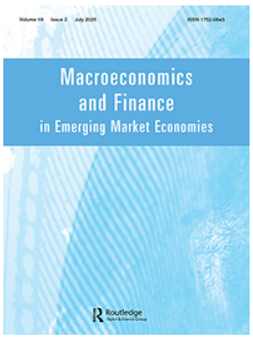

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Demystifying the theoretical, macro-economic and regulatory linkages enveloping the capital structure of Indian corporate firms

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ABSTRACT

This study unfolds the debt–equity dynamics and the intricacies of firms' leverage, financial traits and external factors – IBC implementation, economic policy uncertainty and geopolitical risk. We also examine the changing debt-pattern of Indian firms post-IBC implementation. NSE 500 firms' data spanning across 10 years (2014–2023) unveils conservative debt behaviour of firms, with the dominance of dynamic trade-off theory and the noteworthy impact of EPU, GPR and IBC on debt adjustment. Indian firms appear to be debt-sensitive; whilst no firm was unlevered either in terms of long or short-term debt, yet long-term debt appears to be the preference due to cost and flexibility.

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KEYWORDS
Capital structure dynamics; GPR; EPU; IBC; zero leverage firms

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Introduction

Debt management is one of the critical corporate decisions allied to firms' survival, growth and long-term subsistence. Ahead to Modigliani and Miller (1958), seminal theory suggesting debt-equity only relevance in the world of taxes in perfect capital market (Modigliani and Miller 1958). Financial scholars extensively exploring the aspect empirically endorse the influence of diverse factors, ranging from firms' traits to environmental changes- economic, regulatory and others on firms' financing decisions and leverage adjustments. Literature associates debt-equity mix with firms' financial and quality traits (Butt 2020), ownership stake (Zhou and Xie 2016), operating leverage (Chen, Harford, and Kamara 2019), corporate governance (Ronoowah and Seetanah 2023), financial and business cycles (Al-Zoubi, O'Sullivan, and Alwathnani 2018), supply shocks (Hussain et al. 2023), currency mismatches (Chui, Kuruc, and Turner 2018), policy changes and many more (Obeidat 2021; Segal and Ólafsson 2023).

With the trade-off theory aligning firm's value with optimal capital mix, offsetting cost and risk of financial distress (Myers 2001; Pratt, Barboza, and Brigida 2023; Titman and Wesels 1988), the pecking-order align capital structure decisions with information, signalling and agency cost (Graham and Harvey 2001). Suspected negative signalling associated with new equity issue compel the management for debt financing to offset the liquidity shortage (Chaklader and Padmapriya 2021). Equity is the preferred choice of firms with

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restricted inflows and debt constraints due to exhausted capacity or external market delinquency (Myers 2001).

Nevertheless, optimum capital is virtually a distant possibility owing to imperfect market conditions, flotation and adjustment cost variations (Nicodano and Regis 2019), yet firms try to adjust near to optimal for value-maximation (Abel 2018; T. K. Do, Huang, and Lo 2023; Esghaier 2023). Contradicting the pecking-order and traditional trade-off theories that endorse debt financing to be an essential decision influencing firms' value, recent literature honed on the prevalence of zero debt, particularly in the context of western economies of US, UK and Europe (Keefe and Nguyen 2023; Strebulaev and Yang 2013). With the static tradeoff theory emphasizing on optimum capital structure (Izhakian, Yermack, and Zender 2022) and dynamic theory on conservative debt capacity, maintaining leverage below optimal (Esghaier 2023), the zero-debt phenomenon enhances the capital structure puzzle complexity among scholars to explore the propellers driving the firms to deviate from the value-adding advantages, such as low WACC, tax shield and better market value. Studies link zero debt with financial constraints or the desire to appear financially flexible, specifically during the crisis (McNamara, O'Connor, and O'Donohoe 2023).

