Promoter share pledging and dividend payouts in India: does family involvement matters?

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Abstract

Purpose – This study aims to explore the relationship between promoter share pledging and the company's dividend payout policy in India. Furthermore, this study also analyses the moderating impact of family involvement in business on the association between share pledging and dividend payout.

Design/methodology/approach – A sample of 236 companies from the S&P Bombay Stock Exchange Sensitive (BSE) 500 Index (2014–2023) has been analysed through fixed-effects panel data regression. For additional testing, robustness checks include alternative measures of dividend payout and promoter share pledging, as well as alternative methodologies such as Bayesian regression. Lastly, to address potential endogeneity, instrumental variables with a two-stage least squares (IV-2SLS) methodology have been implemented.

Findings – Upholding the agency perspective, a significantly negative impact of promoter share pledging on corporate dividend payouts in India has been uncovered. Moreover, family involvement in business moderates this relationship, highlighting that the negative association between promoter share pledging and dividend payouts is more pronounced in family companies. The findings are consistent throughout the robustness testing.

Originality/value – The present study represents a pioneering endeavour to empirically analyse the link between promoter share pledging and dividend payouts in India. It enhances the theoretical underpinnings of the agency relationship, particularly by substantiating the existence of Type II agency conflicts between majority and minority shareholders. The findings of this research bear significant implications for investors, researchers and policymakers, particularly in light of the widespread prevalence of promoter-controlled entities in India.

Keywords Promoter share pledging, Dividend policy, Family involvement in business, India

Paper type Research paper

1. Introduction

The dividend policy of a firm stands as a strategic managerial decision, shaping the allocation of cash profits amongst shareholders. Despite its significance, empirical analyses conducted over the years have uncovered the intricate nature of the dividend payout policy. Ooi (2001) ascertains that far from being a straightforward directive, the dividend policy proves to be a labyrinthine challenge for corporate managers, investors and researchers alike. Within the investor community, there exists an expectation for compensation in light of the risks associated with investing in corporate securities. Companies, in response, can opt to distribute dividends from annual profits or focus on bolstering their share prices, thereby

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amplifying shareholder capital gains. Dividends represent current income, offering investors a return on their investment for the assumed risk. Conversely, if a company identifies a promising investment opportunity, it may choose to reinvest its profits instead of paying them as dividends. Investing in future projects has the potential to increase the company's value, leading to capital gains for investors in the form of future income. The discourse on the dividend payout policy spans various theories, from the irrelevance of dividend policy explanation by Miller and Modigliani (1961) to the "bird-in-hand" argument by Gordon (1963) and signalling theory by Solomon (1963) and Ross (1977). Considering these diverse perspectives, the dividend payout policy remains an unsolved enigma. Accordingly, Brealey and Myers (2002) have aptly termed it the "dividend controversy", underscoring its status as one of the ten most critical and unresolved managerial decisions.

Numerous factors are recognised to be linked to the development of a company's dividend policy. Amongst the frequently examined aspects are investment opportunities, yield, company size, profitability, liquidity and the age of the firm (Jensen *et al.*, 1992; Alli *et al.*, 1993; Holder *et al.*, 1998; Fama and French, 2001; Kent Baker *et al.*, 2007; Komrattanapanya and Suntraruk, 2013; Wahjudi, 2020). Additionally, the presence of controlling shareholders has also been found to be inextricably linked to the dividend policy of a company (Jensen, 1986; Roy, 2015; Firth *et al.*, 2016; Jiang *et al.*, 2017; Singh *et al.*, 2023). The outcome of the extant literature remains mixed as a section upholds that controlling shareholders prefer retaining profits instead of paying cash dividends for furthering their self-interests (e.g. Easterbrook, 1984; Jiang *et al.*, 2017; Xu and Huang, 2021). On the other hand, contrasting studies posit that in order to alleviate concerns of expropriation of minority shareholders, controlling shareholders prefer paying high cash dividends (e.g. La Porta *et al.*, 2000; Firth *et al.*, 2016).

The promoter and promoter group constitute an important part as controlling shareholders within the Indian economy, where a significant portion of companies are either fully or partially owned by these influential entities. Typically, individuals or families, promoters wield control over companies due to their substantial shareholding and managerial rights (Bertrand *et al.*, 2002; Shleifer, 2005). For financial support, promoters often resort to pledging their shares as collateral to secure loans or investments. Share pledging introduces inherent risks, notably triggering margin calls and subsequent mandatory liquidation (Chan *et al.*, 2018). Consequently, the cash-flow rights of the promoter group are diminished, impacting their payout incentives (Dou *et al.*, 2019). Faced with margin call pressures resulting from falling share prices, promoters may be inclined to adopt a high dividend payout policy, as increased cash dividends are generally viewed positively by shareholders (Aharony and Swary, 1980; Asquith and Mullins, 1983). Alternatively, promoters may choose to retain cash within the company for bolstering future reserves. Therefore, determining appropriate payout policies becomes a conundrum for corporates.

During share pledging, although the cash-flow rights of promoters are reduced, their control rights remain intact. This scenario exacerbates agency conflicts between majority and minority shareholders (Kao *et al.*, 2004; Attig *et al.*, 2006; Sun *et al.*, 2017). The informational opacity surrounding share pledging may tempt promoters to withhold dividends, channelling cash instead into activities aligned with their self-interests. Given these circumstances, it becomes imperative to explore the relationship between promoter share pledging and dividend payout policy in order to better understand the dynamics at play.

In addition to investigating the relationship between promoter share pledging and dividend payouts in India, this study also delves into how family involvement in business moderates this connection. Notably, not all companies with concentrated shareholdings are inherently family-owned, as promoter ownership can also be individually denominated (Balasubramanian and Anand, 2013). Prominent family-based companies in India, such as

Reliance ADA Group, Zee Entertainment Enterprises Limited, Café Coffee Day and Vedanta Limited, exhibit significant pledged holdings due to substantial ownership and managerial controls. Whilst higher pledged promoter shareholding may not always be detrimental, yet the pressure of margin calls on encumbered shares during crises could be challenging. Additionally, family involvement in business may influence a company's dividend policy, since family companies may distribute higher dividends to address concerns related to entrenchment arising from greater family control (Morck and Yeung, 2003). Alternatively, family companies may adopt a low dividend payout policy to preserve family control and the company's earnings (Schulze *et al.*, 2003; Vandemaele and Vancauteren, 2015). Consequently, it is anticipated that family involvement in business can impact both promoters share pledging and dividend payouts.

The current study holds significant importance within the Indian business landscape, particularly due to its focus on family-dominated enterprises with substantial promoter shareholding (Chakrabarti *et al.*, 2008). According to Sethuraman (2022), in the first quarter of the financial year 2022–2023, promoter share pledging reached 0.86% of the S&P BSE 500 Index, equivalent to Rs 2.1 trillion. This substantial level of pledged shareholding raises concerns as it may indicate underlying financial instability or a lack of confidence in the company's prospects. Given the limited research on promoter share pledging and its far-reaching implications, there is a critical need to investigate this issue further.

On the other hand, dividends also merit thorough exploration. Despite Miller and Modigliani (1961) asserting that investors should remain indifferent to dividends and capital gains, Hartzmark and Solomon (2019) indicate a stronger preference amongst investors for dividends. Additionally, Ham *et al.* (2020) have uncovered empirical evidence demonstrating a positive impact of dividend payouts on future earnings. Therefore, considering these evidences, it becomes evident that the dividend payout policy holds significant importance and represents an important event for various stakeholders. Furthermore, whilst limited existing literature suggests a relationship between promoter share pledging and dividend payouts, the absence of any Indian study provides ample motivation to delve deeper into this phenomenon.

This study utilises a sample of 236 companies listed on the S&P BSE 500 Index in India from 2014 to 2023 to explore the relationship between promoter share pledging, family involvement in business and dividend payout policy. Whilst global research has addressed the role of controlling shareholders' pledging on dividend payouts, particularly in China and Taiwan (e.g. Li *et al.*, 2020; Chou *et al.*, 2021; Xu and Huang, 2021; Hu *et al.*, 2023), these studies do not exclusively focus on the role of promoter shareholding. Moreover, extensive evidence exists on the impact of family involvement in business on dividend payouts (e.g. González *et al.*, 2014; Benjamin *et al.*, 2016; Sener and Akben Selcuk, 2019; Molly and Michiels, 2022), but its linkage with promoter share pledging remains unexplored. Overall, these issues have not yet been examined in the Indian context.

