

REVISITING THE NEXUS BETWEEN CAPITAL STRUCTURE AND DIVIDEND POLICY: AN EMPIRICAL INVESTIGATION VIA INCORPORATING MICRO AND MACRO-ECONOMIC POLICY FACTORS IN INDIA

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Abstract *The study aims to explore the interrelationship between capital structure and dividend policy in the context of Indian companies listed on the National Stock Exchange. The study employs the Simultaneous Equations Model (SEM) and Two-Stage Least Squares (TSLS) methodology due to the endogeneity issue to the balanced panel data of Nifty-200 companies listed on the National Stock Exchange (NSE) in India from 2013 to 2022. The empirical results indicate that both capital structure and dividend policy are positively interrelated with each other. The results also show that the debt to equity ratio positively relates to its lagged value, size, and inflation whereas the lagged value of the dividend payout ratio and the return on assets have a positive relationship with the dividend payout ratio for the sampled non-financial and financial companies. On the other hand, Gross Domestic Product (GDP) negatively relates to the dividend payout ratio for both non-financial and financial companies, while business risk has a negative relation with the dividend payout ratio in non-financial companies but is found to be positive in financial companies. Previous researchers have examined the effect of various determinants on the financial decisions of the companies. However, there is rarely any study grasping the interrelationship between capital structure and dividend policy while specifically incorporating both types of variables (i.e. firm-specific and macroeconomic) in the Indian context..*

Keywords: Capital Structure, Dividend Policy, Interrelationship, Two Stage Least Squares, Economic Growth and Inflation

JEL Classification: E52, G32, G35, O4

INTRODUCTION

In the field of corporate finance, an internal system of governance comprises both dividend policy and capital structure, which indicate the extent to which a firm's investment decisions are influenced by its managers as compared to shareholders (Sakr & Bedeir, 2020). While discussing corporate finance, the most significant financial decision is capital structure because it decides how a firm finances its assets using liabilities and equity (Cuevas-Vargas et al., 2022). Apart from the financing decision, the dividend decision is also a key financial management strategy because the company must decide whether to distribute earnings to

shareholders or retain them in the company. The dividend policy for a corporation is decided by the board of directors, who also consider the company's capital needs, future investment and financial performance (Khan & Jain, 2019). Large business houses heavily rely on external financing, which necessarily puts pressure on companies to pay their investors in the form of dividends. The connection among managers, shareholders and lenders is influenced by various determinants, of which both dividend policy and capital structure are key variables (Vu et al., 2021). The payout decision holds a significant place in corporate finance because of its interaction with capital structure, as high dividend payments result in capital shortage, which compels

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managers to make costly investments and debt payments (Asif et al., 2011; Sakr & Bedeir, 2020).

This favourable relationship is also supported by the pecking order theory proposed by Myers and Majluf (1984), which states that when firms have fewer retained earnings they prefer the use of debt over equity financing (Al-Najjar 2011; Rani et al., 2020; Vieira et al., 2023). Apart from this, the agency cost theory propounded by Jensen and Meckling in 1976 suggests that a company's governance is influenced by conflicts of interest between its owners, managers and major debt holders. Thus, dividend payments reduce agency problems arising from excess debt financing (Rozeff, 1982; Kim et al., 2007; Sakr & Bedeir, 2020; Purnamasari et al., 2020; and Vu et al., 2021). Apart from this, the signaling theory explains that increased dividend payments also works as a powerful positive signal when there is information asymmetry regarding the firm's promising prospects or higher future cash flows (Al-Najjar, 2011; Brahmaiah, 2018). Kraus and Litzenberger proposed the trade-off theory in 1973, which states that a company prefers to take on more debt when the tax benefits are greater than the agency and bankruptcy costs. High debt levels lead to increased tax advantages, but this is balanced by higher bankruptcy and agency costs (Neves et al., 2020; Sakr & Bedeir, 2020). The effect of debt levels on firm value and the cost of capital was examined by Modigliani and Miller in 1958, which signifies that the firm value does not change with the changes in debt levels (Kaur, 2014; Vu et al., 2021). In the context of dividend policy, Modigliani and Miller (1961) inferred that the dividend decision is also irrelevant to a company's value under a perfect capital market (Nazir et al., 2012; Vieira et al., 2023).

