasies of Chaebol-dominated ownership structures, compound the situation. At the heart of our research is a paradox: how do corporations with high debt capital and dividend payouts, both of which impose cash flow constraints, manage to maintain or even increase market valuations? Instinctively, these cash withdrawals may be anticipated to reduce operational flexibility and stifle growth opportunities. However, theoretical perspectives and empirical evidence suggest differently, arguing that the disciplined use of debt and dividends can convey financial strength, alleviate agency concerns, and correspond with investor expectations (González, 2013; Neilsen, 2005; Chindengwike, 2023; Harvey, Lins, & Roper, 2004; Majid, & Abu 2015; Brockman, & Unlu, 2009; Bhattacharya, 1979). There is therefore an urgent need for a more detailed understanding of how these elements interact to influence business performance.

Understanding how this intersection influences firm valuation is particularly significant in a typical market which is characterized by Chaebol dominance and often criticized for flawed governance practices. This paper aims to disentangle these processes where the interaction of leverage, dividend policy, and ownership structure provides unique insights into broader corporate finance theory. The integration of debt and dividend policies synergistically enhances firm value by addressing agency issues and boosting investor trust. Firms adjust leverage flexibly to tackle challenges (Fama & French, 2002; Graham & Harvey, 2001; Brounen et al., 2006). Debt enforces managerial discipline (Nielsen, 2005; Harvey et al., 2004), while dividends signal stability and reduce asymmetry (Lintner, 1962; Nielsen, 2005). This interaction moderates leverage risks (Diedrich et al., 2022) and is crucial for Korean firms facing chaebol-related governance inefficiencies (Cooper & Lambertides, 2018).

Therefore, the primary research objective of this study focuses on the interaction between debt ratio and dividend policy and its effect on firm valuation, with additional emphasis on the moderating function of Chaebol ownership structures. By addressing these aims, this study provides actionable insights into mitigating the Korean discount. It illustrates how optimal and strategic financial decisions can improve shareholder value, transparency, governance, and market trust for KOSPI-listed corporations.

Using a rich dataset from KOSPI and employing standard estimation models, this paper investigates the objectives and the findings are quite revealing. The empirical results support the stated hypotheses with debt ratio showing a negative and statistically significant impact on firm value (Tobin's Q). This suggests that higher debt levels might harm firm value in Korean corporations. Similarly, dividend yield, which serves as a proxy for dividend policy, has a negative and statistically significant association with company value, supporting the premise that certain dividend policies might reduce firm value. The interaction of debt and dividend yield shows a positive and statistically significant link, suggesting a mitigating or synergistic influence on firm valuation. The Chaebol dummy variable, which represents ownership structure, is negatively and significantly related to firm value, implying that independently, Chaebol ownership may have a negative effect. Yet the interaction between debt and the Chaebol dummy is favorably and significantly related with firm valuation, indicating that Chaebol ownership could mitigate some of the adverse consequences of debt. The interaction between dividend yield and Chaebol dummy is positive and statistically significant, indicating that Chaebol structures can ameliorate the detrimental effects of certain dividend distribution decisions.

Furthermore, company size has a negative and substantial effect on firm value, whereas free cash flow has a positive and significant effect, offering more understanding into the control parameters' contribution to firm value.

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This study provides significant contributions to the corporate finance literature, shareholder strategy, and policy-making. It reveals that, while debt and dividend policies lower firm value individually, their interaction has a synergistic effect, increasing valuation. The study emphasizes the governance role of Chaebol ownership, which, while reducing value alone, mitigates the detrimental effects of these policies through interaction. For shareholders, the findings highlight the strategic relevance of balancing capital structure and dividend payout strategies in corporations with concentrated ownership. These findings can be used by policymakers to create regulatory frameworks that promote standards of excellence in financial management and improve governance transparency in such settings.

The remaining portions of the paper are organized as follows: Section 2 focuses on the literature review and develops the hypotheses. Section 3 describes the research methodology, whereas Section 4 features the empirical analysis, including the results and commentary. Finally, Section 5 provides a conclusion.

2. Literature Review

2.1. Debt Capital and Firm Value

Globally, corporate finance authors have extensively investigated the link between debt capital and firm value, with the literature providing many opinions on its mechanics and implications. Debt capital functions as both a signaling instrument and a governance mechanism, influencing business value through managerial incentives, agency costs, and financial architecture.

Ross, Westerfield, Jaffe, and Jordan (2018) argue that debt capital may signal firm value by suggesting managerial confidence in the company's future profitability. Rational corporations optimize their debt levels to balance tax benefits with financial distress costs, ensuring that the marginal tax subsidy equals the marginal cost of debt. Successful businesses with larger expected profits tend to use more leverage, exploiting interest deductions to lower taxes. Investors view such debt increases as indicators of corporate value, which often leads to rising stock prices.

However, the possibility of managerial opportunism arises, in which managers inflate the amount of debt in order to artificially boost stock values. Despite this, Ross et al. (2018) argue that more valuable firms continue to issue more debt than less valuable firms, ensuring that debt remains a reliable indicator of firm worth.

In contrast, Harvey, Lins, and Roper (2004) examine the governance role of debt in alleviating agency issues, particularly in emerging economies with poor legal safeguards and concentrated ownership structures. In such cases, debt capital can reduce managerial overinvestment by enforcing discipline through debt servicing responsibilities and monitoring procedures. Firms with mismatched managerial incentives—where control rights exceed cash flow rights—lose value, whereas leverage offsets this loss by lowering agency costs (Shleifer, & Vishny,1986, 1992). According to Harvey et al. (2004), the value-enhancing effect of debt is most pronounced in corporations with large assets or limited growth opportunities, as well as significant excessive investment risks.

The value-creation potential of distinct debt types is further distinguished in the literature. According to Harvey et al. (2004), worldwide syndicated loans produce positive abnormal returns due to their strict covenants and monitoring requirements, especially for businesses whose ownership and managerial control are highly separated. However, the strict oversight needed to properly handle agency issues is absent from domestic debt markets in emerging nations, which are frequently impacted by family or governmental control. International debt markets, on the other hand, have greater governance potential since they impose stricter transparency requirements and more robust rights for creditors.

Harvey et al. (2004) and Ross et al. (2018) both emphasize how debt serves as a governance and signaling tool. Harvey et al. (2004) highlight the governance function of debt in lowering agency costs, especially in emerging markets, whereas Ross et al. (2018) concentrate on the signaling impacts of debt in communicating business quality to investors. All of these viewpoints agree that, when

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properly managed and structured, debt may increase a company's worth. They do, however, warn against using too much debt, which can cause financial difficulties or undermine investor trust.

Gonzalez (2013) elaborates on these points by analyzing the impact of financial leverage on operating performance, especially in times of industry downturn. Gonzalez (2013) uses a large international panel dataset to show that high-leverage companies have higher operating performance declines during downturns. This is in line with the idea that the costs of financial distress outweigh the disciplinary advantages of debt (Andrade & Kaplan, 1998; Shleifer & Vishny, 1992). This effect, however, differs depending on the institutional setting. High debt, for instance, improves operating performance even during downturns in French civil law nations because of improved investor protection and legal enforcement. These results highlight how the effects of debt vary depending on the context, taking into account factors like legal origins, financial trajectory, and the degree of protection afforded to creditors and investors.

Even with these realizations, problems still exist. The universality of theoretical theories is called into question by empirical data. Businesses typically choose wider leverage zones over rigid target debt ratios, according to Graham and Harvey (2001) and Fama and French (2005). Additionally, because businesses modify leverage in response to advantageous market conditions, market timing affects capital structure choices (Baker & Wurgler, 2002). These variations imply that, contrary to earlier theories, the relationship among leverage, governance, and firm value is more dynamic and dependent on firm-specific and market circumstances.

Examining how debt capital and business value interact in the Korean environment provides a chance to close these disparities. Korean businesses function within a distinct institutional framework that is defined by a chaebol-dominated economy, concentrated ownership, and significant government control. Because of these characteristics, agency conflicts are made worse, which makes the governance role of debt especially important. Furthermore, Korea's sophisticated domestic and global capital markets offer an ideal setting for researching the ways in which market timing, investor protections, and debt arrangements interact to affect business value (Claessens et al., 1999, 2002).