The outcomes of this study reveal a significantly negative influence of promoter share pledging on corporate dividend payouts in India. The moderation analysis underscores that family involvement in business further exacerbates this negative relationship between promoter share pledging and dividend payouts. This indicates a notably negative association between the family's engagement in share pledging and the company's dividend distribution. The robustness of the baseline findings persisted even after addressing potential endogeneity concerns.

These findings significantly enhance the existing literature in several key aspects. Firstly, whilst the exploration of insider share pledging remains limited (e.g. Li *et al.*, 2020; Chou *et al.*, 2021; Xu and Huang, 2021; Hu *et al.*, 2023), studies specifically focussing on share pledging by promoters are scarce. This study breaks new ground by incorporating this crucial dimension, particularly relevant for emerging economies like India where promoter shareholding is

prevalent. Secondly, by revealing a negative directional relationship between promoter share pledging and dividend payouts amongst Indian companies, the results introduce fresh evidence in a novel market context, complementing similar observations made in the Chinese context. Thirdly, this research advances the perspective of agency theory by empirically supporting the presence of Type II agency costs, particularly prominent amongst family-owned companies in India. Given that the majority of Indian companies are family-owned (Chakrabarti *et al.*, 2008; Jameson *et al.*, 2014), the implications of these findings extend far beyond the scope of this study.

The remainder of the paper is structured as follows. Section 2 provides a comprehensive review of the literature and outlines the development of hypotheses. The research methodology employed in this study is detailed in Section 3. Section 4 delves into the various results emanating from the study. Section 5 includes the discussion on results, and finally, Section 6 offers concluding remarks for the paper.

2. Review of literature and hypotheses development

2.1 Promoter share pledging and dividend payout

Numerous research studies have delved into the ramifications of insiders engaging in share-pledging activities, with a particular emphasis on controlling shareholders. Although the extant literature has not exclusively given attention to the share-pledging activities of promoters, the studies holistically focus on the pledging by insiders or controlling shareholders, of which promoters constitute an important segment. Notably, a controlling shareholder is defined as the largest single owner in a company wielding at least 10% voting rights (Dahya *et al.*, 2009). Conversely, insiders encompass figures such as the chief executive officer (CEO), board of directors, managers, or supervisors (Chou *et al.*, 2021).

The prevailing body of research consistently highlights adverse effects associated with share pledging by insiders or controlling shareholders, imposing detrimental outcomes for both the corporation and its shareholders. Anderson and Puleo (2020) illustrate that influential insiders exploit this mechanism to secure personal gains, often at the expense of external minority shareholders. Correspondingly, Puleo and Kozlowski (2021) underscore concerns by revealing a correlation between heightened levels of insider share pledges and substantial abnormal share returns. Furthermore, these insiders, armed with firm-specific information, strategically time their pledging activities. The detrimental impact of elevated insider share pledging is further highlighted by its association with diminished firm valuation, performance and heightened risk, as evidenced by studies conducted by Kao *et al.* (2004), Wang and Chou (2018), Dou *et al.* (2019), Cheng *et al.* (2024) and Kalia (2024a, b).

Existing studies have extensively examined the agency-based expropriation hypothesis, positing that concentrated ownership leads to a conflict of interests between major and minority shareholders. This conflict results in value being expropriated by the former at the expense of the latter (Shleifer and Vishny, 1997; La Porta *et al.*, 1999; Burkart and Panunzi, 2006). Fama and Jensen (1983) assert that controlling insiders, whilst acting against the interests of minority shareholders, may partake in value-reducing activities that deviate from the firm's objective of maximising value. In the context of share pledging, which is perceived as a practice diminishing overall value, insiders are compelled to maintain a specific collateral value. Failure to meet this obligation triggers a "margin call," forcing insiders to address the shortfall by repaying the loan immediately or pledging additional stakes (Chan *et al.*, 2018). Consequently, this grants lenders the authority to liquidate pledged shares in the open market, adversely impacting shareholder wealth (Xu *et al.*, 2019; Anderson and Puleo, 2020; Chauhan *et al.*, 2021).

On a different note, a subset of literature supports the monitoring hypothesis, suggesting that concentrated ownership, due to significant voting rights and control over management,

can function as an internal governance mechanism, mitigating managerial opportunism. Li *et al.* (2020) observed a significantly positive impact of pledging by the largest shareholders on firm value. In a similar vein, Asija *et al.* (2014) reported that share pledging by promoters reduces the likelihood of accrual-based earnings management.

Highlighted by a series of studies, share pledging emerges with more disadvantages than advantages, potentially culminating in the mandatory liquidation of the pledged shares. Consequently, it is expected that controlling shareholders engaged in extensive share pledging might employ various measures to mitigate these inherent risks. Recognising dividend policy as a pivotal corporate decision known to influence share prices (Lintner, 1956; Aharony and Swary, 1980; Asquith and Mullins, 1983; Bhattacharyya, 2007; Suwanna, 2012), it is postulated to serve as a risk-mitigation strategy for share-pledging insiders.

Drawing insights from agency theory, it is evident that the promoter group is incentivised to retain resources for their own interests (Jensen, 1986). Consequently, it is plausible that high dividend payout policies, which reduce available cash, may be less favourable to promoters seeking to divert resources for personal use. This inclination towards lower dividend payouts is underscored by the potential diversion of cash from the company to promoters' private enterprises through related party transactions (Easterbrook, 1984; Jiang *et al.*, 2017). Moreover, when shares are pledged, the cash-flow rights of promoters, such as dividend receipts, are temporarily frozen, whilst their voting rights remain intact (Kao *et al.*, 2004). In this scenario, promoters are incentivised to retain corporate resources for potential expropriation, thereby favouring a low dividend payout policy.

Empirical evidence strongly supports this assertion. Xu and Huang (2021) found that amongst Chinese companies, controlling shareholders with pledged holdings tend to offer lower cash dividends, particularly evident in firms facing weak monitoring and severe agency problems. Similarly, a study by Li *et al.* (2020) revealed that through share pledging, controlling shareholders could prioritise securing private benefits over the interests of minority outside shareholders, resulting in significantly reduced cash dividend payouts for companies with pledged shares compared to those without. Additionally, Shi *et al.* (2023), also conducting research in China, illustrated that extensive share pledging by controlling shareholders led companies to adopt a low or no dividend payout policy to preserve cash for private benefits. Such pledging behaviour by controlling shareholders sends a negative signal to the market and increases the likelihood of intensified stock selling by other major shareholders (Wang *et al.*, 2023).

Contrary to the aforementioned perspective, an alternative strand in the literature argues that a high dividend payout policy could serve as a signal to mitigate conflicts between controlling and minority shareholders (Easterbrook, 1984; Fluck, 1999). The outcome model proposed by La Porta *et al.* (2000) posits that dividends can function as an effective governance mechanism in firms with robust governance structures, thereby supporting high payout policies. In the context of promoters with pledged holdings, actions aimed at shoring up share prices may be undertaken to avert the risk of triggering margin call requirements due to falling share prices. The act of paying dividends sends a positive signal to market participants, subsequently contributing to a positive impact on the share price. Consequently, promoters, faced with the prospect of falling share prices and aiming to avoid margin calls, may opt for a high payout policy under such circumstances.

Integrating these divergent viewpoints within the literature, it is discerned that the prevailing research predominantly suggests that companies with share-pledging promoters tend to adopt a low dividend payout policy. Consequently, the following hypothesis is posited:

H1. Promoter share pledging is negatively related to dividend payouts.

2.2 Moderating effect of family involvement in business on promoter share pledging and dividend payout

The family's involvement in business introduces a crucial element that can moderate the connection between promoter share pledging and dividend payouts. It has been observed in general that larger voting rights in the company entrench the controlling shareholders and incapacitate them to expropriate wealth from the company (La Porta *et al.*, 1999; Claessens *et al.*, 2000). Bebchuk *et al.* (1998) suggest that a greater separation between control and cash-flow rights indicates heightened agency problems. Kuan *et al.* (2011) posit that if the controlling families retain higher control rights than the shares they pledge for personal borrowing, their business decisions are likely to prioritise personal interests. Chen and Ho (2009) also find that the impact of share pledging on firm policies, including dividend payouts, varies between family and non-family companies. Consistently, Leung (2023) asserts that the primary objective of conserving corporate wealth for future family members necessitates differences in the dividend payout policies adopted by family and non-family companies.