Earlier studies in corporate finance have focused mainly on the determinants of financial decisions but very few researchers have paid attention to the interplay between dividend policy and capital structure in the context of Indian companies, taking into account their internal variables. The current study aims to determine the interaction between financing and payout decisions by considering both companies' internal as well as macroeconomic variables for non-financial and financial companies in India. The company's financial performance is not only influenced by its internal variables but also affected by macroeconomic variables such as GDP and Inflation. The rise in economic growth leads to a rise in sales and profitability which is a signal of companies' better financial health (Romus et al., 2020). Furthermore, the financial performance of the company is also influenced by inflation uncertainty. The inflation uncertainty is responsible for increased business risk which arises due to changes in a firm's earnings (Hatzinikolaou et al., 2002; Belema & Odi, 2019).

The study is divided into 5 sections, where Section 2 comprises the empirical studies related to the objectives. Section 3 describes the research methodology used in the study; Section 4 consists of the findings of the interrelationship between capital structure and dividend policy. Finally, the conclusion and practical implications are shown in Section 5.

LITERATURE REVIEW

Dividend policy and capital structure are the two widely discussed and interrelated important topics of corporate finance. Keeping in view the shareholders' wealth maximisation objective, every financial manager is focused to attain both an ideal capital structure and dividend policy (Sakr & Bedeir, 2020). The company's profitability is also ascertained by its capital structure because debt may affect management's control and thus its dividend policy (Aburisheh et al., 2023). The researchers (Kouki, 2017; Sakr & Bedeir, 2020; Ahmed et al., 2021; Ali et al., 2022; Vieira et al., 2023) have examined the interrelationship among the financial decisions especially for companies' internal variables. The current endeavour considers internal as well as macroeconomic variables for both non-financial and financial companies.

Capital Structure and Dividend Policy

Dividend-Paying companies have a comparative advantage in the equity market as they experience less information asymmetry. Hence, dividend payment reflects better financial performance and increased debt-issuing capacity (Al-Najjar, 2011). Companies with asymmetric information are more inclined toward debt over equity because it assures investors that their investment is profitable and also demonstrates management confidence (Rani et al., 2020). The signalling theory of capital structure validates the above assertion. Several researchers have investigated the effect of capital structure on dividend policy and found that dividend policy was negatively affected by capital structure (Asif et al., 2011; Al-Najjar, 2011; Javed, 2012; Ahmed et al., 2021). Contrary to the above findings, Jinadu and Opeyemi, 2017; Miswanto and Prasetyo, 2019; and Sakr and Bedeir, 2020 argued that dividend policy was favourably affected by capital structure. Other studies have explored the effect of dividend policy on capital structure Al-Najjar (2011), Santosa and Nugroho (2014); Jain et al. (2023), and the results demonstrated the negative effect of dividend policy on capital structure. Apart from the above studies, Sakr and Bedeir (2020), Karismawati and Suarjaya (2020), Ahmed et al. (2021), and Vieira et al. (2023) discovered the positive impact of dividend policy on capital structure. The study hypothesised that:

H₁: Capital structure and dividend policy are interrelated to each other.

H_{1a}: Capital structure is positively related to dividend policy.

H_{1b}: Dividend policy is positively related to capital structure.

Profitability

Profitability describes the firm's potential to generate funds after deducting all expenditures and taxes (Rani et al., 2020). Return on Capital employed, Return on Assets, and Return on Equity are some of the measurements of profitability used in previous studies (Al-Najjar, 2011; Bostanci et al., 2018; Chakrabarti & Chakrabarti, 2019; Sawarni et al., 2021; Vieira et al., 2023). In this study, Return on Assets is taken as a proxy of profitability (Nazir & Afza, 2009; Kangarlouei et al., 2014; Miswanto & Prasetyo, 2019; Javaid et al., 2023; Tiwari et al., 2023; Aburisheh et al., 2023). Evidence suggests that the firm's profitability and dividend payments are positively correlated (Al-Najjar, 2011; Malik et al., 2013; Angelia & Toni, 2020). The pecking order theory supports this relationship, suggesting that profitable firms are likely to pay more dividends (Al-Najjar 2011). Based on the above evidence, the study hypothesised that:

H₂: Profitability is positively related to dividend policy.