2.2. Dividend Policy and Firm Value

In economic theory, dividend policy has long been a controversial topic (Lang, & Litzenberger, 1989). According to Miller and Modigliani's (1961) dividend irrelevance theory, dividend policy has no bearing on firm value in a perfect market. According to the dividend clientele theory and in certain situations, empirical tests provide credence to this viewpoint. But in reality, the presumptions of rational behavior and ideal markets are rarely true (Black and Scholes,1974; Asquith, & Mullins, 1983; Atanassov, & Mandell, 2018).

On the other hand, value-relevance theories contend that dividends have a major effect on business value. Dividends, according to the Bird-in-Hand hypothesis (Bhattacharya, 1979; Gordon, 1963; Lintner, 1956, 1963), lower perceived risk, which in turn lowers the cost of equity and increases firm value. Likewise, the signaling hypothesis (John and Williams, 1985) emphasizes dividends as a way to communicate expectations for growth and financial stability. Additionally, dividends lower agency costs by lowering free cash flow that could be abused by managers, according to the agency theory (Rozeff, 1982, Jensen 1986).

There is still conflicting empirical evidence. Profilet and Bacon (2013) report a positive association between dividend payouts and share price fluctuations, however Hussainey et al. (2011) discover a negative correlation. Farinha (2003) found a U-shaped association between payout ratio and insider ownership levels in large UK corporations, which was attributed to managerial entrenchment. In emerging economies, there is a dynamic link between insider ownership and dividends. In Taiwan, Huang et al. (2012) discovered a non-linear relationship between controlling family ownership levels and dividend payouts. As a result, in less developed nations with concentrated family ownership dividend payouts may be used to resolve the principal-principal agency conflict among majority and minority shareholders (Njoku & Lee, 2024). Within a less efficient capital market, minority shareholders and stakeholders may rely on dividend payout to

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determine a company's value (Seth & Mahenthiran, 2022). These inconsistencies demonstrate how dividend consequences are contextually dependent and impacted by market conditions, investor preferences, and tax regimes.

2.3. Interaction of Debt Capital and Dividend Policy

The simultaneous use of debt along with payout strategy has a substantial impact on corporate valuation, which is shaped by shareholder power, financial strategies, and market dynamics. Nielsen's (2005) study creates an agency model to investigate the trade-off between shareholder control and a tight capital structure in corporate governance. The model suggests that limited shareholder control strikes an optimal balance between external scrutiny to prevent unprofitable investments and internal managerial flexibility to explore high-return alternatives. It predicts that enterprises with greater investment potential want stronger shareholder power. Empirically, the study examines US corporations using a governance index and discovers that poorer shareholder rights are associated with higher leverage, increased dividend likelihood, and larger payouts. These data demonstrate that enterprises with limited shareholder authority frequently employ leverage and dividends as alternative control mechanisms. Dividends can serve as indicators of financial stability, which attracts investors. The study emphasizes the complex interaction between governance, capital structure, dividend policy and business value, reinforcing the theoretical model's significance.

Conflicts between shareholders and bondholders can result in agency costs. While shareholders often prefer higher dividends, bondholders favor constraints on payouts to safeguard their claims, viewing excessive dividends as wealth expropriation (Jensen & Meckling, 1976). By reducing free cash flow held by managers, dividend payouts encourage reliance on external financing, which subjects managers to scrutiny by analysts and creditors, as Easterbrook (1984) noted. This external monitoring discourages managerial self-interest but may lead to increased leverage, which raises firm risk, as Easterbrook also warned.

Jensen (1986) argued that limiting excess cash flow through dividend payments addresses overinvestment, aligning managerial decisions with shareholder interests. The availability of surplus cash enables managers to prioritize their own goals, such as firm over-expansion, at the expense of shareholders. Debt, similar to dividends, restricts the funds available to managers, thereby reducing agency costs and ensuring managerial behavior aligns more closely with shareholder objectives.

Although the free cash flow hypothesis links dividend policy to investment decisions by suggesting that increasing dividends can mitigate overinvestment and enhance a firm’s market value (Lang & Litzenberger, 1989), shareholders must weigh the associated risks. These risks include higher personal taxes on dividends and the potential for increased firm debt. In contrast, M&M proposed that dividend policy and investment decisions are independent, emphasizing the trade-off shareholders face in balancing the costs and benefits of elevated dividend payouts.

Cooper and Lambertides (2018) analyze the implications of large dividend increases, revealing that such increases serve as signals of changes in leverage policy rather than profitability or target leverage adjustments. Using data from 4,374 firms, they demonstrate that dividend-increasing firms exhibit a more convex relationship between leverage and financial surpluses or deficits. Unlike standard leverage models (e.g., Kayhan & Titman, 2007) or variables linked to dividend changes (e.g., Grullon et al., 2002, 2005), this unique leverage behavior is not explained by traditional factors. Instead, large dividend increases reflect discretionary changes in financial management, with firms deviating from typical pecking-order behavior. Additionally, Cooper and Lambertides find that dividend initiations signal even stronger effects, consistent with prior findings (e.g., Officer, 2011). These results suggest that dividend increases convey private information about a firm’s intentions to alter leverage policy, providing valuable insights into corporate financial decision-making and signaling theory.

Leverage serves as a disciplinary mechanism, enforcing financial obligations that align management's interests with those of shareholders (Tulcanaza-Prieto & Lee, 2024; Gonzalez, 2013;

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Nielsen, 2005; Harvey et al., 2004). However, increasing leverage raises financial and operating risks, as noted by Diedrich, Dierkes, and Gröger (2022), who link it to the cost of capital.

Dividend policy complements leverage by signaling financial health and stability to shareholders (Bhattacharya, 1979). Nielsen (2005) observes that corporations with lower shareholder rights frequently offer bigger dividends to attract investors and increase firm value. This approach suggests an ongoing commitment to shareholder returns, instills confidence, and reduces perceived risks. While Modigliani and Miller (1963) assume deterministic debt levels and certain tax breaks, Miles and Ezzell (1980) and Harris and Pringle (1985) take into account dynamic adjustments to desired capital structures. However, empirical studies show that these models are not completely accurate. Graham and Harvey (2001) and Brounen et al. (2006) discovered that enterprises rarely adhere to exact debt ratios, instead shifting within goal zones.

This suggests that integrated impact of debts and dividend policy results in an intriguing equilibrium. High leverage raises risk, yet continuous dividend payments might offset adverse perceptions and improve valuation (Nielsen, 2005). Deviations from theoretical models, affected by factors such as volatility in the markets and sluggish adjustment to target capital structures, exacerbate the interaction (Fama & French, 2002; Baker & Wurgler, 2002, Chindengwike, 2024).

In a nutshell the combination of leverage and dividend payments, controlled by shareholder power, is crucial in determining business value. Firms that successfully manage this trade-off can increase their market valuation by using debt to limit agency costs while also committing to dividend payments, which signal financial strength and attract investors. This emphasizes the importance of context-specific approaches that account for real-world economic challenges.

A number of gaps remain in the literature. First, the dynamic nature of optimal capital structure and its interaction with dividend policy need additional investigation. The sluggish adjustment of leverage to target ratios (Fama and French, 2002) and variations owing to market timing (Welch, 2004) indicate that static models do not reflect real-world complexities. Second, assuming that dividends and debt always operate as complements may simplify how they interact. To further understand these patterns, future research must take into account firm - and market-level heterogeneity. Finally, the empirical discrepancies found in dividend effect studies (dividend puzzle) highlight the importance of conducting longitudinal assessments across several contexts.

The interaction of debt capital and dividend policy in influencing firm value is shaped by a delicate balance of financial discipline, risk management, and market signaling. While theoretical frameworks provide fundamental perspectives, empirical evidence demonstrates considerable contextual dependencies. To bridge the gap between theory and practice, a customized strategy is required, taking into consideration firm-specific, market, and structural variables.

3. Hypothesis Development

Debt capital is an important determinant of corporate value, acting as both a signaling mechanism and a financial discipline instrument. According to Ross et al. (2018), optimal leverage levels balance tax benefits against financial distress costs, allowing successful enterprises to lower taxes while also signaling confidence in future profitability, which frequently leads to stock price increases. Similarly, Lee et al. (2024) highlight leverage disciplines management (Jensen, 1986), which promotes value-maximizing decisions while lowering free cash flow agency costs. Studies by Abor (2005) and Modigliani and Miller (1958) confirm a positive association between leverage and business value, particularly for profitable enterprises that use debt to improve performance. Not all of the time is this link linear or positive. In the end, excessive debt lowers business value by increasing agency costs and financial distress. High-profit companies may favor retained earnings above debt, according to the pecking-order theory, which would result in lower levels of leverage (González, 2013). According to the management-entrenchment theory, entrenched managers may increase leverage in order to solidify their position, which could lead to risks and inefficiencies that reduce the value of the company (Aggarwal et al., 2007; Harris & Raviv, 1991). Research from emerging economies, such as Chen's (2004) and Ibhagui and Olokoyo's (2018) findings in Nigeria, indicates that

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high leverage has a negative and significant effect on business value. These dynamics are supported in the Korean context by Tulcana-Prieto, Lee & Anzules-Falcones, (2024), who observe that highly indebted enterprises have operational difficulties and dwindling market share, which is consistent with Opler and Titman's (1994) results for the U.S. market.