Although this aspect has not garnered extensive attention in the literature, Kuan *et al.* (2011), in the context of Taiwanese companies, discovered that the pledge ratio is notably higher amongst family-controlled enterprises compared to non-family-controlled companies. The study's findings imply that family-controlled businesses with a higher pledge ratio tend to maintain lower cash reserves, aligning with the spending hypothesis. In this scenario, self-interested managers may prefer higher dividend payout policies over conserving cash within the business. Based on the empirical support, the following hypothesis is formulated:

H2. Family involvement in business moderates the association between promoter share pledging and dividend payouts.

3. Research methodology

3.1 Sample selection and data sources

This investigation draws upon a dataset comprising companies enlisted on the S&P BSE 500 Index, spanning a decade from April 1, 2013, to March 31, 2023. The sample underwent meticulous curation involving rigorous data filtering procedures, ultimately yielding a sample of 236 companies, encompassing 2,360 firm-year observations. Notably, the exclusion of banking and financial services entities was imperative due to their distinct regulatory oversight governed by statutes such as the Reserve Bank of India (RBI) Act, 1934 and the Banking Regulation Act, 1949. Additionally, public sector undertakings were omitted from the analysis, given their unique social responsibilities. Furthermore, companies with fiscal year-ends divergent from March 31 were not considered in the final dataset. Consistency within the S&P BSE 500 Index throughout the study period was another criterion for inclusion, leading to the exclusion of companies that did not meet this criterion. Lastly, entities undergoing corporate restructuring during the investigation period were also excluded from the study to ensure the integrity of the dataset.

To gather a comprehensive set of research data encompassing a wide array of variables, a multi-pronged approach has been adopted, drawing from various reliable sources. The information on dividend payouts has been meticulously extracted from the annual reports of the respective companies, providing an authentic and firsthand account of their financial disbursements. The data pertaining to promoter share pledging and family ownership has been systematically compiled from the official website of the Bombay Stock Exchange (BSE), accessible at https://bseindia.com/. This source ensures accuracy and transparency in understanding the dynamics of share pledging and familial involvement in the companies under scrutiny. Moreover, for the remaining variables, a robust dataset has been derived from the ProwessIQ database. This platform, meticulously maintained by the Centre for Monitoring Indian Economy (CMIE), serves as a reliable repository of diverse economic and financial data.

3.2 Variable measurement

3.2.1 Dividend payout. This study utilises three distinct proxies to measure the dependent variable of dividend payout ratios in the baseline analysis, viz., dividends paid as a proportion of total assets (*DIV_TA*), operating cash flows (*DIV_OCF*) and net income (*DIV_NI*), a methodology consistent with prior studies (Aivazian *et al.*, 2003; John *et al.*, 2011; Michaely and Roberts, 2012; Benjamin and Mat Zain, 2015).

3.2.2 Promoter share pledging. The independent variable of the study, promoter share pledging (*SHARE_PLEDGE*) has been measured by the ratio of shared pledged by company's promoter and promoter groups to the total outstanding shares in each financial year (Chauhan *et al.*, 2021; Rajhans, 2022).

3.2.3 Family involvement in business. The measurement of the moderating variable family involvement in business (*FIB*) adopts a comprehensive approach that encapsulates the multifaceted nature of family ownership. *FIB* is operationalised as a dummy variable, assuming a value of one if the founding family holds a minimum of 25% shareholding, further with multiple members of the family involved in ownership, management and governance (Morck *et al.*, 1988; Astrachan *et al.*, 2002; Villalonga and Amit, 2006; Tahir and Sabir, 2014; Ahluwalia *et al.*, 2017). Conversely, it takes the value of zero if these conditions are not met.

3.2.4 Control variables. In this study, eight control variables have been carefully incorporated in the present analysis. Firstly, the size of the firm (*SIZE*) has been considered to address potential effects of the size. Larger companies often exhibit diverse ownership structures, leading to heightened asymmetric information and agency costs. *SIZE*, a crucial determinant of dividend payout policy, is proxied by taking the natural log of total assets, aligning with established literature (Al-Malkawi, 2007; Boţoc and Pirtea, 2014; Kuzucu, 2015; Yusof and Ismail, 2016).

Financial leverage (*LEV*) has been controlled for by calculating the ratio of non-current liabilities to total assets in a fiscal year. It is anticipated that firms with lower debt levels are inclined to adopt a more aggressive dividend payout policy (Aivazian *et al.*, 2003; Gugler and Yurtoglu, 2003; Xu and Huang, 2021). Firm profitability, measured by return on assets (*ROA*), has been included as a control variable, consistent with findings from Firth *et al.* (2016) and Jiang *et al.* (2017), indicating a positive association between accounting profitability and dividend payouts.

To account for investment and growth opportunities, the ratio of market value to book value of equity (*M/B*) has been incorporated, following studies by Al-Malkawi (2007), Theis and Dutta (2009), Patra *et al.* (2012) and Al-Kayed (2017). This reflects the expectation that firms with high growth prospects may distribute lower dividends to retain earnings for future investments.

Controlling for the impact of research and development (R&D) expenditure on cash holdings, the study introduces R&D intensity (*R&D_INT*), calculated as the ratio of R&D expenses to total assets, in line with Chou *et al.* (2021). Lower expenditure on R&D amongst companies with a higher proportion of share pledging is expected to lower their cash holdings.

Considering the influence of a firm's age on dividend distribution, the variable *F_AGE*, denoting the age of the firm in years, has been included. Older firms may distribute more dividends due to their enhanced access to external capital markets (Gugler and Yurtoglu, 2003; Sener and Akben Selcuk, 2019).

Lastly, year (*YEAR*) and industry (*IND*) dummies have been introduced to control for industry and year-fixed effects. Including these dummies addresses potential variations in the value of dividend payouts across different years and industries, minimising potential biases. Table 1 provides a concise summary of the definitions of all variables utilised in this study.

Panel A: dependent variables – dividend payout	
DIV_TA	Total cash dividend paid in a given financial year as a percentage of total assets
DIV_OCF	Total cash dividend paid in a given financial year as a percentage of operating cash flows
DIV_NI	Total cash dividend paid in a given financial year as a percentage of net income
Panel B: independent variables – promoter share pledging	
SHARE_PLEDGE (%)	Ratio of shares pledged by the promoter and promoter group to the total shares outstanding, expressed in terms of percentage
Panel C: control variables	
SIZE	Natural logarithm of firm's total assets
LEV	Ratio of firm's total non-current liabilities of a company to its total asset base
ROA	Ratio of firm's net income to its total asset base
M/B	Ratio of firm's market value to book value of equity
R&D_INT	Ratio of firm's research and development expenses to total assets
F_AGE	Firm's age expressed in number of years
YEAR	Nine-year dummies with the financial year 2013–14 as the base
IND	Five industry dummies representing six industries based on the two-digit National Industry Classification codes
Panel E: variables employed in additional tests	
DIV_DUM	Indicator variable that takes the value of one if the total cash dividend paid is greater than zero in a given financial year, and zero otherwise
PLEDGE_DUM	Indicator variable that takes the value of one if the company's promoter and promoter group have pledged their shareholding with the financial institutions at the end of the financial year, and zero otherwise
IndAvg_PLEDGE	Average measure for promoter share pledging of companies in the same industry
PREDICTED_SharePledge	Predicted value of promoter share pledging estimated in the first stage of IV-2SLS
FIB	Family Involvement in Business is a moderating variable that takes the value of one if the founding family is the largest shareholder with a minimum 25% shareholding, multiple members of the same family are involves in the ownership, management, and governance across generations, and zero otherwise
*SHARE_PLEDGE(%)*FIB*	Interaction variable between share pledging measured in terms of percentage and family involvement in business
*PLEDGE_DUM*FIB*	Interaction variable between share pledging measured as a dummy variable and family involvement in business

Table 1.
Variable description

Source(s): Author's own compilation

3.3 Methods of data analysis

In the baseline analysis, the study employs panel data regression methodology to evaluate the impact of promoter share pledging on dividend payouts. The selection of fixed-effects panel data regression is validated through the Hausman test. This methodology is robust in capturing within-entity variations, addressing any unobserved individual-specific effects in the dataset (Allison, 1994; Vaisey and Miles, 2017) and mitigating omitted variable bias (Hausman and Taylor, 1981). Additionally, to enhance the analysis and reinforce the baseline findings, Bayesian regression methodology is incorporated.