Firm Size

Size is a crucial determinant that influences the capital structure decisions of the firm since a large firm has a low possibility of failure due to the presence of a stable cash flow (Rani et al., 2020). Large firms are more likely to be diversified, have more capital raising abilities and take benefits of trade opportunities with longer trade credit duration (Tiwari et al., 2023). The effect of firm size (natural logarithm of total assets) on the capital structure has been widely investigated (Naceur & Goaied, 2002; Neves et al., 2020; Purwanti, 2020; Rahmawati et al., 2021; Jain et al., 2023; Vieira et al., 2023). The available literature has highlighted that there is a positive association between firm size and capital structure (Al-Najjar & Taylor, 2008; Al-Najjar, 2011; Jain et al., 2023; Rani et al., 2020). The literature supports the hypothesis:

H₃: Firm Size is positively related to capital structure.

Business Risk

Risk and return go hand in hand while ascertaining the company's value (Sihwahjoeni et al., 2020). Business risk refers to the unpredictability that comes from a company's

operations (Triyono et al., 2019). According to the signalling theory, dividend payments provide insights into the future profits to the investors. Thus, any change in the dividend payments had an adverse effect on the business risk (Sihwahjoeni et al., 2020). According to Sharma and Bakshi (2019), the findings of the generalised method of moments showed that firm risk was favourably associated with the dividend policy of 125 real estate companies. On the contrary, Al-Najjar, 2011; Surasmi et al., 2019; Jain et al., 2023 found an adverse relationship between business risk and dividend policy. The following hypothesis is formed based on prior studies:

H₄: Business Risk is negatively related to dividend policy.

Economic Growth

The present study uses GDP as a measure of economic growth. The Gross Domestic Product determines the worth of all products and services produced in a nation using its resources over a specific period, serving as a measure of that nation's economic growth (Goel, 2019). The increase in investment opportunities with the high economic growth leads to an increase in the company's profitability which serves as an indicator of the company's performance for investors and reduces the company's reliance on debt (Ariwinata & Badjra, 2021; Goel, 2019). The findings of the study conducted by (Lotto, 2020; Romus et al., 2020; Ariwinata & Badjra, 2021) revealed that the economic growth (GDP) has a favourable relationship with dividend policy. On the other hand, Kayo and Kimura (2011); Jõeveer (2013), and Goel (2019) found that GDP was unfavourably associated with capital structure. Based on the above studies the following hypothesis is framed:

H₅: Economic Growth is negatively related to dividend policy.

Inflation

Inflation refers to the constant rise in the economy's overall price level over time (Goel, 2019). Inflation is a crucial determinant that affects both the capital structure and dividend policy (Hatzinikolaou et al., 2002; Elly & Hellen, 2013; Belema & Odi, 2019; Winarsari & Handini, 2020; Rinanda, 2022). In highly leveraged firms, increased inflation acts as a negative indicator for shareholders because the firm's revenues are utilised to offset the increased cost of raw materials resulting in lower dividend payments (Rinanda, 2022). Elly and Hellen (2013); Winarsari and Handini (2020); Rinanda (2022) and Muhammad and Kurniasari (2022) provide empirical results that validate the negative association between inflation and dividend policy. Similarly,

Hatzinikolaou et al. (2002); Neves et al. (2020), and Belema and Odi (2019) have also argued that inflation has a negative effect on capital structure. Hence, the following hypothesis is formulated:

H_6 : Inflation is negatively related to capital structure.