Empirical research, such as Graham and Harvey (2001), demonstrates that firms frequently vary from optimal leverage, resulting in over-leverage and lower firm value. Over-leverage in the Korean environment, where enterprises face distinctive market structures and possible chaebol dominance, can increase these risks and reduce firm value.

H1: Debt capital negatively impacts firm value in Korean firms.

Dividend policy significantly impacts firm value, influencing both market and accounting performance. The interest alignment hypothesis proposes that in corporations with concentrated managerial ownership, such as Chaebols, dividend policies align managerial and shareholder interests, increasing firm value (Jensen & Meckling, 1976; Chen & Chuang, 2009). Founding CEOs frequently prioritize sustainable growth and shareholder wealth, which contributes to this alignment (Bahrami and Evans, 1987; Fahlenbrach, 2009; Wasserman, 2003). Njoku and Lee (2024) show that cash dividend payments have a positive effect on market indicators such as Tobin's Q and market-to-book ratios, implying that dividend-paying companies are more favored by investors. The entrenchment hypothesis, on the other hand, contends that excessive managerial power can lead to self-serving behaviors like as cash hoarding, lowering shareholder value (Stulz, 1990; Wang, 2006; Faulkender & Wang, 2006). According to Njoku & Lee, a negative association between dividend yield and firm value over their entire dataset of Korean companies suggests that higher dividend yields may reduce prices, presumably due to unfavorable investor sentiments. When Chaebol and non-Chaebol enterprises are examined independently, unique patterns occur, indicating the importance of ownership structure in creating these results. Njoku and Lee (2024) emphasize that these twin dynamics necessitate specialized payout schemes to address agency concerns while optimizing firm value across different ownership arrangements.

Although paying out dividends can signal financial soundness (John and Williams, 1985) and lower agency costs (Rozeff, 1982; Jensen 1986 and La Porta et al., 2000; Njoku & Lee 2024), it can also reduce the amount of retained earnings available for reinvestment, especially in growing markets. Hussainey et al. (2011) discovered a negative association between dividend payouts and stock price movements, lending weight to the theory that high dividend yields may indicate lower future growth potential. This may be especially important for Korean enterprises given their primary focus on growth and reinvestment in chaebol-dominated sectors.

H2: Dividend yield negatively impacts firm value.

Empirical studies show that enterprises frequently operate within flexible financial frameworks rather than rigid theoretical models, modifying leverage within targeted regions for tackling both internal and external issues (Fama & French, 2002; Graham & Harvey, 2001; Brounen et al., 2006).The simultaneous implementation of debt and dividend policies may be more effective in addressing agency issues than either strategy alone. Debt exerts external control on management by establishing financial commitments, minimizing the possibility of managerial excesses, and connecting managerial actions with shareholder interests (Nielsen, 2005; Harvey et al., 2004). Dividends also serve as a signal of financial stability and commitment to shareholder returns, which reduces information asymmetry and boosts investor trust (Lintner, 1962; Nielsen, 2005).

These mechanisms interact to generate a complementary dynamic in which the hazards of leverage, such as higher capital costs and financial pressure, are offset by the stabilizing and trust-building benefits of consistent dividend payments (Diedrich, Dierkes, & Gröger, 2022). This flexibility, coupled with strategic dividend policies, would likely enhance firm value. It achieves this by harnessing debt's disciplinary effects while maintaining investor confidence. The interaction

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suggests a mitigating or synergistic impact on firm performance (Cooper and Lambertides, 2018). For Korean firms, this synergy is particularly effective if it helps mitigate risks linked to high financial leverage. Additionally, it addresses the unique challenges posed by chaebol-dominated structures. Together, these mechanisms provide a solid foundation for sustainable value creation.

H3: The interaction of debt ratio and dividend yield positively impacts firm value.

Chaebol affiliation is projected to reduce corporate value due to inherent governance inefficiencies and conflicts of interest. Baek, Kang, and Park (2004) show how concentrated family ownership in Chaebols causes inequalities between voting and cash flow rights, compromising governance and lowering investor confidence. Bae, Kang, and Kim (2002) demonstrate tunneling, in which chaebol-affiliated acquisitions frequently benefit controlling shareholders at the expense of minority owners, resulting in wealth expropriation and inefficient resource allocation. These structural weaknesses reduce corporate value by favoring family interests over shareholder wealth maximization. While Chaebols may benefit from economies of scale and group synergies, these advantages are frequently offset by governance issues, inefficient decision-making, and decreased investor confidence.

As a result, the chaebol dummy is expected to have a negative impact on company value, underlining the need to resolve governance issues in chaebol-dominated ownership arrangements.

H4: The Chaebol dummy negatively impacts firm value.

In chaebol corporations, debt can operate as an external check on entrenched management practices, lowering agency costs (Harvey et al., 2004). Given their proclivity to over-leverage, creditor monitoring may result in greater governance and increased business value. This relationship is consistent with agency theory, which holds that external financial restrictions can regulate managerial behavior.

H5: The interaction of debt ratio with the Chaebol dummy positively impacts firm value.

Chaebol corporations are always under extreme scrutiny by minority stockholders over governance shortcomings. Dividend payments might suggest financial strength and lower the perceived danger of management expropriation (Lintner, 1962; John and Williams, 1985). In the Korean environment, where Chaebol enterprises are dominant, this signaling effect could rebuild investor confidence and increase firm value, offsetting some of the negative effects of Chaebol structures.

H6: The interaction of the Chaebol dummy with dividend yield positively impacts firm value.

4. Sample and Methodology

4.1. Sample Selection

This research examined data on 1,514 Korean enterprises listed on the Korean Stock Exchange between 2011 and 2021, gathered from KisValue, a database offered by the Korea Investor Service (KIS). Comprehensive financial statements, such as the statement of financial position (balance sheet), income statement (profit and loss), statement of cash flows, and statement of changes in equity, were incorporated, as well as annual data on capital structure, dividends, ownership structure, along with additional firm-specific characteristics. Firms with missing data or distinguishing traits, such as financial institutions, were eliminated during the thorough cleaning and filtering steps. Using Python, the dataset was transformed into a panel structure, yielding a final sample of 558 firms from 2011 to 2019, totaling 5,022 firm-year observations. This strong dataset allowed for longitudinal analysis of governance, financial mechanisms, and firm value in the Korean context.

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4.2. Model Specification

This study aims to (1) evaluate the effect of debt ratio on firm value (2) guage the impact of dividend policy on firm valuation (3) explore the intercation effect of debt ratio and dividend policy on the market performance of Korean firms (4) investigate the effect of Chaebol-group affiliation on firm valuation (5) examine the interaction effect of chaebol ownership structure and debt capital on firm value and finally (6) guage the interaction effect of Chaebol ownership structure and dividend policy on firm value; all while controlling for specific firm variables.

In addition to the lagged regressors, exogenous variables are incorporated as instruments, including the firm's total corporate governance score (TSG), retrun on assets (ROE) and economic growth (Growth) in the robustness analysis. Firm control variables such as free cash flow and size are incorporated in the regression models.

The introduction of a "ChaebolDummy" variable is crucial for separating the effects of Chaebol membership on the relationship being studied. This dummy variable represents the distinct governance and structural aspects of Chaebol-affiliated companies. According to the Korea Fair Trade Commission (KFTC) criteria, a corporation is categorized as a Chaebol (Chaebol Dummy = 1) if its controlling ownership position exceeds 30% and its total assets surpass KRW 5 trillion. Non-Chaebol firms (Chaebol Dummy = 0) typically have more distributed ownership structures. This technique distinguishes between Chaebol and Non-Chaebol enterprises, allowing for a more refined investigation of ownership structure effects (Njoku & Lee, 2024).