Before conducting the regression analyses, rigorous statistical tests are conducted to ensure the suitability of the data for the main analysis. Potential issues such as serial autocorrelation, heteroskedasticity and multicollinearity are carefully examined. Serial autocorrelation is assessed using the Wooldridge test, whilst heteroskedasticity is investigated with the Breusch–Pagan test. Multicollinearity is evaluated using the variance inflation factor (VIF). Subsequently, given the identification of serial autocorrelation and heteroskedasticity, the regression models incorporate robust standard errors clustered at the firm level to address these concerns (Baltagi, 2008; Petersen, 2008).

Although the study addresses concerns regarding omitted variable bias by employing fixed-effects panel data regression methodology to tackle endogeneity, the potential for reverse causality remains a lingering concern. To mitigate this issue, the present study adopts the instrumental variable two-stage least squares (IV-2SLS) regression methodology. This approach utilises instrumental variables that are uncorrelated with the error term but correlated with the endogenous independent variable(s), providing a robust method to address endogeneity (Murray, 2006; Zaefarian *et al.*, 2017).

3.4 Analysis of association between promoter share pledging and dividend payouts

For testing the Hypothesis 1 (H1) relating to the impact of promoter share pledging on dividend payouts, this study employs the fixed-effects panel data regression model as specified below:

$$DIV\_PAY_{i,t} = \alpha_i + \beta_1 SHARE\_PLEDGE_{i,t} + \beta_2 \text{Controls}_{i,t} + \varepsilon_{i,t} \quad (1)$$

where $DIV\_PAY_{i,t}$ represents the dividend payout that has been alternatively measured by $DIV\_TA_{i,t}$, $DIV\_OCF_{i,t}$ and $DIV\_NI_{i,t}$, respectively. $SHARE\_PLEDGE_{i,t}$, signifies promoter share pledging, which is the independent variable in the regression model. Controls include *SIZE*, *LEV*, *ROA*, *M/B*, *R&D_INT*, *F_AGE*, *IND* and *YEAR*. The constant α_i represents the firm-specific effects, which is allowed to differ between sample companies. Table 1 explains the detailed definitions of all the variables used in Model (1).

Panel data regression models offer distinct advantages by effectively managing individual heterogeneity and temporal variations, rendering them well-suited for datasets encompassing both diverse and uniform individuals. Additionally, panel datasets confer increased degrees of freedom, reduced collinearity and heightened variability in comparison to cross-sectional data (Klevmarken, 1989; Hsiao, 2005). In order to decide between the usage of random effects and fixed effects, the Hausman specification test has been conducted. From the test results it was inferred that since the *p*-value from the chi-square test fell below the threshold of 0.05, the decision was made to adopt the fixed-effects regression model.

4. Results

4.1 Descriptive and correlation statistics

Table 2, Panel A, provides comprehensive overview of the variables under consideration. The summary statistics for dividend payout measures—*DIV_TA*, *DIV_OCF*, *DIV_NI* and *DIV_DUM*—reveal mean (median) values of 0.023 (0.012), 0.088 (0.123), 1.352 (0.189) and 0.919 (1), respectively. These figures suggest that whilst the majority of companies distributed dividends, the proportion of these payouts in relation to total assets, operating cash flows and net income was comparatively modest, hinting at a substantial retention of funds which may be for future investments or personal expropriation. On the other hand, the statistics relating to promoter share pledging indicate an average of approximately 7.5% of promoters' shares being pledged, with instances reaching as high as 100% for certain companies. With a mean value of 0.338 for *PLEDGE_DUM*, it is inferred that nearly a third of the sampled companies' promoters engaged in pledging their shares, indicating the prevalence of this practice in India. Furthermore, the mean (median) values for the moderating variable *FIB* stood at 0.726 (1), underscoring the dominance of family-owned companies within the study's sample.

Panel B of Table 2 displays the correlation statistics for the variables under investigation. The dividend payout proxies, namely *DIV_TA*, *DIV_OCF*, *DIV_NI* and *DIV_DUM*, exhibit positive and moderate correlations, ranging from 0.492 to 0.684. This suggests a consistent measurement of the same phenomenon across these variables. A similar trend is observed for *SHARE_PLEDGE* and *PLEDGE_DUM*, showing a correlation coefficient of 0.583.

Table 2.
Descriptive statistics and correlation matrix

Panel A: descriptive statistics

Variables	Mean	Median	Standard deviation	Min	Max
DIV_TA	0.023	0.012	0.036	0	0.350
DIV_OCF	0.088	0.123	4.303	0	26.412
DIV_NI	1.352	0.189	75.121	0	41.227
SHARE_PLEDGE (%)	7.486	0	17.979	0	100
SIZE	24.182	24.079	1.423	18.891	29.681
LEV	0.159	0.128	0.132	0	1.359
ROA	0.071	0.06	0.085	−0.704	0.872
M/B	4.641	3.100	11.198	−145.114	266.667
R&D_INT	0.009	0.000	0.059	0	1.190
F_AGE	42.29	33	25.902	3	156
DIV_DUM	0.919	1	0.271	0	1
PLEDGE_DUM	0.338	0	0.473	0	1
FIB	0.726	1	0.446	0	1

Panel B: correlation statistics

Variables	DIV_TA	DIV_OCF	DIV_NI	SHARE_PLEDGE (%)	SIZE	LEV	ROA	M/B	R&D_ INT	F_ AGE	DIV_ DUM	PLEDGE_ DUM	FIB
DIV_TA	1												
DIV_OCF	0.512*	1											
DIV_NI	0.635**	0.684*	1										
SHARE_PLEDGE (%)	−0.139**	−0.024*	−0.048*	1									
SIZE	−0.005	0.037	−0.006	0.173**	1								
LEV	−0.249**	−0.005*	0.013	0.244**	0.205**	1							
ROA	0.499**	0.035***	0.019	−0.236**	−0.061**	−0.356**	1						
M/B	0.175**	−0.016	0.006*	−0.081**	−0.112**	−0.106**	0.007	1					
R&D_INT	−0.029	−0.001	−0.003	−0.049**	−0.122**	−0.032	−0.267**	0.536**	1				
F_AGE	0.097**	0.011	0.027	−0.067**	0.149**	0.072**	0.015	0.005	−0.082**	1			
DIV_DUM	0.492***	0.506*	0.611*	−0.169***	0.075***	−0.062***	0.227***	−0.099*	−198***	0.134**	1		
PLEDGE_DUM	−0.043*	−0.002	0.014	0.583**	0.170**	0.190**	−0.182**	−0.004	0.057**	0.029	−0.051*	1	
FIB	−0.094***	−0.027	−0.014	−0.046**	−0.187**	0.026	−0.052*	0.000	0.065**	0.148**	−0.039	−0.072**	1

Note(s): ***,**,* indicates the significance of the coefficient estimate at 1, 5, and 10% levels respectively
Source: Author's analysis based on using Stata 14

Moreover, the analysis indicates a significant and negative correlation between promoter share pledging and dividend payout, consistently observed across various proxies. Additionally, *FIB* demonstrates a significant and negative correlation with both promoter share pledging and dividend payout, consistently evident across all measures. Lastly, it is noteworthy that none of the remaining variables display a correlation coefficient exceeding 0.5, indicating the absence of multicollinearity concerns, as emphasised by Kohli (2018).

4.2 Baseline regression results- promoter share pledging and dividend payout

The outcomes derived from the fixed-effects panel data regression analysis, as delineated in Table 3, illuminate a notable and statistically significant negative influence of promoter share pledging on dividend payouts within the Indian corporate landscape. This negative impact is consistently observed across all three distinct measures of dividend payout, namely $DIV\_Ta_{i,t}(\beta = -0.008, p < 0.10)$, $DIV\_OCF_{i,t}(\beta = -0.042, p < 0.05)$ and $DIV\_NI_{i,t}(\beta = -0.021, p < 0.01)$. The convergence of these regression coefficients strongly supports H1, suggesting a robust and negative association between promoter share pledging and dividend distribution practices.