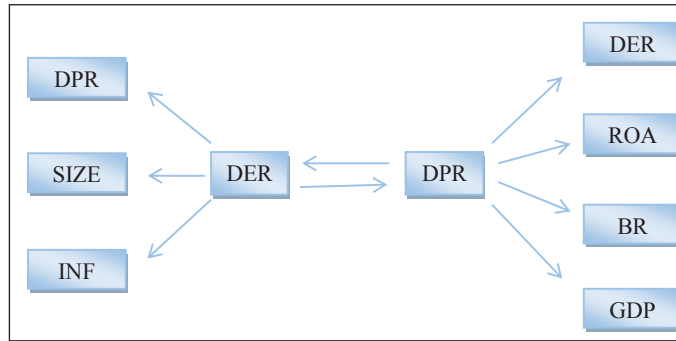


Fig. 1: Conceptual Framework

RESEARCH METHODOLOGY AND OBJECTIVES

The aim of the current study is to examine the interrelationship between capital structure and dividend policy of NIFTY-200 companies listed on the National Stock Exchange (NSE) in India for the period of 10 years (2013–2022). The study also explores the impact of macroeconomic variables on capital structure and dividend policy. The initial sample comprises a total of 158 non-financial and 42 financial companies out of which 89 non-financial (with 890 firm observations) and 15 financial companies (with 149 firm observations) are selected as per data availability. The CMIE Prowess Database and the World Development Indicator (WDI) has extensively searched to gather the required data.

Selection of Research Variables

Based on the review of the literature and related text, the study employed a total of seven variables, of which capital structure and dividend policy are dependent variables, while the remaining serve as independent variables, firm size, business risk, and profitability along with two macroeconomic variables - economic growth and inflation. The variables are defined in Table 1.

Table 1: Definition of Variables

Variables	Representation	Formula	Prior Studies
Dividend payout ratio (DPR)	Dividend policy	Total dividend paid/Net earnings	Naceur and Goaied (2002)
Debt to equity ratio (DER)	Capital structure	Total debt/Shareholder's equity	Miswanto and Prasetyo (2019), Sreenu (2019)
Return on asset (ROA)	Profitability	Profit after tax/Average total assets	Miswanto and Prasetyo (2019), Aburishheh et al. (2023)
Size (SIZE)	Firm size	Natural logarithm of total assets	Naceur and Goaied (2002), Al-Najjar (2011), Rahmawati et al. (2021), Jain et al. (2023)
Business risk (BR)	Business risk	Standard deviation of return on total assets	Al-Najjar and Taylor (2008); Al-Najjar (2011)
Gross domestic product (GDP)	Economic growth	GDP growth (annual %)	Ariwinata and Badjra (2021), Muhammad and Kurniasari (2022)
Inflation	Economic stability	Consumer price index	Mgammal (2012), Habib and Islam (2017) Muhammad and Kurniasari (2022)

Source: Author's compilation.

Model Specification

The simultaneous equation models in the case of non-financial companies are as follows:

$$DER_{it} = \alpha_{1i} + \alpha_{2i}(DPR_{it}) + \alpha_{3i}(DER_{i,t-1}) + \alpha_{4i}(SIZE_{it}) + \alpha_{5i}(INF_{it}) + \varepsilon_{it} \quad (1)$$

$$DPR_{it} = \beta_{1i} + \beta_{2i}(DER_{it}) + \beta_{3i}(DPR_{i,t-1}) + \beta_{4i}(ROA_{it}) + \beta_{5i}(BR_{it}) + \beta_{6i}(GDP_{it}) + \mu_{it} \quad (2)$$

The simultaneous equation models in the case of financial companies are as follows:

$$DER_{it} = \alpha_{1i} + \alpha_{2i}(DPR_{it}) + \alpha_{3i}(DER_{i,t-1}) + \alpha_{4i}(SIZE_{it}) + \alpha_{5i}(INF_{it}) + \varepsilon_{it} \quad (3)$$

$$DPR_{it} = \beta_{1i} + \beta_{2i}(DER_{it}) + \beta_{3i}(DPR_{i,t-1}) + \beta_{4i}(ROA_{it}) + \beta_{5i}(BR_{it}) + \beta_{6i}(GDP_{it}) + \mu_{it} \quad (4)$$

In the above models, α_1 and β_1 are the intercepts, DER— a computation of capital structure, DPR as the dividend policy, the natural logarithm of total assets measures a firm size, ROA represents profitability, BR indicates business risk, GDP denotes economic growth, and INF represents the economic stability. DER_{t-1} and DPR_{t-1} denote the lag of

same, respectively. α_2 - α_5 and β_2 - β_6 represent the coefficients of independent variables, ε and μ indicate the error terms with cross-sections (i) and time (t).