Ownership concentration (OWN), defined as the proportion of shares held by the largest shareholder or group of major shareholders, is an important indicator for measuring control within companies. It represents the scope of concentrated ownership and its possible impact on managerial decisions and governance processes. This metric has been frequently used in empirical studies to examine corporate governance and agency problems (Hwang et al., 2013).

The Chaebol Dummy and OWN variables work together to give reliable proxies for ownership structure, allowing for a more in-depth investigation of its relationship with capital structure, dividend policies, and firm value.

Therefore, this research proposes the following regression models to comprehensively investigate the independent and interactive effects of debt ratio, dividend policy and Chaebol ownership structure affiliation on firm value in the context of Korean firms.

To examine whether debt alone significantly affects firm value, controlling for size and free cash flow.

$$\text{Tobin's } Q_{it} = \beta_0 + \beta_1 Debt_{it} + \beta_2 Size_{it} + \beta_3 FCF_{it} + \epsilon_{it} \quad (1)$$

To tests whether dividend policy alone significantly impacts firm value.

$$\text{Tobin's } Q_{it} = \beta_0 + \beta_1 DYD_{it} + \beta_2 Size_{it} + \beta_3 FCF_{it} + \epsilon_{it} \quad (2)$$

To examine how debt and dividend policy interact with each other and how ownership structure moderates their effects on firm value.

$$\text{Tobin's } Q_{it} = \beta_0 + \beta_1 Debt_{it} + \beta_2 DYD_{it} + \beta_3 (Debt_{it} \times DYD_{it}) + \beta_4 ChaebolDummy_{it} + \beta_5 (ChaebolDummy_{it} \times Debt_{it}) + \beta_6 (ChaebolDummy_{it} \times DYD_{it}) + \beta_7 Size_{it} + \beta_8 FCF_{it} + \epsilon_{it} \quad (3)$$

Where:

Tobin's Q ($Tob.Q_{it}$) is the dependent variable representing the market valuation of the firm. It is calculated as the total market value of the firm divided by the total asset value of firm i in year t (Njoku & Lee, 2024).

The debt ratio (Debt), computed as (Total Debt / Total Assets)×100, indicates the percentage of a company's assets financed by debt. In this study, it is used as an independent variable to assess how a firm's capital structure influences its market value, giving light on capital allocation efficiency and the role of leverage in firm performance (Njoku & Lee, 2024).

Dividend yield ($DYD_{i,t}$), calculated as the ratio of cash dividends paid to market value of equity, is a reliable indicator of dividend policy (Njoku & Lee, 2024; Atanassov & Mandell, 2018). It reflects shareholder returns and is less susceptible to accounting manipulation than other proxies such as

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earnings (La Porta et al., 2000). Using market value rather than book value removes accounting distortions, providing a more accurate picture of a company's financial status.

ChaebolDummy is an indicator variable for ownership structure affiliation (1 = Chaebol firm, 0 = Non-Chaebol firm).

$Debt_{i,t} \times DYD_{i,t}$ is the interaction term capturing the synergistic effect of leverage and dividend policy on firm value.

ChaebolDummy×$Debt_{i,t}$ is the interaction term examining how Chaebol affiliation moderates the effect of debt capital on firm value.

ChaebolDummy×$DYD_{i,t}$ is the interaction term to assesses how Chaebol ownership structure influences the impact of dividend policy on firm value.

Firm size ($SIZE_{i,)t}$ is calculated using the natural logarithm of a firm's sales revenue at time t. It indicates the size of a company's operations and money generated from core activities, acting as a control variable to account for size-related variances in firm performance.

Free cash flow ($FCF_{i,t}$) is calculated as operating cash flow minus dividends (common and preferred), scaled by total assets, serving as a control for liquidity and operational efficiency.

In the 2SLS and GMM estimation models, lagged regressors are included to account for dynamic relationships. Exogenous instruments such as total corporate governance score (TSG), return on assets (ROE), and economic growth (Growth) are used to address potential endogeneity issues.

Total corporate governance score (TSGi,t) represents a composite measure of governance quality, encompassing board structure, shareholder rights, and disclosures, as evaluated annually by the Korea Corporate Governance Service (KCGS) to promote improved governance practices. Return on equity ($ROE_{i,t}$) serves as an instrumental variable, representing a firm's profitability relative to its shareholders' equity. It is calculated by dividing the firm's net income by its total shareholders' equity. This measure reflects how effectively a company uses shareholder investments to generate returns, making it a valuable indicator of internal performance that impacts firm value.

Growth ($Growth_{i,t}$) is employed as an instrumental variable to represent the economic growth rate. It is quantified using the gross national product (GNP) of Korea, providing an external macroeconomic indicator that influences firm performance and value. This variable is instrumental in isolating the broader economic context's impact on the relationship between debt capital, dividend policy, and firm value. $\varepsilon_{i,t}$ is the error term, capturing the unobserved factors influencing firm valuation (Njoku & Lee, 2024).

These variables enable a thorough examination of the individual and combined impacts of debt ratio, dividend policy and Chaebol affiliation (ownership structure) on firm value in the Korean conglomerates.

5. Empirical Analysis and Results

5.1. Descriptive Statistics

The descriptive statistics in Table 1 highlight the most significant variables for the total sample of 5,022 observations, which are weighted at the 5th and 95th percentile. Tobin's Q (TOB.Q), an indicator for firm valuation, has a mean of 0.689, a median of 0.515, and significant variability (SD = 0.538). The debt ratio (DEBT) averages 40.6%, with a median of 40.8% and a small range (SD = 0.203). The average dividend yield (DYD) is 1.25%, with a median of 0.96% (SD = 0.0125). Firm size (SIZE), calculated as the natural log of total assets, has a mean of 26.24 and a median of 26.16 (SD = 1.40), but free cash flow (FCF) averages 4.26%, with some fluctuations (SD = 0.056). Return on equity (ROE) is low, with a mean of 2.44% and a median of 3.08%, although there is significant variation (SD = 0.0101). Gross national product (GNP), which represents economic growth, is consistent across enterprises, averaging 3.03% with low variability (SD = 0.0043). The total corporate governance score (TSG) averages 29.07, with a wide range (SD = 8.38), showing differing governance norms among enterprises. Ownership concentration (OWN) varies significantly, with a mean of 28.10%, a median of 24.89%, and a standard deviation of 13.73.

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Table 1. Descriptive Statistics.

Variable	Count	Mean	Median	Std.Dev.
TOB.Q	5022	0.689	0.515	0.538
DEBT	5022	0.406	0.408	0.203
DYD	5022	0.012	0.010	0.013
SIZE	5022	26.242	26.165	1.402
FCF	5022	0.043	0.039	0.056
ROE	5022	0.024	0.031	0.101
GROWTH	5022	0.030	0.029	0.004
TSG	5022	29.073	28.670	8.378
OWN	5022	28.095	24.890	13.736

Note: This table presents firm's market valuation, debt, dividend policy, ownership structure, and other control and instrumental variables of the total testing sample of 5022 observations. They are winsorized at 5% and 95% respectively.

These statistics provide an overview of the sample's financial, governance, and structural characteristics, laying the groundwork for assessing the relationship between debt, payout policy, and firm valuation.

5.2. Test of Equality of Means Between Chaebol and Non-Chaebol Firms

According to Table 2, the equality of means evaluation demonstrates significant disparities in ownership concentration (OWN) between chaebol and non-chaebol enterprises, with a 23.93-point mean difference. This is corroborated by a highly significant t-value (101.85), which indicates that chaebol enterprises have a much more concentrated ownership structure than non-chaebol firms. This finding is consistent with the governance characteristics of Chaebols, which are often family-controlled conglomerates. Furthermore, dividend yield (DYD) has a very high t-value (8.18), implying a statistically significant difference in dividend payout choices between chaebol and non-chaebol companies. SIZE, FCF, and ROE likewise have substantial t-values (greater than 4.4), indicating important differences in total assets, liquidity or cash reserves and profitability.

Table 2. Test of Equality of Means Between Chaebol and Non-Chaebol Firms.