Enhanced market volatility, capital market instability, economic and regulatory changes, and geopolitical tensions are likely to trigger changes in corporate debt behaviour and the need to restore flexibility (M. H. Nguyen, Bakry, and Vuong 2024). Aheading in this direction, this research captures leverage dynamics of Indian Corporates with the Insolvency and Bankruptcy (IBC) Act, 2016, economic policy uncertainties (EPU) and geopolitical risk (GPR). Insolvency regulations have been evinced as the trigger for conservative financial structure (Agarwal and Singhvi 2023). IBC Act 2016 meant to inculcate financial discipline among the borrower firms towards the debt timely clearance. Differentiating from the existing literature that focuses on EPU and GPR distinctly, the study unfolds the intricacies of leverage dynamics considering the economic policy uncertainties, geopolitical risk and IBC impact. The study also captures the changing debt pattern of firms, segregating them into zero leverage, almost zero, long-term debt and short-term debt categories. The significant linkages in Indian corporate leverage and adjustment behaviour with EPU, GPR and IBC implementation is expected to bring-forth the variation in the corporate needs due to exogenous policy and environmental changes. The NSE 500 firms' data spanning across 10 years (2014–2023) unveil the conservative conduct of firms towards debt-management. The debt behaviour of the sample firms demonstrates the dominance of dynamic trade-off theory and preference towards restoring financial flexibility. Though no firm appears to be zero-leverage either in terms of long-term or short-term debt, yet firms appear to be inclined towards long-term debt. The paper presents useful insight for the managerial decision makers, regulators and researchers.

The next section delves into the significant literature supporting the study variables and prepositions. This follows the methodology section detailing the models, variable and methods used. The next section contains key empirical findings. Finally, the discussion of key interpretations, managerial implications and future research directions concluded the work.

Literature review

Capital structure dynamics constitutes among the extensively explored aspects in the finance literature (M. H. Nguyen, Bakry, and Vuong 2024), with a plethora of studies

examining the composition of the financing mix, determinants influencing financing decisions (Fuller, Wu, and Yildiz 2024), finance-mix and shareholders' value (Hussain et al. 2023), underpinning theories (Izhakian, Yermack, and Zender 2022), leverage adjustment under varied circumstances – firm, industry and environmental related, and other intricacies (Miloud 2022; T. Nguyen et al. 2021). However, the extensive literature substantiating wide-ranging complexities in the capital structure dynamics across industries, economies, and governing situations sets the ground for scholars to explore the explanatory variables decisive in firms' financing decisions.

Capital structure and leverage adjustment dynamics

Firms' financial traits

Firms' leverage decisions are essentially dictated by their unique characteristics, both real and intangible. Financial traits (operational profit, paying capacity, liquidity, collateral capacity, firm size), management quality, governance factors, market reputation, relationship with shareholders, experience, affiliates and association are virtually pivotal in authenticating firms' fundraising ability and credibility (Gopane, Gandanhamo, and Mabejane 2023; Hu and Kuah 2022). Other than the firm's qualitative and quantitative credit standing, the external environment enveloping the fundraising system – cost of capital, regulations, capital market risk, investors' sentiment and geopolitical factors are also decisive in capital structure decisions and adjusting behaviour (He and Kyaw 2023; Reddy, Mirza, and Yahanpath 2022).

Studies evince the existence of tradeoff theory with firms' leverage adjustment behaviour varying with firms' financial traits, managerial factors and exogenous forces (Lee et al. 2024; Shukla, Vyas, and Chaturvedi 2024). Leverage adjustment is aligned to firms' specific factors (Maroney, Wang, and Kabir Hassan 2019), profitability, cash flows, asset size, tangibility, tax shields (Lemma and Negash 2014), R&D spending (Azim Khan 2024), investment (Loncan, Panetsidou, and Synapis 2024), CSR strategies (T. K. Do, Huang, and Lo 2023) and many more.