The above simultaneous equations include DER and DPR as dependent variables, which result in two estimating equations for each decision. The dependent variable in the first equation serves as an independent variable in the second equation and vice versa. In order to determine endogenous variables, other variables, i.e., lag of dependent variables; SIZE; ROA; BR; GDP, and INF, serve as instrumental variables. Large sized companies can often get debt at low cost as compared to smaller companies that is why in first and third model SIZE and INF are taken as independent variables due to their influence on the capital structure (Nguyen et al., 2020). Similarly, in the second and fourth models, ROA, BR, and GDP are the independent variables because of their influence on the dividend policy as the distribution of the funds in form of dividend is determined by the profitability of the company (Bostanci et al., 2018; Ariwinata & Badjra, 2021).

RESULT AND DISCUSSION

The methodology used for analysis is selected on the basis of the nature of the data. While analysing the panel data, the

study faces the common issue of endogeneity which arises due to the high correlation of the dependent variable with the error term. Therefore, the researchers include the lagged value of dependent variables in the above models. Thus, the pooled ordinary least square method is not appropriate for this study. A system of equations that describes the dependency between variables and the simultaneous existence of interdependence between equations constitutes the Simultaneous Equations Model (SEM) (Vieira et al., 2023). Due to the presence of the endogeneity issue we used the simultaneous equations model— two stage least squares method— in order to investigate the interrelationship between dividend policy and capital structure.

The PP Fisher Chi Square panel unit root test is used to assess the stationarity of the data which assumes the presence of a unit root in the data. The findings of the unit root test for non-financial as well as financial companies are shown in Table 2, which shows that all variables are stationary at level I (0), except for firm size in the case of financial companies. The null hypothesis is rejected since the probability values are less than the level of significance, indicating the absence of a unit root in the panel data.

Table 2: Stationary Test

Variables	Non-Financial Companies	Level of Stationary	Financial Companies	Level of Stationary
PP Fisher Chi Square				
DER	309.399*(0.0000)	I(0)	69.842*(0.0001)	I(0)
DPR	661.784*(0.0000)	I(0)	107.803*(0.0000)	I(0)
SIZE	292.988*(0.0000)	I(0)	13.335(0.9963)	I(0)
SIZE Δ	-	-	98.954*(0.0000)	I(1)
ROA	308.568*(0.0000)	I(0)	46.557***(0.0275)	I(0)
BR	223.328***(0.0119)	I(0)	76.871*(0.0000)	I(0)
GDP	358.804*(0.0000)	I(0)	60.472*(0.0008)	I(0)
INF	272.910*(0.0000)	I(0)	45.996***(0.0311)	I(0)

Source: Author's compilation.

Notes:*, **denote significance at 1% and 5%.

In the parentheses, the probability values are shown.

The mean value of DER is 0.42, as shown in Table 3, which indicates that on average, 42% of the total assets of non-financial companies are financed by debt with a range of 0.00 to 4.45. The mean value of DPR is 0.33 exhibiting that on average the dividend payout ratio of the firm is 33%, with a minimum and maximum value of 0.00 and 6.91, respectively. The average value of DER and DPR also explicates that the company is earning a significant amount

of profit for making the fixed interest payment on debt and the managers are more interested in distributing the profit to their shareholders as dividends rather than retaining in the company. The average value of SIZE, ROA and BR are 4.15, 9.11, and 10.98, respectively. The macroeconomic variable, GDP has an average value of 5.76, ranging from -5.83 to 9.05, and the mean and median of INF are 5.60 and 5.04, respectively.