Variable	Total Sample [N=5022]		Chaebol Sample[N=1918]		Non-Chaebol Sample[N=3101]		Firm type Difference		t-Value
	Mean	Std.Dev	Mean	Std.Dev	Mean	Std.Dev	Mean Difference	Standard Error	
TOB.Q	0.689	0.538	0.692	0.527	0.686	0.545	0.005	0.016	0.322
DEBT	0.406	0.203	0.409	0.208	0.405	0.201	0.004	0.006	0.671
DYD	0.012	0.013	0.014	0.013	0.012	0.012	0.003	0	8.179***
SIZE	26.242	1.402	26.353	1.42	26.173	1.387	0.18	0.041	4.402***
FCF	0.043	0.056	0.047	0.057	0.04	0.055	0.008	0.002	4.896***
ROE	0.024	0.101	0.033	0.098	0.019	0.103	0.013	0.003	4.478***
GROWTH	0.03	0.004	0.03	0.004	0.03	0.004	0.000	0.000	0.000
TSG	29.073	8.378	29.333	8.306	28.909	8.422	0.423	0.243	1.744*
OWN	28.095	13.736	42.88	9.209	18.95	5.838	23.93	0.235	101.847***

Note: *** ,** and * indicate statistical significance at the 1% , 5% and 10% levels respectively.

In contrast, the variations in market valuation (TOB.Q) and debt financing (DEBT) between the two business types are minor and statistically insignificant, as indicated by the modest mean

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differences and low t-values. This shows that, despite their dissimilar ownership structures, the two business types have similar capital structure policies and market performance.

5.3. Correlation Analysis

Table 3 shows the correlation analysis results. It investigates the linear correlations among the important variables in this study.It provides first glimpses into their relationships and guides later multivariate analyses. Correlation does not imply causation, but it does assist detect trends. Multicollinearity is usually a problem when the absolute value of the correlation coefficient between two independent variables surpasses 0.8 or 0.9. The study found a substantial negative correlation between Tobin's Q (TOBQ) and debt (DEBT) ($r = -0.3700$, $p < 0.01$), indicating an inverse relationship between firm valuation and debt financing.

Dividend yield (DYD) has a negative association with TOBQ ($r = -0.1172$, $p < 0.01$). There is no significant link between firm size (SIZE) and TOBQ ($r = -0.0076$, $p = 0.5920$). However, free cash flow (FCF) is positively correlated with TOBQ ($r = 0.1957$, $p < 0.01$). Ownership concentration (OWN) has a weak negative connection with TOBQ ($r = -0.0269$. $p < 0.10$). Debt (DEBT) is adversely correlated with DYD ($r = -0.2515$, $p < 0.01$) and FCF ($r = -0.1378$, $p < 0.01$), but favorably correlated with SIZE ($r = 0.1364$, $p < 0.01$). DYD shows a positive connection with FCF ($r = 0.2274$, $p < 0.01$) and OWN ($r = 0.0980$, $p < 0.01$).

SIZE shows a small positive association with FCF ($r = 0.1272$, $p < 0.01$) and OWN ($r = 0.0372$, $p < 0.01$). Finally, FCF and OWN have a weak positive connection ($r = 0.0454$, $p < 0.01$). The presented correlation table shows no strong indication of multicollinearity among the variables. This study verifies that the dataset is suitable for further regression modeling.

While Table 3 shows that multicollinearity is not a major concern, it is recommended to check this with additional tests for diagnosis, such as the variance inflation factor (VIF), during the regression analysis phase. In Appendix A, all VIF values are below 2 (e.g., 1.10621 for DEBT, 1.125073 for DYD). These results indicate no serious multicollinearity issues in our dataset.

It implies that the independent variables (DEBT, DYD, SIZE, FCF,) are not strongly correlated with each other. It suggests that the regression model's coefficient estimates are likely stable and not unduly influenced by multicollinearity.

5.4. Correlation Analysis

Table 3. Cross-Correlation Matrix of Variables.

Variable	TOBQ	DEBT	DYD	SIZE	FCF	OWN
TOBQ	1.0000					
DEBT	-0.3700***	1.0000				
	0.0000					
DYD	-0.1172***	-0.2515***	1.0000			
	0.0000	0.0000				
SIZE	-0.0076	0.1364***	0.0335**	1.0000		
	0.5920	0.0000	0.0176			
FCF	0.1957***	-0.1378***	0.2274***	0.1272***	1.0000	
	0.0000	0.0000	0.0000	0.0000		
OWN	-0.0269*	0.0166	0.0980***	0.0372***	0.0454***	1.0000
	0.0563	0.2389	0.0000	0.0083	0.0013	

Note: *** ,** and * indicate statistical significance at the 1% , 5% and 10% levels respectively.

5.5. Regression Analysis

According to Table 4, the OLS fixed-effects model reveals significant relationships between leverage, dividend policy, and firm value. The debt ratio (DEBT) shows a strong negative correlation with Tobin's Q ($\beta = -0.832$, $t = -13.580$), indicating that higher leverage reduces firm valuation due to

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financial distress risks. Similarly, dividend yield (DYD) negatively affects Tobin's Q (β = -12.582, t = -11.153), suggesting the market interprets high payouts as a signal of diminished growth prospects. However, the interaction term DEBT × DYD (β = 16.229, t = 7.245) exhibits a significant positive effect, highlighting the strategic complementarity between leverage and dividends in mitigating their individual drawbacks. The Chaebol dummy variable (CHAEBOLDUMMY) negatively affects firm value (β = -0.101, t = -2.603), but the interactions DEBT × CHAEBOLDUMMY (β = 0.154, t = 2.135) and DYD × CHAEBOLDUMMY (β = 0.766, t = 1.855) are positive, suggesting that Chaebol firms optimize debt and dividend policies to enhance valuation. Control variables indicate that firm size (SIZE) slightly reduces Tobin's Q (β = -0.012, t = -2.285), while free cash flow (FCF) positively impacts it (β = 0.515, t = 5.691). The OLS model demonstrates strong predictive power (R^2 = 0.780, Adj. R^2 = 0.752) but might be potentially biased due to endogeneity concerns. The Hausman test (Chi^2 = 86.766, p < 0.01) justifies the use of fixed effects, while firm-clustered standard errors and Durbin-Watson statistics indicate robustness against autocorrelation.

Table 4. OLS Fixed Effects Results.

Dependent Variable	**TOBINS Q**	
Estimated Specification	**TOB.Q = f (DEBT, DYD, DEBT × DYD, DEBT × CHAEBOLDUMMY, DYD × CHAEBOLDUMMY, SIZE, FCF)**	
Estimation Model	**OLS**	
Independent Variables	Beta	t-statistics
INTERCEPT	1.411***	10.175
DEBT	-0.832***	-13.58
DYD	-12.582***	-11.153
DEBT × DYD	16.229***	7.245
CHAEBOLDUMMY	-0.101***	-2.603
DEBT × CHAEBOLDUMMY	0.154**	2.135
DYD × CHAEBOLDUMMY	0.766*	1.855
SIZE	-0.012**	-2.285
FCF	0.515***	5.691
Year Fixed Effect	Yes	
Firm Fixed Effect	Yes	
R^2	0.78	
Adj. R^2	0.752	
F-statistics	27.547***	
Prob(F-stat.)	0.000	
Hausman_Chi^2	86.766***	

Note: Beta corresponds to the coefficients. Numbers inside the parentheses are the t-statistics.***,**,and * show the statistical significance at the 1%, 5% and 10% levels respectively. D.W.~2.01.

5.6. Discussion

The empirical results reveal extensive views into the provided hypotheses. It shows the observed trends of interaction of debt, dividend policy, ownership structures, and firm value in the Korean stock market. The significant negative association between debt capital (DEBT) and firm value (Tobin's Q) supports H1, emphasizing the adverse effect of excessive debt carriage on valuation. This might be due to increased financial distress costs and limited flexibility for investment possibilities. Similarly, the strong negative influence of dividend yield (DYD) on firm value supports the second hypothesis H2. The implication is that dividends may be regarded as a substitute for reinvestment in growth opportunities . This also might suggest a potential misalignment with investor aspirations for long-term economic or value creation.

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But the positive and significant interaction term involving debt and dividend yield (DEBT × DYD) offers solid support for the third hypothesis, H3. This suggests a mitigating impact where the strategic combination of debt and dividend disbursements boosts business valuation. This synergy is most likely caused by dividends' complementary signaling benefits and debt's disciplinary function, which collectively counterbalance the individual negative effects of these policies.

The Chaebol dummy variable (CHAEBOLDUMMY) has a negative effect on Tobin's Q, supporting H4. This evidence suggests that Chaebol-affiliated firms independently may have lower firm valuation, which is frequently attributed to opaque governance frameworks, tunneling activities, and entrenched management behaviors that worsen agency conflicts. The positive interaction between debt and the Chaebol dummy (DEBT × CHAEBOLDUMMY) validates H5, indicating that Chaebol businesses use debt more efficiently to discipline management and maximize resource allocation, resulting in higher company valuation. The interaction between dividend yield and the Chaebol dummy (DYD × CHAEBOLDUMMY) supports H6, indicating that dividends in Chaebol enterprises are a reliable indicator of financial health and stability, addressing concerns about expropriation of minority shareholders and governance inefficiencies.