A comparative Indo-China study pertaining to the textile industry (Chaklader and Jaisinghani 2017) reported a low adjustment speed of Indian corporate, evincing high adjustment costs for Indian firms compared to China. On the contrary, another comparative study reported speedy leverage adjustment rate for Indian firms *vis-à-vis* Chinese firms (Bajaj, Kashiramka, and Singh 2020). Scholarly literature links adjustment costs and speed to numerous factors, such as financial flexibility, investment, earning volatility, debt-level (Shukla, Vyas, and Chaturvedi 2024), economic growth, lending rate (Mushtaq et al. 2023), CSR, corporate governance, ownership structure, board size and many more (T. K. Do, Huang, and Lo 2023; Tekin and Polat 2023).

Risk and uncertainties

Leverage signifies the risk; thus, adjustment speed is expected to vary with enhanced risk exposure. Apart from the firm's internal constraints- profitability, liquidity, tangibility, market value, and corporate governance, the macroeconomic variations, external funds' supply and costs are likely to be decisive in firms' financing decisions (H. X. Do, Nguyen, and Nguyen 2022; M. H. Nguyen, Bakry, and Vuong 2024). High leverage during the crisis enhanced the risk of default (Tsuruta 2023). Studies link leverage-adjustment speed with

investors' sentiments (S. Li, Hoque, and Liu 2023), firm's value (Trejo-Pech, Kyaw, and He 2021), economic and business cycles (Nakonechna 2016) and policy and environmental uncertainties (Almustafa, Jabbouri, and Kijkasiwat 2023; Barka and Hamza 2025).

The literature infers the dominance of investors' sentiment on firms' capital structure. Whereas positive investors' attitude essentially boosts businesses' debt-raising ability, pushes aggressive leverage, deflated market sentiments and increasing cost of external debt hinder firms' adjustment speed, the impact is much intensified for financially constrained firms (S. Li, Hoque, and Liu 2023). Studies corroborate the inverse impact of macroeconomic disturbances on firms' leverage adjustment speed. Study examining the leverage behaviour of US firms align the global financial crisis with the reduced leverage adjustment speed of the sample firms. During the pre-crisis period, financially stressed firms' demonstrated quick leverage adjustment. Firms with large divergence from the goal level seem to be sluggish adjusters (Dang, Kim, and Shin 2014). On examining the impact of COVID on firms' capital structure, Vo, Mazur, and Thai (2022) found a speedier adjustment for the firms domiciled in severely affected countries (Vo, Mazur, and Thai 2022).

Studies infer the influence of monetary policy (Azofra, Rodríguez-Sanz, and Velasco 2020), economic growth rate (He and Kyaw 2023), institutional quality, macroeconomic shifts on firms' leverage adjustment tendencies (He and Kyaw 2023).

Enhanced information void among the corporate borrowers and funds suppliers, increased default risk due to increased vulnerability of firms' operations, profitability, and liquidity, makes the debt expensive (Almustafa, Jabbouri, and Kijkasiwat 2023). Studies infer policy uncertainty and geopolitical risk with volatile market behaviour, stock-returns, assets prices (Gu, Zhu, and Yu 2021; X. Li et al. 2022), corporate investment and leverage behaviour (Almustafa, Jabbouri, and Kijkasiwat 2023). Policy uncertainty expected impact on the funds supply, compel companies to play prudently and reinstate more debt to set-off the restrained funds availability (Mokdadi and Saadaoui 2023; Zhaoxia 2020).

Financial flexibility

With enhanced market volatility, financial flexibility has emerged a vital corporate preference (Agrawal 2020; James et al. 2022; Panda et al. 2023). To appear agile to exogenous disturbances- market disruptions, financial crises, Covid-Pandemic, economic political uncertainty and other interferences, firms restore financial flexibility by maintaining spare-debt capacity (Bancel, Mittoo, and Mittoo 2011; Barka and Hamza 2025; Lei et al. 2021). Financial flexibility is a significant determinant of firms' leverage (DeAngelo, Gonçalves, and Stulz 2018; M. Li and Roberts 2023). Studies confirm firms' deleveraging behaviour from a historic high debt level to almost nil for restoring flexibility (Bae and Chung 2022; DeAngelo, Gonçalves, and Stulz 2018; M. Li and Roberts 2023). A study analysing the US publicly traded firms from 1971 to 2006 confirms financial flexibility to be a priority in the capital mix, more crucial than traditional determinants such as profitability, depreciation and amortization expense, asset size, and others (Pendar, Tayar, and Karimeh 2019). A study analysing leverage dynamics of US enterprises from 2013 to 2019 reveals firms' sensitivity to cover the deviation from target leverage *vis-à-vis* elevated debt levels, prima facie, implying the preference for retaining financial flexibility, cutting the extra leverage (Hegde, Panda, and Masuna 2023; Trejo-Pech, Kyaw, and He 2021).