A deeper interpretation of these findings reveals a compelling narrative. As promoters increasingly pledge higher stakes, there is a discernible diminishment in their cash-flow rights. This reduction in financial autonomy serves as a pivotal factor in steering promoters toward adopting more conservative dividend policies. In other words, the empirical evidence suggests that the propensity for low dividend payouts is a strategic response to the encumbrance on the cash-flow rights of promoters due to elevated levels of pledged shares. This strategic preference for conservative dividend policies, as indicated by the negative

Variable	DIV_TA (1)	DIV_OCF (2)	DIV_NI (3)
SHARE_PLEDGE (%)	−0.008*	−0.042**	−0.021***
	(0.00)	(0.00)	(0.02)
SIZE	0.001*	0.688*	1.773
	(0.024)	(0.69)	(1.79)
LEV	−0.016**	−1.206**	−7.341*
	(0.07)	(0.66)	(7.50)
ROA	0.064***	2.812*	4.272*
	(0.02)	(2.42)	(0.00)
M/B	0.037	0.005	−0.021
	(0.00)	(0.00)	(0.02)
R&D_INT	−0.069***	−1.876*	−6.436*
	(0.02)	(2.61)	(8.58)
F_AGE	0.009**	0.001	0.028*
	(0.00)	(0.01)	(0.02)
Constant	0.063	−16.982	−44.658
	(0.06)	(16.904)	(0.36)
Year-fixed effects	Yes	Yes	Yes
Industry-fixed effects	Yes	Yes	Yes
Observations	2,360	2,360	2,360
R-square	0.094	0.185	0.143

Note(s): (1) Robust standard errors are reported in parenthesis. (2) ***,**,* indicates the significance of the coefficient estimate at 1, 5, and 10% levels respectively. (3) Fixed-effect panel data regression model has been applied with alternative proxies of cash dividend payout as the dependent variable. (4) Table 1 provides the description of all the variables

Source(s): Author's analysis based on using Stata 14

Table 3. Baseline results: impact of promoter share pledging on dividend payout

regression coefficients, aligns with the theoretical underpinnings of agency theory. The results imply that promoters, faced with the constraints on their financial rights arising from higher share pledging, are inclined to retain more earnings within the firm rather than distributing them as dividends. The consequence of such a choice is a larger pool of undistributed funds, potentially offering greater latitude for fund diversion for personal use.

The present findings align seamlessly with the outcomes of prior research endeavours, substantiating the argument that promoter share pledging serves as a prevalent self-serving strategy, particularly in the context of heightened agency conflicts. This assertion is corroborated by a comprehensive review of relevant literature, including studies by Anderson and Puleo (2020), Li *et al.* (2020), Puleo and Kozlowski (2021) and Xu and Huang (2021). Collectively, these scholarly investigations provide robust support for the contention that promoter share pledging is not merely a financial manoeuvre but, rather, a strategic tool deployed by promoter groups to navigate and mitigate agency conflicts, concurrently serving as a conduit for securing personal benefits.

These studies not only reinforce the empirical basis for the present findings but also deepen our understanding of the motivations behind promoter share pledging. The convergence of results from diverse research contributes to the robustness of the arguments put forth and emphasises the broader relevance of observed patterns in the strategic use of promoter share pledging in corporate governance. This is particularly noteworthy in emerging economies like India, where heightened promoter stakes often coincide with increased pledging during periods of elevated agency conflicts.

Regarding the analysis of the control variables, the results indicate that both *LEV* and *R&D_INT* demonstrate a significantly negative impact on dividend payouts. This suggests that companies with elevated debt levels and greater investment in research and development tend to adopt lower dividend payout policies. Moreover, the variables *SIZE*, *ROA* and *F_AGE* exhibit a positive association with dividend payouts. This implies that larger-sized, profitable firms with longer years of incorporation are more likely to implement dividend payout policies favourably. In contrast, *M/B* is the sole control variable that did not yield any statistically significant results.

4.3 Further tests and robustness check

4.3.1 Alternative measure of dividend payout. This section explores the robustness of the test results by incorporating an alternative proxy for dividend payout. Consistent with existing literature (e.g. Firth *et al.*, 2016; Sener and Akben Selcuk, 2019; Li *et al.*, 2020; Xu and Huang, 2021), a dummy variable, *DIV_DUM*, has been introduced to assess the relationship between promoter share pledging and dividend payout. This binary variable takes the value of one if a company pays cash dividends in a given financial year and zero otherwise.

Given that *DIV_DUM* is a categorical variable, this section applies fixed-effect binary logistic regression methodology to examine the impact of promoter share pledging on dividend payout. The results presented in Table 4 demonstrate a significantly negative impact of *SHARE_PLEDGE* on $DIV\_DUM_{i,t}(\beta = -0.024,\ p < 0.01)$. Consequently, H1 remains accepted. Furthermore, the implications for various control variables align with the baseline results.

4.3.2 Alternative measure of promoter share pledging. In the initial analysis, the continuous measurement *SHARE_PLEDGE* variable was utilised. To enhance robustness, a binary variable, *PLEDGE_DUM* has been introduced as a substitute for promoter share pledging. *PLEDGE_DUM* takes on the value of one if, in any given financial year, the company's promoter and promoter group have pledged their shareholding and zero otherwise. This measurement aligns with the approach used by Xu and Huang (2021).

Variable	DIV_DUM (1)
SHARE_PLEDGE (%)	−0.024***
	(0.01)
SIZE	0.659***
	(0.22)
LEV	−2.119*
	(1.44)
ROA	10.606***
	(2.45)
M/B	−0.099
	(0.01)
R&D_INT	−11.651**
	(7.84)
F_AGE	0.034**
	(0.01)
Constant	−11.313**
	(5.16)
Year-fixed effects	Yes
Industry-fixed effects	Yes
Observations	2,360
Wald chi-square	81.11***

Note(s): (1) Robust standard errors are reported in parenthesis. (2) ***,**,* indicates the significance of the coefficient estimate at 1, 5, and 10% levels respectively. (3) Fixed-effect binary logistic regression model has been applied. (4) Table 1 provides the description of all the variables
Source(s): Author's analysis based on using Stata 14

Table 4. Robustness tests – impact of promoter share pledging on dividend payout considering alternative proxy of dividend payout

The results in Table 5 from this section consistently affirm a significantly negative impact of promoter share pledging across all measures of dividend payout, namely $DIV\_TA_{i,t}(\beta = -0.053, p < 0.05)$, $DIV\_OCF_{i,t}(\beta = -0.205, p < 0.10)$ and $DIV\_NI_{i,t}(\beta = -0.111, p < 0.01)$. As such, H1 is robustly supported. The association of various control variables with dividend payout remained mostly aligned with the baseline results.

4.3.3 Alternative methodology – Bayesian regression. Frequentist methodologies, such as panel data regression, which rely on *p*-values, have faced criticism from statisticians for their inability to produce reliable results (Trafimow and Earp, 2017; Pek and Van Zandt, 2020; Briggs, 2023). To address this concern, the study supplements the baseline panel data fixed-effects regression results with Bayesian regression methodology. By employing Bayes' theorem of probability, the study formulates *a priori* beliefs regarding the impact of promoter share pledging on dividend payouts (Bayes, 1763). These beliefs are combined with assumptions about the likelihood of observing the given data, resulting in posterior distribution.

Given the subjectivity associated with informative priors, selecting prior distributions poses a challenge in Bayesian regression. Drawing insights from prior research (e.g. Jiang and Liu, 2020; Kalia, 2024a, b), the study selects non-informative prior distributions. Accordingly, this study follows Gaussian distributions with zero mean for assigning the non-informative priors. The implication of zero mean is that both intercept and slope have equal probability of being negative or positive. Following Farid *et al.* (2017) each independent variable is assigned a prior of zero and a variance of 0.001 indicating that there is no prior information. Further, Markov Chain Monte Carlo (MCMC) simulation is employed to explore the posterior distribution of parameters (Gelman and Rubin, 1992). The MCMC simulation draws a total of 11,000 samples whilst discarding the initial 1,000 to ensure convergent and reliable results.