These findings make an important contribution to corporate finance literature towards the resolution of the long-standing "Korean discount". This is the Korean firms' propensity to trade at lower valuations than their global rivals.

Through the observed trends in the empirical results, it is revealed that strategic financial policies and governance mechanisms could interact to significantly improve firm value. Therefore this research provides actionable insights into mitigating the Korean discount. Specifically, it shows the importance of employing debt capital and dividends as complementary tools to signal firm strength while underlining the need for governance reforms, especially in Chaebol firms. The end objective is to enhance transparency and boost the investor confidence.

This investigation resolves a significant pain point by proposing empirically supported strategies for reconciling competing stakeholder interests and aligning governance practices with market expectations. This work not only increases theoretical awareness, but also provides policymakers and corporate managers with practical strategies for improving business valuation, resulting in a more vibrant and transparent corporate climate in South Korea.

5.7. Robustness Test

In the case of our investigation, using an OLS fixed-effects model to control for unobserved heterogeneity across corporations and time does not adequately address the potential endogeneity concerns raised by Chen et al., 2005, Chen and Steiner (1999) and Cho (1998). Dividend policy, ownership structure, and capital structure may all be simultaneously determined. Therefore their interdependence might generate reverse causality and simultaneity bias. This shows that OLS estimates may be skewed and inconsistent, requiring more robust econometric approaches to ensure reliable interpretation.

These concerns are efficiently addressed using two-stage least squares (2SLS) and the generalized method of moments (GMM). 2SLS uses instrumental variables to separate exogenous variation in possibly endogenous regressors, hence reducing simultaneity bias. GMM, on the other hand, uses moment conditions to adjust for endogeneity while also supporting heteroskedasticity and dynamic panel data structures, making it an excellent fit for our panel dataset.

The dispute about causation in the influence of dividend policy on firm value derives from the bidirectional links inherent in corporate finance. While dividend payouts may have an impact on the value of firms through signaling effects or reducing agency costs, firm value may drive dividend policy, as highly valued enterprises are better positioned to deliver dividends. These complications necessitate empirical models that can disentangle causality, such as those that use instrumental variables or dynamic modeling methodologies like GMM.

According to Table 5, the 2SLS estimations, addressing endogeneity concerns, generally confirm the OLS findings but with larger magnitudes. Debt ratio (DEBT) shows a stronger negative impact

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on Tobin's Q (β = -1.386, t = -17.570), reinforcing concerns about financial distress under high leverage. Dividend yield (DYD) also demonstrates a sharper negative effect (β = -24.543, t = -10.601), emphasizing the perceived trade-off with growth opportunities. However, the positive effect of the interaction DEBT × DYD (β = 11.989, t = 2.399) persists, albeit with reduced significance, supporting the argument of strategic synergy. CHAEBOLDUMMY has a more pronounced negative impact on firm value (β = -0.178, t = -2.857), while the interaction terms DEBT × CHAEBOLDUMMY (β = 0.299, t = 2.743) and DYD × CHAEBOLDUMMY (β = 5.927, t = 2.663) exhibit stronger positive effects, reflecting effective financial strategies in Chaebol firms. Control variables maintain consistent effects: firm size (SIZE) remains slightly negative (β = -0.012, t = -1.757), while free cash flow (FCF) shows a significantly positive impact (β = 4.912, t = 12.322).

Table 5. 2SLS Results.

Dependent Variable	**TOBINS Q**	
TOB.Q = f (DEBT, DYD, DEBT × DYD, DEBT × CHAEBOLDUMMY, DYD × CHAEBOLDUMMY, SIZE, FCF)		
	2-SLS	
Independent Variables	Beta	t-statistics
INTERCEPT	1.620***	8.012
DEBT	-1.386***	-17.57
DYD	-24.543***	-10.601
DEBT × DYD	11.989**	2.399
CHAEBOLDUMMY	-0.178***	-2.857
DEBT × CHAEBOLDUMMY	0.299***	2.743
DYD × CHAEBOLDUMMY	5.927	2.663
SIZE	-0.012*	-1.757
FCF	4.912***	12.322
Year Fixed Effect		
Firm Fixed Effect		
R^2	0.127	
Adj. R^2	0.125	
F-statistics	116.287***	
Prob(F-stat.)	0.000	
Hausman_Chi^2		

Note: Beta corresponds to the coefficients. Numbers inside the parentheses are the t-statistics.***,**,and * show the statistical significance at the 1%, 5% and 10% levels respectively. D.W.~2.01.

Under the model diagnostics, the 2SLS model, addressing endogeneity concerns, has lower, predictive power compared to the OLS fixed effects model, with R^2 (0.127, Adj. R^2 = 0.125) due to its focus on exogenous variation. Durbin-Watson statistics indicate robustness against autocorrelation.

5.8. Additional Robustness Test

The Generalized Method of Moments (GMM) estimation results in Table 6 supports the robustness of the results from earlier estimations using the OLS and 2SLS models. In addition, it reveals dynamic linkages in firm value. The positive and significant coefficient of the lagged Tobin's Q (0.4388, $p < 0.01$) emphasizes the persistence in firm valuation, demonstrating the dynamic nature of Tobin's Q and confirming that previous market performances of the firm significantly impact the present valuation patterns.

In the main effects the negative and highly significant coefficient of DEBT (-1.9908, $p < 0.01$) reinforces H1, supporting the hypothesis that higher debt levels lower firm value due to excessive financial distress and weakened operational flexibility.

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Similarly, the strong negative impact of dividend yield (-31.9900, $p < 0.01$) confirms H2, reflecting market predisposition in Korea where high dividend payouts are interpreted as signals of constrained growth opportunities.

Based on the interaction effects for DEBT × DYD, the positive and significant coefficient (31.7996, $p < 0.05$) provides robust support for H3, indicating that the adverse effects of debt and dividends are mitigated when these policies are combined. This interplay suggests that firms utilizing both strategies may better signal financial stability and governance efficacy, aligning with the complementary signaling hypothesis. For DEBT × CHAEBOLDUMMY, the positive coefficient (0.7222, $p < 0.05$) corroborate H5, suggesting that chaebol-affiliated firms derive valuation benefits from utilizing debt, potentially due.

Table 6. Results of the GMM estimation.

Variable	TOBINS Q			
	Coefficient	**t-Statistic**	**Std. Error**	**Prob.**
TOBINS Q_(-1)	0.4838	8.7108	0.0504	0.0000
DEBT	-1.9908	-4.0370	0.4931	0.0001
DYD	-31.9900	-4.2027	7.6118	0.0000
DEBT × DYD	31.7996	2.0640	15.4070	0.0391
CHAEBOLDUMMY	-0.3667	-1.7804	0.2059	0.0751
DEBT × CHAEBOLDUMMY	0.7222	2.0312	0.3555	0.0423
DYD × CHAEBOLDUMMY	6.3376	1.1724	5.4058	0.0024
SIZE	-0.0021	-1.8220	0.0131	0.0826
FCF	0.1760	2.8244	0.2135	0.0041
Cross-section fixed (first differences)	Yes			
S.E. of regression	0.3571			
J-statistic	87.0255			
Prob(J-statistic)	0.1078			
Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	-8.6024	-181.6561	21.1170	0.0000
AR(2)	-0.4189	-4.1732	9.9614	0.6753

Note: Beta corresponds to the coefficients. Numbers inside the parentheses are the t-statistics.***,**,and * show the statistical significance at the 1%, 5% and 10% levels respectively.

to enhanced monitoring mechanisms and implicit guarantees within the conglomerate structure. In terms of DYD × CHAEBOLDUMMY, the significant positive coefficient (6.3376, $p < 0.01$) supports H6, highlighting that dividend payouts in chaebol firms are perceived as value-enhancing mechanisms, likely reflecting investor confidence in Chaebol governance practices

As for the control variables, the marginally significant negative effect of firm size (-0.0021, $p = 0.08$) suggests that larger firms may face diminishing returns or heightened scrutiny from shareholders, consistent with scale inefficiencies. On the contrary, the positive and highly significant coefficient of free cash flow (0.1760, $p < 0.01$) strengthens its role as a critical determinant of firm value, supporting the hypothesis that liquidity enhances operational flexibility and investment potential.