In the backdrop of the above literary corroborations, it is reasonable to presume that firms' financial and qualitative traits, desire for flexibility and macroeconomic dynamics

determine the intricacies of their capital structure. Advancing in this direction, the study investigates the leverage dynamics of Indian corporations and unfolds the impact of EPU, GPR and IBC on firms' leveraging behaviour and adjustment speed. The study revolves around following research objectives:

- To explores the dominance of trade-off and pecking-order theory in the capital structure decisions of the Indian corporates
- To explore the influence of EPU, GPR and IBC in capital structure decisions of firms
- To explore the capital structure intricacies of zero-levered firms in India

Data, method and models

Data

NSE 500 firms constitute the universe of study. Excluding the non-financial firms and firms with inadequate data, we finally left with 293 sample firms, leading to 2930 observations spanning over 10 years, 2014 to 2023. To exclude the extreme financial values, winsorization at 1st and 99th percentile resulted in 2646 unbalanced observations. The rationale of the period from 2014 onwards is to analyse the changing leverage behaviour post-IBC implementation.

Research model

To capture the leverage adjustment behaviour of sample firms and the influence of macroeconomic changes, GPR, and IBC, the partial adjustment model is used, following the past studies (Cao and Cui 2021; He and Kyaw 2023; Trejo-Pech, Kyaw, and He 2021). First, we use the integrated two-stage nested model (He and Kyaw 2023) to capture the dominating theories underlying the target adjustment behaviour of Indian firms. The steps are delineated below:

Step 1: Equation 1 explore the determinants of leverage. :

$$Lev_{it} = Tangibility_{it} + NDTS_{it} + EDITDAR_{it} + Tobin'sQ_{it} + LnTA_{it} + U_{it} + e_{it} \quad (1)$$

Here, Lev represents the leverage ratio of firm i in year t. Both market value (MLEV) and book value (MLEV) measures of debt ratio are used. The fitted values from equation (1) are taken as the proxy of target leverage (TLEV) throughout. MLEV being influenced by the variation in equity value shows the negative association with the firm's Tobin Q, *prima facie*,suggesting low debt for highly valued firms. To rule out the possible misinterpretation in debt value due to a change in equity market value, without any variation in actual leverage, for further analysis, BLEV is used as a measure of firm leverage.

Step 2: Equation 2 measure the adjustment speed of firms:

$$ChgBLEV_{it} = a_{it} + bTLD_{it} + e_{it} \quad (2)$$

Here, $TLD_{it} = TBLEV_{it} - BLEV_{it-1}$ representis the deviation in target leverage from the previous year's leverage.

Step 3: To capture the leverage adjustment along with cost and process, the error correction model (Equation 3) is used.

$$ChgBLEV_{it} = a_{it} + b0 * TLC_{it} + b1 * LECM_{it} + e_{it} \quad (3)$$

Here, $LECM_{it} = BLEV_{it-1} - TBLEV_{it-1}$ captures the speed to adjusting the variation in the actual leverage from past year target leverage; and , represents the change in current year target leverage compared to previous year; model assumes the cost of adjustment as independent.

Step 4: Equation 4 exclusively captures the existence of pecking order theory in leverage adjustment behaviour;

$$ChgBLEV_{it} = a_{it} + b * FCF_{it} + e_{it} \quad (4)$$

Here, FCF represents the free cash flows, measured as (Cash from operations+Cash from Investment)/Total assets.