Variable	DIV_TA (1)	DIV_OCF (2)	DIV_NI (3)
PLEDGE_DUM	−0.053**	−0.205*	−0.111***
	(0.00)	(0.34)	(0.48)
SIZE	−0.081	0.687	1.783
	(0.00)	(0.69)	(1.80)
LEV	−0.017**	−1.211***	−7.118*
	(0.01)	(0.65)	(0.33)
ROA	0.042***	2.747*	4.501**
	(0.02)	(0.00)	(0.35)
M/B	0.009	0.011	0.002
	(0.00)	(0.01)	(0.42)
R&D_INT	−0.068***	−1.701*	−6.647*
	(0.03)	(2.74)	(0.00)
F_AGE	−0.007*	−0.002	−0.037
	(0.00)	(0.00)	(0.00)
Constant	0.062***	−16.889	−45.125
	(0.00)	(0.32)	(0.00)
Year-fixed effects	Yes	Yes	Yes
Industry-fixed effects	Yes	Yes	Yes
Observations	2,360	2,360	2,360
R-square	0.086	0.11	0.05

Note(s): (1) Robust standard errors are reported in parenthesis. (2) ***,**,* indicates the significance of the coefficient estimate at 1, 5, and 10% levels respectively. (3) Fixed-effect panel data regression model has been applied with alternative proxies of cash dividend payout as the dependent variable. (4) Table 1 provides the description of all the variables

Source(s): Author's analysis based on using Stata 14

Table 5. Robustness tests – impact of promoter share pledging on dividend payout considering alternative proxy of promoter share pledging

The results of this section are reported in Panel A of Table 6. The findings indicate that the non-frequentist methodology of Bayesian regression aligns with the frequentist technique of panel data fixed-effects regression. Promoter share pledging was found to have a negative impact on dividend payouts across various proxies, such as *DIV_TA*, *DIV_OCF* and *DIV_NI*. Furthermore, the relationship of various control variables with dividend payout also remained consistent, as portrayed in Table 3. Additionally, in order to confirm the convergence of the MCMC chain, Gelman-Rubin diagnostic test has been performed. The value of Rc for any coefficient less than 1.1 indicates convergence (Gelman and Rubin, 1992; Brooks and Gelman, 1998). The results presented in Panel B of Table 6 portray that all Rc values are within limits and thus it can be concluded that MCMC chain comply with the convergence criteria.

4.3.4 Moderating effects concerning family involvement in business. This section delineates the fixed-effects panel data hierarchical regression model designed to examine Hypothesis 2 (H2), which focusses on evaluating the moderating effect of *FIB* on the association between promoter share pledging and dividend payouts. The subsequent Models, namely (2), (3), (4) and (5) are detailed as follows:

$$DIV\_PAY_{i,t} = \alpha_i + \beta_1 SHARE\_PLEDGE_{i,t} + \beta_2 FIB_{i,t} + \beta_3 \text{Controls}_{i,t} + \varepsilon_{i,t} \quad (2)$$

$$DIV\_PAY_{i,t} = \alpha_i + \beta_1 SHARE\_PLEDGE_{i,t} + \beta_2 FIB_{i,t} + \beta_3 SHARE\_PLEDGE_{i,t} * FIB_{i,t} + \beta_4 \text{Controls}_{i,t} + \varepsilon_{i,t} \quad (3)$$

$$DIV\_PAY_{i,t} = \alpha_i + \beta_1 PLEDGE\_DUM_{i,t} + \beta_2 FIB_{i,t} + \beta_3 \text{Controls}_{i,t} + \varepsilon_{i,t} \quad (4)$$

Panel A: Bayesian regression results

Variable	DIV_TA Posterior mean	DIV_TA 95% C.I.	DIV_OCF Posterior mean	DIV_OCF 95% C.I.	DIV_NI Posterior mean	DIV_NI 95% C.I.
SHARE_PLEDGE (%)	−1.04	[−2.44, 1.52]	−0.01	[−0.01, 0.01]	−0.07	[−0.12, 0.25]
SIZE	0.01	[−0.00, 0.02]	0.12	[−0.01, 0.25]	0.73	[−3.01, 1.55]
LEV	−0.02	[−0.03, −0.01]	−0.45	[−1.50, 1.50]	−12.54	[−13.65, 2.76]
ROA	0.21	[0.19, 0.22]	2.43	[0.03, 4.84]	28.49	[−3.51, 70.49]
M/B	0.00	[0.00, 0.00]	−0.01	[−0.03, 0.07]	0.03	[−0.33, 0.34]
R&D_INT	−0.02	[−0.02, 0.04]	−2.58	[−1.18, 6.34]	−16.31	[−49.37, 81.99]
F_AGE	0.00	[−0.01, 0.00]	0.01	[−0.01, 0.08]	0.08	[−0.04, 0.21]
Constant	−0.04	[−0.04, −0.02]	−2.97	[−6.07, 0.14]	8.04	[−46.23, 62.31]
N	2,360	2,360	2,360	2,360	2,360	2,360

Panel B: MCMC diagnostic results

Independent variable	Rc statistic
SHARE_PLEDGE (%)	1.002
Constant	1.051
var	1.007

Note(s): (1) Bayesian regression methodology based on the Markov Chain Monte Carlo (MCMC) simulation has been applied to obtain the said test results with total number of draws 11,000 (of which 1,000 discarded). (2) Table 1 provides the description of all the variables
Source(s): Author's analysis based on using Stata 14

Table 6. Robustness tests – impact of promoter share pledging on dividend payout considering alternative methodology of bayesian regression

$$DIV\_PAY_{i,t} = \alpha_i + \beta_1 PLEDGE\_DUM_{i,t} + \beta_2 FIB_{i,t} + \beta_3 PLEDGE\_DUM_{i,t} * FIB_{i,t} + \beta_4 \text{Controls}_{i,t} + \varepsilon_{i,t} \quad (5)$$

In the specified models, $DIV\_PAY_{i,t}$ denotes dividend payouts, assessed alternatively using $DIV\_TA_{i,t}$, $DIV\_OCF_{i,t}$, $DIV\_NI_{i,t}$ and $DIV\_DUM_{i,t}$. Models (2) and (3) incorporate $SHARE\_PLEDGE_{i,t}$, representing promoter share pledging as a percentage of promoter shareholding. On the other hand, in Models (4) and (5) $PLEDGE\_DUM_{i,t}$, a binary variable has been introduced which indicates if promoters have pledged any stake or not. $FIB_{i,t}$ serves as the moderating variable in Models (2) and (4), evident through the interactive variables "$PLEDGE\_SHARE_{i,t}$*$FIB_{i,t}$" and "$PLEDGE\_DUM_{i,t}$*$FIB_{i,t}$" when deemed significant in Models (3) and (5) (Baron and Kenny, 1986). The control variables employed in the various models align with those in Model (1), detailed with definitions in Table 1.

The current section employs a hierarchical fixed-effects panel data regression methodology. Initially, the moderating variable, $FIB_{i,t}$, is incorporated into Models (2) and (4). Subsequently, in the following step, the interactive variables, namely $PLEDGE\_SHARE_{i,t}$*$FIB_{i,t}$ and $PLEDGE\_DUM_{i,t}$*$FIB_{i,t}$, are introduced into Models (3) and (5). The results presented in Table 7 demonstrate that the interaction term $PLEDGE\_SHARE_{i,t}$*$FIB_{i,t}$ exhibits significant negative coefficients across various dividend payout measures {$DIV\_TA_{i,t}(\beta = -0.003, p < 0.01)$, $DIV\_OCF_{i,t}(\beta = -0.002, p < 0.10)$, $DIV\_NI_{i,t}(\beta = -0.089, p < 0.01)$ and $DIV\_DUM_{i,t}(\beta = -0.019, p < 0.10)$}. This suggests that the negative impact of promoter share pledging on dividend payouts is more pronounced for family companies. Similar patterns are observed for $PLEDGE\_DUM_{i,t}$*$FIB_{i,t}$, with significantly negative coefficients across diverse dividend payout measures {$DIV\_TA_{i,t}(\beta = -0.011, p < 0.01)$, $DIV\_OCF_{i,t}(\beta = -0.079, p < 0.10)$, $DIV\_NI_{i,t}(\beta = -3.838, p < 0.01)$ and $DIV\_DUM_{i,t}(\beta = -0.250,$