In the model performance, the diagnostics show robustness in the GMM model estimations. The validity of the instrumental variables is confirmed by the J-statistic (87.0255, $p = 0.1078$). The AR(2) test confirms that there is no second-order serial correlation ($p = 0.6753$), guaranteeing the reliability of the dynamic panel data estimation.

The results confirm the hypothesized associations, especially the negative effects of debt and dividends on firm value (H1, H2), while underlining the moderating function of their interaction terms (H3). Additionally, Chaebol affiliation influences the dynamics of firm valuation significantly, with interactions terms of chaebol ownership, debt, and dividend policies positively influencing firm

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value (H5, H6). These trends amplify how effective governance practices and strategic financial policies might counteract the negative valuation implications of the Korean discount.

6. Conclusion

This study investigated the complex relationships between debt capital, dividend policy, Chaebol affiliation, and firm valuation within the environment of Korean corporations. Grounded in agency theory and corporate governance frameworks, this research furnished empirical evidence on how these indicators individually and interactively impact firm value. This signifies an empirically evidence-based effort, aimed at tackling the haunting "Korean discount" phenomenon. The results reveal that while debt ratio and dividend policy negatively impact firm value independently, their interaction offsets these effects, signaling a synergistic role in mitigating agency problems. In addition, Chaebol affiliation magnify the positive effects of these interactions, showcasing the unique governance mechanisms that characterize the affected conglomerate structures.

This research contributes in interesting ways. Theoretically, it advances agency theory by showing the moderating impact of ownership structures such as the Chaebols in reconciling agency conflicts linked to debt and dividend choices. It provides practical suggestions for corporations and regulators looking to improve firm valuation through capital structure and governance reforms. The findings highlight the need of monitoring capital allocation policies and governance processes in order to maximize returns for shareholders.

This research has ramifications for theory, practice, and shareholders. It complements existing theories on corporate governance and capital structure by stressing the complementary benefits of debt capital and dividend policies in lowering agency costs. It also emphasizes the dual role of the Chaebol governance, which, while questioned for its entrenchment hazards, has the capacity to increase value by means of implicit guarantees and capacity pooling. These findings expand our awareness of how ownership patterns influence the successful implementation of fiscal policies.

In terms of practical implications, the findings underline the necessity for corporate management to ensure a strategic alignment between leverage and dividend selections. Corporations can improve their valuation by using integrative fiscal approaches that demonstrate stability and governance quality. Chaebol enterprises, in particular, can use their governance strengths to offset the Korean discount, but Non-Chaebol firms should focus on transparent governance improvements to lure investors.

This investigation supplies investors with a deeper understanding of how governance practices and economic policies affect corporate value. Shareholders can utilize these information to evaluate a company's financial strategies and governance quality, allowing them to make more informed decisions and advocate for reforms where necessary.

The results offer evidence-based policy recommendations for dealing with systemic inefficiencies. Policymakers should encourage companies to pursue balanced debt strategies, stressing the importance of financial leverage in signaling governance quality. Strengthening shareholder rights and increasing transparency in all corporations can help to close the valuation gap caused by the Korean discount. Policymakers should encourage businesses to connect dividend payouts with growth potential, thereby diminishing market perceptions of dividends as a replacement for investment opportunities.

Notwithstanding its significant results, our study carries some limitations that require caution. First, using Tobin's Q as a proxy for firm value may not capture all valuation determinants, such as innovation or market sentiment. Second, while the research is extensive, the emphasis on Chaebol versus Non-chaebol enterprises limits its applicability to alternative ownership structures. Third, the use of Korean data may obscure country-specific variations that could further enrich the understanding of governance dynamics.

Future research could address these limitations by incorporating alternative valuation metrics, extending the analysis to other governance models, and employing cross-country case studies to validate findings.

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This paper provides a detailed understanding of how financial policies and governance processes combine to influence firm value in the Korean environment, as well as actionable suggestions for lowering the Korean discount and improving corporate approaches to valuation.

Appendix A Multicollinearity Test

Variable	Coefficient Variance	Centered VIF
DEBT	1.201×10−3	1.106
DYD	3.221×10−1	1.125
SIZE	2.39×10−5	1.045
FCF	1.556×10−2	1.083
OWN	2.41×10−7	1.013

References

1. Andrade, G., & Kaplan, S. N. (1998). How Costly Is Financial (Not Economic) Distress? Evidence from Highly Leveraged Transactions That Became Distressed. The Journal of Finance, 53(5), 1443–1493. http://www.jstor.org/stable/117414
2. Asquith, P., & Mullins, D. W. (1983). The impact of initiating dividend payments on shareholders' wealth. The Journal of Business, 56(1), 77–96. http://www.jstor.org/stable/2352747
3. Atanassov, J., & Mandell, A. J. (2018). Corporate governance and dividend policy: Evidence of tunneling from master limited partnerships. Journal of Corporate Finance, 53, 106-132. https://doi.org/10.1016/j.jcorpfin.2018.10.004
4. Bae, K.-H., Kang, J.-K., & Kim, J.-M. (2002). Tunneling or value added? Evidence from mergers by Korean business groups. Journal of Finance, 57(6), 2695–2740. https://doi.org/10.1111/1540-6261.00510
5. Baek, J.-S., Kang, J.-K., & Park, K. S. (2004). Corporate governance and firm value: Evidence from the Korean financial crisis. Journal of Financial Economics, 71(2), 265–313. https://doi.org/10.1016/S0304-405X(03)00167-3
6. Baker, M., & Wurgler, J. (2002). Market Timing and Capital Structure. The Journal of Finance, 57(1), 1–32. http://www.jstor.org/stable/2697832
7. Black, F., & Scholes, M. (1974). The effects of dividend yield and dividend policy on common stock prices and returns. Journal of Financial Economics, 1(1), 1–22. https://doi.org/10.1016/0304-405X(74)90006-3
8. Bhattacharya, S. (1979). Imperfect Information, Dividend Policy, and "The Bird in the Hand" Fallacy. The Bell Journal of Economics, 10(1), 259–270. https://doi.org/10.2307/3003330
9. Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout policy in the 21st century. Journal of Financial Economics, 77(3), 483–527. https://doi.org/10.1016/j.jfineco.2004.07.004
10. Brockman, P., & Unlu, E. (2009). Dividend policy, creditor rights, and the agency costs of debt. Journal of Financial Economics, 92(2), 276–299. https://doi.org/10.1016/j.jfineco.2008.03.007
11. Brounen, D., de Jong, A., & Koedijk, K. (2006). Capital structure policies in Europe: Survey evidence. Journal of Banking & Finance, 30(5), 1409–1442. https://doi.org/10.1016/j.jbankfin.2005.02.010
12. Chen, C.R., Steiner, T.L., 1999. Managerial ownership and agency conflicts: A nonlinear simultaneous equation analysis of managerial ownership, risk taking, debt policy, and dividend policy. The Financial Review 34, 119 – 136.
13. Chen, Z., Cheung, Y.-L., Stouraitis, A., & Wong, A. W. S. (2005). Ownership concentration, firm performance, and dividend policy in Hong Kong. Pacific-Basin Finance Journal, 13(4), 431–449. https://doi.org/10.1016/j.pacfin.2004.12.001
14. Cho, M.H., 1998. Ownership structure, investment, and the corporate value: An empirical analysis. Journal of Financial Economics 47, 103 – 121.
15. Chindengwike, J. D. (2024). Nexus between financial leverage and dividend payout from manufacturing firms listed at Dar es Salaam stock exchange, Tanzania. Cogent Business & Management, 11(1). https://doi.org/10.1080/23311975.2023.2292345