Step 5: Nested augmented partial-adjustment model (equation 5) simultaneously captures the existence of tradeoff and pecking order theory.

$$ChgBLEV_{it} = a_{it} + b0 * TLD_{it} + b1 * FCF_{it} + e_{it} \quad (5)$$

Step 6: Finally, the error correction model (Equation 6) explore the all-inclusive target adjustment speed and pecking order theory evidence.

$$ChgBLEV_{it} = a_{it} + b0 * TLC_{it} + LECM_{it} + b * FCF_{it} + +e_{it} \quad (6)$$

Further, following the partial-adjustment model (Shrestha, Philip, and Khaw 2024), we try to explore the influence of GPR, EPU and IBC of capital structure behaviour.

$$BLEV_{it} - BLEV_{it-1} = \lambda(TBLEV_{it} - BLEV_{it-1}) + \mu_t + e_{it} \quad (i)$$

where, $TBLEV_{it}$ is related to explanatory variables.

$$TBLEV_{it} = \alpha + \beta x_{it} + \eta_t^* \quad (ii)$$

Substituting (i) in (ii), $BLEV_{it} - BLEV_{it-1} = \lambda\left(\alpha + \beta X_{it} + \eta_t^* - BLEV_{it-1}\right) + \mu_t + e_{it}$ .....(iii)

Or, $BLEV_{it} = bo + b1 * BLEV_{i,t-1} + b2 * X_{it} + \eta_i + \mu_t + e_{it}$ .....(iv)

where, b0=λα, b1=(1-λ), b2=λβ and $\eta_i=\lambda\eta_i$;. η_i and μ_t represents the firms fixed effects and year fixed effects. $\eta_i = \lambda\eta_i$.

To accommodate the influence of EPU, GPR and IBC triggered changes, following multi-regression Equation 14 to f) are examined.

$$BLEV_{it} = bo + b1 * BLEV_{i,t-1} + b2 * X_{it} + EPU_{it} + \eta_i + \mu_t + e_{it} \quad (7a)$$

$$BLEV_{it} = bo + b1 * BLEV_{i,t-1} + b2 * X_{it} + EPU_{it} + EPU * BLEV_{t-1} + \eta_i + \mu_t + e_{it} \quad (7b)$$

$$BLEV_{it} = bo + b1 * BLEV_{i,t-1} + b2 * X_{it} + GPR_{it} + \eta_i + \mu_t + e_{it} \quad (7c)$$

$$BVL_{it} = bo + b1 * BLEV_{i,t-1} + b2 * X_{it} + GPR * BLEV_{it-1} + \eta_i + \mu_t + e_{it} \quad (7d)$$

$$BVL_{it} = bo + b1 * BLEV_{i,t-1} + b2 * X_{it} + DIBC_{it} + \eta_i + \mu_t + e_{it} \quad (7e)$$

$$BVL_{it} = bo + b1 * BLEV_{i,t-1} + b2 * X_{it} + DIBC * BLEV_{it-1} + \eta_i + \mu_t + e_{it} \quad (7f)$$

Table 1. Study variables.

Model variables	Measures	Proxy
BLEV	Total debt/Total Assets	Book value of leverage
MLEV	Total Debt/(MV of Equity+Debt)	Market value of leverage
TBLEV	Fitted value of equation 1	Target leverage at optimal level
EBITDAR	EBITDA/Net sales	Profitability
LnTA	Natural log of total assets	Size of firm
Tangibility	PPE/TA	Tangible assets
Tobin's q	Enterprise value/TA	Growth
DIBC	Dummy variable; DIBC = 1, if year > 2015	Post-IBC year
GPR	Ln of GPR index	Geopolitical risk
EPU	Ln of EPU	Economic policy uncertainties
NDTS	Depreciation/TA	Non-debt tax shield
FCFF	(Cash from operations+Cash from investment analysis)/TA	Free cash flow
TLD	$TBLEV_t$-BLV_{t-1}	Deviation of target leverage from previous year BLV; capture the adjustment behaviour
TLC	$TBLEV_t$-$TBLEV_{t-1}$	Change in Target leverage
LECM	$TBVL_{t-1}$-$BLEV_{t-1}$	Speed of adjustment
ChgBLEV	BVL_t-BVL_{t-1}	Change in leverage

Here, EPU and GPU symbolize index of economic policy uncertainty and geopolitical risk index (captured from policyuncertainity.com); DIBC is a dummy variable, proxy for IBC year (DIBC = 0, if year < 2016, else 1).