Table 7. Assessing the moderating effect of family's involvement in business between promoter share pledging and dividend payout

Variable	DIV_TA (1)	DIV_TA (2)	DIV_OCF (3)	DIV_OCF (4)	DIV_NI (5)	DIV_NI (6)	DIV_DUM (7)	DIV_DUM (8)
Panel A: independent variable = share pledging (%)								
SHARE_PLEDGE (%)	−0.002*	−0.004*	−0.007*	−0.009**	−0.094***	−0.033**	−0.001***	−0.003***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)
FIB	−0.003***	−0.007***	−0.182***	−0.201***	−1.137***	−1.860***	−0.001*	−0.016***
	(0.00)	(0.00)	(0.06)	(0.07)	(0.17)	(0.16)	(0.01)	(0.01)
SHARE_PLEDGE(%)*FIB	–	−0.003***	–	−0.002*	–	−0.089***	–	−0.019*
		(0.00)		(0.00)		(0.03)		(0.00)
SIZE	0.001*	0.001*	0.088***	0.094***	−0.623**	−0.616**	0.019***	0.019***
	(0.00)	(0.00)	(0.01)	(0.03)	(0.29)	(0.29)	(0.00)	(0.00)
LEV	−0.024***	−0.023***	0.100	0.092	−10.606***	−10.304***	−0.035*	−0.038
	(0.00)	(0.00)	(0.30)	(0.29)	(2.94)	(2.87)	(0.04)	(0.04)
ROA	0.159***	0.157***	1.496***	1.463***	7.289***	6.108***	0.562***	0.550***
	(0.02)	(0.02)	(0.24)	(0.25)	(2.62)	(2.47)	(0.06)	(0.05)
M/B	0.000**	0.000**	−0.012***	−0.012***	−0.025***	−0.026***	−0.000	−0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
R&D_INT	−0.025	0.024	−2.681***	−2.673***	−13.537***	−13.236***	−0.533***	−0.536***
	(0.03)	(0.02)	(0.738)	(0.74)	(3.06)	(2.98)	(0.17)	(0.18)
F_AGE	0.001***	−0.005***	0.002	0.002	−0.073**	0.072***	0.001***	0.001***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.03)	(0.03)	(0.00)	(0.00)
Constant	−0.033*	−0.032*	−2.025***	−2.011***	9.398	9.957*	0.491***	0.496***
	(0.02)	(0.02)	(0.29)	(0.29)	(5.97)	(6.08)	(0.09)	(0.09)
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,360	2,360	2,360	2,360	2,360	2,360	2,360	2,360
R-square	0.33	0.33	0.08	0.09	0.09	0.10	0.14	0.14
Panel B: independent variable = share pledging (Dummy)								
PLEDGE_DUM	−0.003***	−0.004***	−0.037*	−0.095***	−3.219***	−0.462*	−0.006*	−0.186***
	(0.00)	(0.00)	(0.08)	(0.00)	(0.01)	(0.01)	(0.01)	(0.05)
FIB	−0.003***	−0.007***	−0.185***	−0.213***	−1.178***	−2.536***	−0.005**	−0.273***
	(0.00)	(0.00)	(0.06)	(0.07)	(0.17)	(0.16)	(0.00)	(0.06)

(*continued*)

Table 7.

Variable	DIV_TA (1)	DIV_TA (2)	DIV_OCF (3)	DIV_OCF (4)	DIV_NI (5)	DIV_NI (6)	DIV_DUM (7)	DIV_DUM (8)
PLEDGE_DUM *FIB	–	−0.011***	–	−0.079*	–	−3.838***	–	−0.250*
		(0.00)		(0.00)		(0.03)		(0.18)
SIZE	0.001	0.001*	0.091***	0.091***	−0.650**	−0.609**	0.016***	0.306***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.29)	(0.29)	(0.00)	(0.06)
LEV	−0.024***	−0.026***	−0.133	0.137	−11.411***	−11.646***	−0.077	−1.056
	(0.00)	(0.00)	(0.32)	(0.29)	(2.94)	(2.87)	(0.06)	(0.69)
ROA	0.160***	0.157***	1.445***	1.428***	5.989***	5.174**	0.629***	10.703***
	(0.00)	(0.02)	(0.26)	(0.25)	(2.62)	(2.48)	(0.06)	(0.88)
M/B	0.000	0.000**	−0.012***	−0.012***	−0.026***	−0.029***	−0.000***	−0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.11)	(0.94)
R&D_INT	0.023	0.021	2.682***	2.667***	−10.265***	−9.535***	−0.490***	−5.209**
	(0.03)	(0.03)	(0.76)	(0.74)	(3.07)	(2.99)	(0.17)	(2.39)
F_AGE	0.000***	0.000***	0.000	0.002	0.007**	−0.609**	0.000***	0.018***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.03)	(0.03)	(0.00)	(0.00)
Constant	−0.031	−0.030	−2.067***	−2.064***	9.972*	10.122*	0.524***	−4.418***
	(0.02)	(0.02)	(0.29)	(0.29)	(5.97)	(6.09)	(0.11)	(1.73)
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,360	2,360	2,360	2,360	2,360	2,360	2,360	2,360
R-square	0.33	0.34	0.05	0.05	0.09	0.10	0.13	0.19

Note(s): (1) Robust standard errors are reported in parenthesis. (2) ***,**,* indicates the significance of the coefficient estimate at 1%, 5%, and 10% levels respectively. (3) Hierarchical Fixed-effect panel data regression model has been applied with alternate proxies of cash dividend payout as the dependent variable. (4) FIB is the moderating variable; SHARE_PLEDGE(%)*FIB and PLEDGE_DUM*FIB are the interaction variables in Panel A and B with alternate measures of promoter share share pledging (5) Table 1 provides the description of all the variables

Source(s): Author's analysis based on using Stata 14

$p < 0.10$)}. Consequently, this study gathers substantial evidence to support the acceptance of H2, indicating that *FIB* moderates the relationship between promoter share pledging and dividend payouts.

4.3.5 Alleviating endogeneity concerns. The baseline findings of this study may be susceptible to potential endogeneity issues. Specifically, reverse causality or presence of unobserved factors that simultaneously influence both promoter share pledging and dividend payout policies could be problematic. To address these endogeneity concerns, the study adopts the instrumental variables with the IV-2SLS methodology. In this context, industry averages of promoter share pledging within the same industry (*IndAvg_PLEDGE*) are utilised as the instrumental variable. This choice is grounded in the assumption that industry averages of promoter share pledging are likely to be correlated with the pledging behaviour of the relevant company, thereby meeting the selection criteria. Importantly, these averages are not expected to be associated with the relevant company's dividend payout policies, thereby satisfying the exclusion criteria.

Model (6) expressed as follows specifies the first stage of IV-2SLS regression, which estimates the relationship between the instrumental variable and promoter share pledging:

$$SHARE\_PLEDGE_{i,t} = \alpha + \beta_1 IndAvg\_PLEDGE_{i,t} + \beta_2 \text{Controls}_{i,t} + \varepsilon_{i,t} \quad (6)$$

where $IndAvg\_PLEDGE_{i,t}$ includes the industry averages of $SHARE\_PLEDGE_{i,t}$. The list of control variables is similar to those in Model (1). The predicted values obtained from Model 6 replace the instrumental variable $IndAvg\_PLEDGE_{i,t}$ in the second stage of IV-2SLS regression as specified through following model:

$$DIV\_PAY_{i,t} = \alpha + \beta_1 PREDICTED\_SharePledge_{i,t} + \beta_2 \text{Controls} + \varepsilon_{i,t} \quad (7)$$

where $PREDICTED\_SharePledge_{i,t}$ represents the predicted value of share pledging from the first stage of IV-2SLS in Model (6). The proxies of $DIV\_PAY_{i,t}$ and the various control variables used in Model (7) remains the same as Model (1).

Table 8 presents the results of regression Models (6) and (7). The outcome upheld the significantly negative association between promoter share pledging and dividend payout, even after addressing the endogeneity concerns.