Table 3: Descriptive Statistics

	Non-Financial Companies					Financial Companies				
	Obs.	Mean	Median	Min.	Max.	Obs.	Mean	Median	Min.	Max.
DER	890	0.42	0.24	0.00	4.45	149	4.18	4.17	0.01	12.71
DPR	890	0.33	0.26	0.00	6.92	149	0.20	0.17	-0.00	1.43
SIZE	890	4.15	4.09	2.41	5.99	149	0.006	0.06	-1.89	0.85
ROA	890	9.11	7.28	-5.08	38.71	149	2.05	1.71	-0.92	6.99
BR	890	10.98	9.53	3.13	56.49	149	8.40	7.85	0.63	26.45
GDP	890	5.76	7.02	-5.83	9.05	149	5.76	7.24	-5.83	9.05
INF	890	5.60	5.04	3.33	10.02	149	5.57	4.95	3.33	10.02

Source: Author's compilation.

As per Table 3, the mean and median values of the DER of financial companies are 4.18 and 4.17, with a minimum and maximum value ranging from 0.01 to 12.71. The mean value of DER indicates that financial companies heavily rely on debt, implying that the company is utilising a significant portion of its profits to pay interest. Thus, relatively less profit is left for shareholders, as reflected by the mean value of DPR, which is 0.19, and this ratio is lower as compared to non-financial companies. The range of DPR varies from

-0.00 to 1.43. SIZE, ROA, and BR have an average values of 0.006, 2.05, and 8.40, respectively.

The correlation matrix (Table 4) depicts that among non-financial companies, DER is positively correlated with DPR, SIZE, GDP, and INF but negatively with ROA and BR. DPR is positively correlated with DER, SIZE, BR, and INF, while being negatively correlated with ROA and GDP conforming (Sakr & Bedeir, 2020; Rani et al., 2020).

Table 4: Correlation Matrix

Non-Financial Companies								
	VIF	DER	DPR	SIZE	ROA	BR	GDP	INF
DER	1.2661	1.0000						
DPR	1.0366	0.0481	1.0000					
SIZE	1.1417	0.2428	0.1117	1.0000				
ROA	1.1145	-0.4262	-0.0026	-0.3178	1.0000			
BR	1.2423	-0.0369	0.0251	-0.0328	0.0313	1.0000		
GDP	1.2939	0.0169	-0.1476	-0.0533	-0.0006	-0.4300	1.0000	
INF	1.0349	0.1054	0.0316	-0.0746	0.0102	-0.0189	-0.1352	1.0000
Financial Companies								
	VIF	DER	DPR	SIZE	ROA	BR	GDP	INF
DER	1.0252	1.0000						
DPR	1.1141	-0.0269	1.0000					
SIZE	1.4295	0.0504	-0.0531	1.0000				
ROA	1.0612	-0.1265	0.2483	-0.2098	1.0000			
BR	1.0269	-0.0839	0.0892	-0.0066	0.0045	1.0000		
GDP	1.0422	-0.0119	-0.1707	-0.0377	0.0068	0.0902	1.0000	
INF	1.4223	0.0106	0.0563	-0.5118	0.1122	-0.1032	-0.1402	1.0000

Source: Author's compilation.

The correlation matrix of financial companies (Table 4), shows that DER and DPR are negatively correlated with each other ROA, BR and GDP are negatively correlated, while SIZE and INF are positively correlated with DER. On the other hand, DPR is positively correlated with ROA, BR and INF.

Anderson et al. (2016), Garg et al. (2024), and Garg et al. (2024a) suggest that the problem of multicollinearity exists when the correlation value across all variables is more than 0.70. The correlation value of all variables as shown in Table 4 is less than 0.70, which depicts the absence of multicollinearity among variables. The study also used

the Variance Inflation Factor (VIF) to check the issue of multicollinearity, which states that the value of VIF should be less than 10. The results of the VIF also indicate that there is no multicollinearity among all variables, since the value is less than 10 (Shah, 2019; Garg et al., 2023; Garg et al., 2024a).