Table 1 details the study variables used.

Empirical findings

Descriptive statistics

Table 2 presents descriptive statistics of the variables examined for multiple regression analysis. The median value of BLEV and TBLEV marginal difference shows the sensitivity of Indian corporate towards leverage and adjusting to the targeted level. A significant deviation in MLEV (median of 0.16) and BLEV (median 0.44) supports using the book value of debt for better insight and overcoming the possible misinterpretation due to fluctuation in equity market value.

Table 4 exhibits the correlation matrix. Except for high correlation values among TLD-BLEV(−.80), LECM-BLEV(.8), and LECM-TLD (−.97), the rest of the statistics seem insignificant, lending credence to non-collinearity among models' variables for further analysis (Table 3).

4.2. Determinants of BLEV and MLEV

Table 5 shows the results of equation 2. The fitted value of the Equation are taken as target leverage (TBLEV). The findings exhibit the determinants of book value and market value-based leverage. Results authenticate 27% of the influence of model predictors in explaining the MLEV and 18 % in BLEV.

Findings reflect MLEV's significant affirmative linkage with the firm's size, tangibility, and non-debt tax shield, and negative linkage with firms' profitability and Tobin's Q. These results corroborate that large collateral encourages firms to use more leverage.

Table 2. Descriptive statistics.

	BLEV	TBLEV	MLEV	TLC	LNTA	TANGIBILITY	EBITDAR	NDTS	TOBINQ	TLD	LECM	FCFF	LNEPU	LNGPR	CHGBLEV
Mean	0.45	0.46	0.22	0.00	11.00	0.26	0.15	0.03	2.76	0.01	0.01	0.04	4.35	4.63	−0.01
Median	0.44	0.45	0.16	0.00	10.88	0.25	0.15	0.03	2.13	0.02	0.02	0.04	4.30	4.60	-
Maximum	0.79	0.76	0.71	0.12	13.71	0.57	0.33	0.07	9.60	0.34	0.34	0.22	4.60	5.08	0.10
Minimum	0.16	0.28	0.03	−0.13	8.90	0.02	0.03	0.00	0.46	−0.36	−0.36	−0.09	4.09	4.35	−0.12
Std. Dev.	0.16	0.11	0.18	0.04	1.13	0.15	0.07	0.01	2.09	0.17	0.17	0.06	0.15	0.20	0.04
Skewness	0.18	0.54	0.96	−0.12	0.37	0.26	0.43	0.68	1.20	−0.16	−0.15	0.36	0.24	0.83	−0.14
Kurtosis	2.03	2.62	2.78	3.82	2.53	2.06	2.60	3.03	3.79	2.30	2.31	3.10	2.49	3.37	3.45
Jarque-Bera	118.95	142.54	409.50	71.46	85.33	127.97	100.40	206.44	704.46	59.51	56.46	56.75	54.03	355.78	28.70
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	1,196.14	1,225.83	590.90	1.41	29,110.32	681.64	403.38	74.87	7,307.83	31.80	29.71	116.87	11,514.61	13,618.50	−14.60
Sum Sq. Dev.	71.10	30.48	87.25	4.28	3,378.31	56.54	11.64	0.52	11,511.96	67.28	66.20	9.32	58.41	112.04	3.74
Observations	2646	2646	2646	2382	2646	2646	2646	2646	2646	2382	2382	2645	2646	2940	2382

Table 3. Correlation.