5. Discussion on results

Pledging shares by promoters is generally perceived as detrimental to the company's prospects, particularly when its magnitude is exceptionally high. Descriptive statistics reveal that some companies in the sample have 100% pledged shares of promoters, signalling potential risks for various stakeholders whose fortunes are intertwined with those of the company. The results, indicating that higher levels of pledged promoter stakes correlate with lower corporate dividend payouts, align with the principles of agency theory. Promoters, with their substantial equity holdings and managerial roles, may prioritise their self-interests over those of dispersed shareholders. Pledging mechanisms, often associated with financial constraints, can lead to a conservative cash management approach, resulting in a lower dividend payout policy. The compromised cash-flow rights of promoters due to pledged stakes may prompt them to divert funds for personal use instead of allocating them to corporate dividends.

Moreover, the study sheds light on the moderating role of family involvement between promoter share pledging and dividend payout. The significantly negative impact of promoter share pledging on dividend payouts is found to be particularly pronounced for family companies. These results underscore the presence of Type II agency costs within family firms, where family promoters may exploit minority shareholders through related party

First stage Variable	SHARE_PLEDGE
IndAvg_PLEDGE	0.727***
	(0.141)
SIZE	1.504***
	(0.243)
LEV	21.827***
	(3.481)
ROA	−35.573***
	(6.447)
M/B	−0.004
	(0.05)
R&D_INT	−21.352***
	(6.747)
F_AGE	−0.058***
	(0.014)
Constant	−32.714***
	(5.584)
Observations	2,360
F-statistic	23.25***

Second stage Variable	DIV_TA (1)	DIV_OCF (2)	DIV_NI (3)
PREDICTED_SharePledge	−0.001***	−0.015*	−1.519*
	(0.000)	(0.029)	(1.511)
SIZE	0.002***	0.099*	2.019
	(0.000)	(0.062)	(1.932)
LEV	−0.012**	−0.364*	−4.249*
	(0.001)	(0.784)	(0.368)
ROA	0.139***	2.079*	0.491*
	(0.023)	(1.342)	(0.546)
M/B	0.000***	−0.013	−0.007
	(0.023)	(0.013)	(0.013)
R&D_INT	−0.016*	−3.324**	−1.215*
	(0.035)	(3.108)	(1.628)
F_AGE	0.000**	0.003	−0.021
	(0.000)	(0.005)	(0.019)
Constant	−0.053***	−2.778	−3.293
	(0.016)	(1.969)	(1.436)
Observations	2,360	2,360	2,360
F-statistic	44.07***	4.52***	0.33***

Note(s): (1) Robust standard errors are reported in parenthesis. (2) ***,**,* indicates the significance of the coefficient estimate at 1, 5, and 10% levels respectively. (3) IndAvg_PLEDGE in the first stage of IV-2SLS regression is the average measure for promoter share pledging of companies in the same industry and is the instrumental variable; PREDICTED_SharePledge in the second stage indicates the predicted value of promoter share pledging as estimated in the first stage of IV-2SLS; Table 1 provides the description of rest of the variables

Source(s): Author's analysis based on using Stata 14

Table 8. Endogeneity testing of promoter share pledging on cash dividend payout through IV-2SLS regression analysis

transactions. Previous studies suggest that share pledging is more prevalent amongst family-controlled enterprises (Pan and Tian, 2016), and since this practice reduces cash-flow rights relative to control rights, it negatively affects firm value, thereby impacting dividend payouts.

The findings of this study corroborate the limited existing literature (e.g. Li *et al.*, 2020; Xu and Huang, 2021; Shi *et al.*, 2023), indicating that controlling shareholders with pledged stakes tend to adopt low dividend payout policies. Pledging by controlling shareholders exacerbates Type II agency costs, as they prioritise securing private benefits at the expense of minority shareholders. Furthermore, the results align with the findings of Kuan *et al.* (2011), suggesting that the prevalence of promoter share pledging is higher amongst family companies. Consequently, due to the higher Type II agency costs associated with family firms, a significantly more negative impact of promoter share pledging on dividend payout is expected. Lastly, this study distinguishes itself from existing literature by exclusively focussing on the role of share pledging by promoters, whereas previous works primarily discuss controlling shareholders, of which promoters constitute a part.

6. Conclusion

Promoters resorting to share pledging is often interpreted as an indicator of liquidity concerns, and despite its apparent ease, this financing approach is not without risks. Those engaging in this practice are exposed to potential margin call pressures and may face mandatory share liquidation if they fail to meet their debt obligations. The associated risks of share pledging exert pressure on promoters, influencing their decision-making capabilities and subsequently impacting shareholders on a broader scale. Given that share pledging is a prevalent practice amongst Indian companies, particularly those predominantly controlled by promoters, this study delves into the repercussions of promoter share pledging on dividend payouts. Analysing a sample of companies listed on the S&P BSE 500 Index in India spanning from 2014 to 2023, the findings indicate that companies characterised by higher levels of share pledging by promoters tend to declare and pay lower amounts of dividends. The test results are robust to the employment of different measures of promoter share pledging and dividend payouts and hold even after alleviating potential endogeneity concerns. The findings corroborate former studies such as Li *et al.* (2020) and Xu and Huang (2021) who have also portrayed that controlling shareholder pledges pay lower dividends to the shareholders.

The research findings underscore the pivotal role of family involvement in business, as it incorporates this as a moderating variable when examining the relationship between promoter share pledging and dividend payouts. The results consistently reveal a notably negative impact of promoter share pledging on dividend payouts, particularly pronounced in companies influenced by family dynamics. It is crucial to delve into the underlying motives of family promoters engaging in higher share pledging, as it elucidates whether the subsequent reduction in dividend payouts serves the company's best interests. Family-run enterprises may adopt this strategy to safeguard family control and channel earnings into company growth and expansion. Conversely, family promoters might opt for lower dividends to channel funds for personal use, without delivering overall benefits to the broader company stakeholders, thereby advancing only their individual objectives. Consequently, this study's outcomes pave the way for further exploration into the motives driving family promoters to engage in the share pledging mechanism.

The implications of this study are far-reaching, given the widespread prevalence of share pledging by controlling shareholders. Primarily, there are significant implications for the research community and academicians striving to enhance theoretical contributions. Whilst research examining the link between promoter share pledging and dividend payouts is crucial, there remains a dearth of studies in this area (Li *et al.*, 2020; Chou *et al.*, 2021; Xu and Huang, 2021; Hu *et al.*, 2023). The findings of this study provide empirical evidence that share pledging by promoters significantly and negatively affects corporate dividend payouts, thereby enriching the existing literature. Moreover, this research contributes to the agency

theoretical framework by demonstrating that promoter share pledging exacerbates agency conflicts between majority and minority shareholders, leading the former to reduce dividend payouts. Given the predominantly family-oriented nature of the Indian business environment, this study, by exploring the role of family as a moderating variable, offers significant implications for agency theory. The evidence indicating a higher negative impact of promoter share pledging on dividend payouts for family companies underscores the presence of greater Type II agency problems amongst such firms.

In the context of the agency hypothesis, which illustrates conflicting perspectives on cash usage between pledging insiders and minority shareholders, there are important ramifications for retail investors. By leveraging the insights provided by the results of this study, the investment community can tailor their portfolios whilst considering their expected dividend income. Additionally, there are implications for the Indian regulator, the Securities and Exchange Board of India (SEBI), based on the study's outcomes. Following the Satyam scandal in 2009, SEBI mandated that listed entity promoters declare their pledged holdings publicly. Subsequently, in 2019, disclosure norms underwent changes, mandating disclosure if a promoter's total pledge in the company exceeded 50% of their holding or 20% of the total share capital. Whilst there are norms related to pledged value declaration, there are none regarding the end use of such pledging. Therefore, understanding the motivations for promoter share pledging, whether for personal or corporate purposes, can be beneficial for the investment community. Furthermore, beyond mere disclosure, the study suggests that additional details, such as debt extent, outstanding terms and payment schedules, including those of related promoter group entities, can enhance informativeness.

Whilst the study provides valuable insights for various stakeholders, it acknowledges that the drawn implications could be more meaningful with a clearer classification of the purpose behind promoter share pledging, distinguishing between personal reasons and corporate enhancements. This avenue for further exploration could enhance the depth of understanding regarding the motives driving promoters to engage in the share pledging mechanism and their consequent impact on dividend payouts.

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