Endogeneity is a prevalent problem in business decision-making caused by interdependence in financial decisions. According to Lee et al. (2016), simultaneity and insufficient or incorrect measurements of variables in the study may lead to endogeneity. To address the issue of endogeneity, the study uses TSLS methodology as simultaneous equations (Ahmed et al., 2021). The basic assumption of TSLS is that the variance of the error term should be homogeneous by nature. Therefore, the researchers employed the Breusch-Pagan-Godfrey test to identify the problem of heteroskedasticity in the TSLS model. The results of the Breusch-Pagan-Godfrey test demonstrate the presence of heteroskedasticity in the model. Thus, to remove the problem of heteroskedasticity the researchers have used the Heteroskedasticity and Autocorrelation Consistent (HAC) test. Therefore, the results of TSLS shown in Table 6 are free from HAC issues.

The value of adjusted R^2 of both variables i.e., DER and DPR in the case of non-financial companies are 0.604 and 0.034 depicting that 60% of the variation in DER while only 3% variation in DPR is explained by the selected independent variables in this study. The F-statistics for the first and second model are 340.530 and 7.413, respectively, with a significant probability value at 1% level of significance. In the third and fourth models related to financial companies, the adjusted R^2 is 0.756 and 0.294 exhibiting that 75% deviation in DER and 29% deviation in DPR is explained by the independent variables taken in the model and the value of F-statistics is 115.842 and 13.353 with significant p-value (0.000000) at 1%. The F-statistics also determines the validity of instruments variables along with model fitness. The p-value

of F-statistics is highly significant which denotes the fitness of the model and instrument variables are valid to estimate the endogenous variables (Ahmed et al., 2021).

In the first model, DER is the dependent variable while lagged DER, DPR, SIZE, and INF are used as independent variables. The results of TSLS shown in Table 5 depict that DER has a positive and significant relationship with lagged DER, SIZE, and INF whereas the relationship with DPR is positive and insignificant. The positive relationship between DER and DPR shows that when the company changes its capital structure it also tend to change its dividend policy in the same direction. The findings align with Sakr and Bedeir (2020); Nguyen et al. (2020), and Ahmed et al. (2021). Moreover, when inflation is positively related to DER, it indicates that in case of high inflation, companies use more debt for investing to get the advantage of lower cost of debt (Goel, 2019). Thus, H_{1a} and H_3 are accepted, while H_6 is rejected due to the positive relationship of INF with DER.

In the second model, DPR is a dependent variable while lagged DPR, ROA, BR and GDP are the independent variables. The findings of TSLS represent that DPR has a significant and positive relationship with lagged DPR, whereas DPR has a positive but insignificant relationship with DER and ROA. When DPR is positively related to DER it means that as the companies acquire more debt it will leads to the increase in the financial risk of the shareholders due to which shareholders will demand more dividend. On the other hand, BR and GDP have a negative relationship with DPR. The negative relationship between GDP and DPR suggests that when economic growth increases, the company pays less dividend generating negative indications about the company's internal affairs (Ariwinata & Badjra, 2021). The results are consistent to the findings of study conducted by Al-Najjar (2011); Jinadu and Opeyemi (2017); Miswanto and Prasetyo (2019); and Sakr and Bedeir (2020). Hence, H_{1b} , H_2 , and H_4 are accepted, while H_5 is accepted.

Table 5: Results of Two Stage Least Squares (TSLS)

Independent Variables	Non-Financial Companies		Financial Companies	
	DER	DPR	DER	DPR
C	-0.370* (0.0007)	0.404* (0.0000)	-0.512 (0.6049)	0.065 (0.1677)
DER	-	0.043 (0.2234)	-	0.001 (0.6329)
DER ₍₋₁₎	0.750* (0.0000)	-	0.873* (0.0000)	-
DPR	0.035 (0.2198)	-	0.369 (0.4346)	-
DPR ₍₋₁₎	-	0.117*** (0.0952)	-	0.468* (0.0001)

Independent Variables	Non-Financial Companies		Financial Companies	
	DER	DPR	DER	DPR
SIZE	0.063* (0.0096)	-	1.116 (0.5197)	-
ROA	-	0.001 (0.6364)	-	0.032*** (0.0923)
BR	-	-0.004 (0.1399)	-	0.003*** (0.0973)
INF	0.036* (0.0007)	-	0.173 (0.3693)	-
GDP	-	-0.016* (0.0058)	-	-0.010*** (0.0854)
R ²	0.606	0.040	0.762	0.318
Adjusted R ²	0.604	0.034	0.76	0.294
F-Statistics	340.530* (0.000000)	7.413* (0.000001)	115.842* (0.000000)	13.353* (0.000000)
D-W Statistics	1.981	2.018	1.903	1.977

Source: Author's compilation.