16. Claessens, Stijn & Djankov, Simeon & Joseph P. H. Fan & Lang, Larry H. P., 1999. "Expropriation of minority shareholders : evidence from East Asia," Policy Research Working Paper Series 2088, The World Bank.
17. Claessens, S., Djankov, S., Joseph P. H. Fan, & Larry H. P. Lang. (2002). Disentangling the Incentive and Entrenchment Effects of Large Shareholdings. The Journal of Finance, 57(6), 2741–2771. http://www.jstor.org/stable/3094542
18. Cooper, I. A., & Lambertides, N. (2018). Large dividend increases and leverage. Journal of Corporate Finance, 48, 17–33. https://doi.org/10.1016/j.jcorpfin.2017.10.011
19. Diedrich, R., Dierkes, S., & Gröger, H.-C. (2022). A note on the cost of capital with fixed payout ratios. Review of Quantitative Finance and Accounting, 59(4), 1559–1575. https://doi.org/10.1007/s11156-022-01085-5
20. Ducret, R., & Isakov, D. (2020). The Korea discount and Chaebols. Pacific-Basin Finance Journal, 63, 101396. https://doi.org/10.1016/j.pacfin.2020.101396
21. Easterbrook, F. H. (1984). Two agency-cost explanations of dividends. American Economic Review, 74(4), 650–659. https://www.jstor.org/stable/1805130
22. Fama, E. F., & French, K. R. (2002). Testing trade-off and pecking order predictions about dividends and debt. Review of Financial Studies, 15(1), 1–33. https://doi.org/10.1093/rfs/15.1.1
23. Farinha, J. (2003). Dividend policy, corporate governance and the managerial entrenchment hypothesis: An empirical analysis. Journal of Business Finance & Accounting, 30(9-10), 1173–1209. https://doi.org/10.1111/j.0306-686X.2003.05624.x
24. González, V. M. (2013). Leverage and corporate performance: International evidence. International Review of Economics & Finance, 25(C), 169-184. https://doi.org/10.1016/j.iref.2012.07.005
25. Graham, J. R., & Harvey, C. R. (2001). The theory and practice of corporate finance: Evidence from the field. Journal of Financial Economics, 60(2–3), 187–243. https://doi.org/10.1016/S0304-405X(01)00044-7
26. Gordon, M. J. (1963). Optimal investment and financing policy. The Journal of Finance, 18(2), 264–272. https://doi.org/10.1111/j.1540-6261.1963.tb00722.x
27. Grullon, G., Michaely, R., & Swaminathan, B. (2002). Are Dividend Changes a Sign of Firm Maturity? The Journal of Business, 75(3), 387–424. https://doi.org/10.1086/339889
28. Grullon, G., Michaely, R., Benartzi, S., & Thaler, R. H. (2005). Dividend changes do not signal changes in future profitability. The Journal of Business, 78(5), 1659–1682. https://doi.org/10.1086/431438
29. Harris, R. S., & Pringle, J. J. (1985). Risk-adjusted discount rates—Extensions from the average-risk case. Journal of Financial Research, 8(3), 237–244. https://doi.org/10.1111/j.1475-6803.1985.tb00406.x
30. Harvey, C. R., Lins, K. V., & Roper, A. H. (2004). The effect of capital structure when expected agency costs are extreme. Journal of Financial Economics, 74(1), 3-30. https://doi.org/10.1016/j.jfineco.2003.07.003
31. Huang, Y., Chen, A., & Kao, L. (2012). Corporate governance in Taiwan: The nonmonotonic relationship between family ownership and dividend policy. Asia Pacific Journal of Management, 29(1), 39–58. https://doi.org/10.1007/s10490-011-9279-z
32. Hussainey, K., Mgbame, C. O., & Chijoke-Mgbame, A. M. (2011). Dividend policy and share price volatility: UK evidence. Journal of Risk Finance, 12(1), 57–68. https://doi.org/10.1108/15265941111100076
33. Jeon, J. Q., Lee, C., & Moffett, C. M. (2011). Effects of foreign ownership on payout policy: Evidence from the Korean market. Journal of Financial Markets, 14(2), 344–375. https://doi.org/10.1016/j.finmar.2010.08.001
34. Jensen, M. C. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. The American Economic Review, 76(2), 323–329. http://www.jstor.org/stable/1818789
35. Kang, S. (2023). Analysis on the causes behind the Korea discount. SSRN. https://doi.org/10.2139/ssrn.4922773
36. Kayhan, A., & Titman, S. (2007). Firms' histories and their capital structures. Journal of Financial Economics, 83(1), 1–32. https://doi.org/10.1016/j.jfineco.2005.10.007
37. Kim, & Lee, (2024). The Moderating Effect of Corporate Governance on the Relationship between Ownership Concentration and Firm Value. Korean Association Of Computers And Accounting. 22. 91-114. 10.32956/kaoca.2024.22.1.91.

 doi:10.20944/preprints202501.0227.v1

38. La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2000). Agency problems and dividend policy around the world. Journal of Finance, 55(1), 1–33. https://doi.org/10.1111/0022-1082.00199
39. Lang, L. H. P., & Litzenberger, R. H. (1989). Dividend announcements: Cash flow signalling vs. free cash flow hypothesis? Journal of Financial Economics, 24(1), 181-191. https://doi.org/10.1016/0304-405X(89)90077-9.
40. Lee, Y., & Tulcanaza-Prieto, A. B. (2024). The Effect of Corporate Governance on the Degree of Agency Cost in the Korean Market. Risks, 12(4), 59. https://doi.org/10.3390/risks12040059
41. Lintner, J. (1956). Distribution of Incomes of Corporations Among Dividends, Retained Earnings, and Taxes. The American Economic Review, 46(2), 97–113. http://www.jstor.org/stable/1910664
42. Lintner, J. (1963). The cost of capital and optimal financing of corporate growth. The Journal of Finance, 18(2), 292–310. https://doi.org/10.1111/j.1540-6261.1963.tb00725.x
43. Majid, I. F., & Abu Samrah, W. H. (2015). The impact of combined level of capital structure and dividend policy on firm stock price: An applied study of companies listed on Amman Stock Exchange. Journal of Economics and Administrative Science, 21(86), 2–24. Available at https://search.emarefa.net/detail/BIM-700124
44. Miles, J. A., & Ezzell, J. R. (1980). The weighted average cost of capital, perfect capital markets, and project life: A clarification. Journal of Financial and Quantitative Analysis, 15(3), 719–730. https://doi.org/10.2307/2330405
45. Modigliani, F., & Miller, M. H. (1963). Corporate Income Taxes and the Cost of Capital: A Correction. The American Economic Review, 53(3), 433–443. http://www.jstor.org/stable/1809167
46. Nielsen, A. E. B. (2005). Corporate governance, leverage, and dividend policy. EFA 2006 Zurich Meetings. Available at SSRN: https://ssrn.com/abstract=906339 or http://dx.doi.org/10.2139/ssrn.906339
47. Njoku, O. E., & Lee, Y. (2024). Revisiting the effect of dividend policy on firm performance and value: Empirical evidence from the Korean market. International Journal of Financial Studies, 12(22). https://doi.org/10.3390/ijfs12010022
48. Njoku, O. E., Lee, Y., & Koo, J. H. (2024). The effects of agency problems and dividend policy on the asymmetric behaviour of selling, general and administrative expenses: Does ownership structure matter? Academy of Management Journal of Accounting and Finance, 20(2), 29–84. https://doi.org/10.21315/aamjaf2024.20.2.2
49. Officer, M. S. (2011). Overinvestment, corporate governance, and dividend initiations. Journal of Corporate Finance, 17(3), 710–724. https://doi.org/10.1016/j.jcorpfin.2010.06.004
50. Profilet, K. A. (2013). Dividend policy and stock price volatility in the U.S. equity capital market. Journal of Business and Behavioral Sciences, 25, 63. Retrieved from https://api.semanticscholar.org/CorpusID:153188632
51. Rozeff, M. S. (1982). Growth, beta, and agency costs as determinants of dividend payout ratios. The Journal of Financial Research, 5(3), 249–259. https://doi.org/10.1111/j.1475-6803.1982.tb00299.x
52. Seth, R., & Mahenthiran, S. (2022). Impact of dividend payouts and corporate social responsibility on firm value – Evidence from India. Journal of Business Research, 146, 571–581. https://doi.org/10.1016/j.jbusres.2022.03.053
53. Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. Journal of Political Economy, 94(3), 461–488. http://www.jstor.org/stable/1833044
54. Shleifer, A., & Vishny, R. W. (1992). Liquidation values and debt capacity: A market equilibrium approach. The Journal of Finance, 47(4), 1343–1366. https://doi.org/10.2307/2328943
55. Tulcanaza-Prieto, A. B., Lee, Y., & Anzules-Falcones, W. (2024). The Moderating Role of Corporate Governance in the Relationship between Leverage and Firm Value: Evidence from the Korean Market. Risks, 12(1), 11. https://doi.org/10.3390/risks12010011
56. Welch, I. (2004). Capital Structure and Stock Returns. Journal of Political Economy, 112(1), 106–131. https://doi.org/10.1086/379933

 doi:10.20944/preprints202501.0227.v1

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