Notes: *, **, *** denote significance at 1%, 5% and 10% respectively.

In the parentheses, the probability values are shown.

In the case of financial companies, the findings of the third model depict that DER has a significant and positive relationship with its lagged value, while it has a positively insignificant relation with DPR, SIZE, and INF. The positive relation of DER with DPR and SIZE is also supported by the findings of Mittal and Kumari (2015); Jinadu and Opeyemi (2017); Miswanto and Prasetyo (2019); Al-Najjar and Taylor (2008); and Jain et al. (2023). Based on the findings of the study, H_{1a} and H_3 are accepted while H_6 is rejected due to the positive relationship of INF with DER. On the other hand, the results of the fourth model with DPR as a dependent variable indicate that lagged DPR, ROA, and BR have a positively significant relationship, while DER has an insignificant but positive relationship with DPR. The outcomes of this empirical study align with those of previous studies (Al-Najjar, 2011; Malik et al., 2013; Santosa & Nugroho, 2014; Angelia & Toni, 2020). The results are consistent with the hypotheses, so H_{1b} and H_2 are accepted. On the contrary, GDP has a significantly negative association with DPR. The finding is inconsistent with the study conducted by (Lotto, 2020; Romus et al., 2020; Ariwinata & Badjra, 2021) hence the H_4 and H_5 are rejected. The findings of TSLS also indicate that both capital structure and dividend policy have an insignificant but positive relation with each other, which implies that when a company changes its capital structure then its dividend policy also changes in the same direction but this change is not sufficient to describe the direct impact of one on the other significantly. Kim et al. (2007); and Sakr and Bedeir (2020) also suggested that both capital structure and dividend policy have a positive effect on each other;

hence, we accept the H_1 i.e., both capital structure and dividend policy are interrelated.

CONCLUSION

The main aim of the present study is to find out the interrelationship between capital structure and dividend policy of Nifty 200 companies listed on the NSE in India. The researchers also explored the impact of macroeconomic variables on the financial decisions of the companies. The sample of the study comprises non-financial and financial companies with 189 and 149 firm observations from 2013 to 2022. The researchers conclude that DPR, lagged DER, SIZE, and INF are positively related to the DER of both non-financial and financial companies. On the other hand, DPR is positively related to DER, lagged DPR, and ROA, while GDP is negatively associated with the DPR of non-financial as well as financial companies. The results also show that BR is negatively related to non-financial companies and positively related to DPR in financial companies.

The study is advantageous to policymakers, specifically for the managers at large as understanding of interdependency between capital structure and dividend policy can help them in framing optimal financing and payout policies and their execution. The results of the study ensure the managers that capital structure substantially contribute to the firm's ability and willingness to sustain dividend payments along with financial stability and flexibility. To reduce the risk associated with the variations in capital structure and dividend policy

managers should implement effective risk management strategies. The impact of the GDP growth rate and inflation rate on the capital structure and dividend policy is significant for government policymakers pursuing to build a supportive macroeconomic environment for the corporate sector. The capital structure changes as investment opportunities increases leads to the increase in the company's expenditure during the high economic growth. The rise in the inflation rate in an economy can affect the firm's ability to generate internal funds for dividend payments. The government should make efforts to maintain stable inflation rates so that firms can plan their financial decisions more effectively.

The researchers examined the interrelationship between financial decisions i.e., capital structure and dividend policy in this study. Future researchers can explore the interdependency among investment, financing and dividend decisions in the context of Indian companies. Moreover, the present study explored the profitability, firm size and business risk along with some macroeconomic variables such as GDP and inflation. However, future researchers can include other firm-specific factors, namely corporate governance attributes. Additionally, some other macroeconomic factors, like interest rates and exchange rates can be examined in further studies.

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