	BLEV	MLEV	TLC	LNTA	TANGIBILITY	EBITDAR	NDTS	TOBINQ	TLD	LECM	FCFF	LNEPU	LNGPR	CHGBLEV
BLEV	1.00													
MLEV	0.64	1.00												
TLC	0.04	0.03	1.00											
LNTA	0.03	0.14	0.08	1.00										
TANGIBILITY	−0.10	0.03	0.07	−0.13	1.00									
EBITDAR	−0.38	−0.48	−0.12	−0.14	0.14	1.00								
NDTS	−0.01	−0.06	0.10	−0.18	0.50	0.27	1.00							
TOBINQ	−0.22	−0.69	−0.00	−0.18	−0.04	0.46	0.05	1.00						
TLD	−0.80	−0.48	0.08	0.12	0.31	0.15	0.42	0.11	1.00					
LECM	−0.80	−0.48	−0.16	0.10	0.29	0.18	0.39	0.11	0.97	1.00				
FCFF	−0.05	−0.05	0.01	0.07	0.05	0.30	0.09	0.08	−0.03	−0.03	1.00			
LNEPU	−0.06	0.00	0.05	0.03	0.01	−0.00	0.04	−0.03	0.08	0.07	0.09	1.00		
LNGPR	0.01	−0.06	0.05	0.08	−0.04	−0.01	−0.04	0.08	−0.00	−0.01	−0.04	0.07	1.00	
CHGBLEV	0.09	−0.03	0.03	0.04	−0.13	−0.17	−0.12	0.07	0.15	0.14	−0.23	−0.01	0.04	1.00

Table 4. Determinants of BLEV and MLEV.

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic
TANGIBILITY	0.26	11.86***	0.07	1.15
NDTS	0.65	6.99***	6.52	24.20***
EBITDAR	−0.72	−23.12***	−0.76	−8.43***
TOBINQ	−0.00	−5.18***	0.00	3.44***
LNTA	0.02	34.99***	0.03	16.09***
Dependent Variable:	MLEV		BLEV	
R-squared	0.271387		0.187635	
Adjusted R-squared	0.270394		0.186528	
S.E. of regression	0.193585		0.562849	
Durbin-Watson stat	0.311375		0.240326	
Instrument rank	6		6	
Mean dependent var	0.244284		0.487855	
S.D. dependent var	0.226635		0.624052	
Sum squared resid	109.9894		929.8056	
Second-Stage SSR	109.9894		929.8056	
Prob(J-statistic)	0.000172		0.001668	

Method: Panel Two-Stage Least Squares
Sample: 2014 2023; Periods included: 10
Cross-sections included: 294; Total panel (balanced) observations: 2940
Instrument specification: C TANGIBILITY_PPE_TA NDTS EBITDA_TA TOBINQ_EV_TA LNTA
Constant added to instrument list

However, firms with good earnings and market value prefer financial flexibility and maintaining low debt. Similar results are obtained for BLEV determinants with the exception to Tobin Q, which shows a positive linkage with the book value of debt. The fluctuation in the equity market value, without any significant variation in the actual leverage, may be the possibility for this differentiation in Tobin's Q impact on leverage. Therefore, to exclude the possible misinterpretation in the leverage value due to variation in the market value of equity, the study uses BLEV for further analysis.

Leverage adjustment behavior of sample firms

Table 5 shows the findings of regression equations 2 to 6 used to explore the leverage adjustment dynamics of sample firms. The Generalized Method of Moments to validate the findings. Results, as expected, authenticate the sensitivity of Indian firms towards leverage adjustment. The results of five equations (2–6) are showcased in panels 1 to 5.

The significant coefficient (.17) of TLD (panel 1) suggests the firms' tendency to switch to the predetermined target level. The results of equation 3 (panel 2) used to explore the speed of adjustment evince that firms try to restore the lag year deviation in the debt level from the target level speedily as corroborated by a significant coefficient value of 0.28 of LECM. These results authenticate the dominance of tradeoff theory in the capital structure decisions of Indian corporate firms.

Panel 3 shows the results of equation 4 used to explore the dominance of pecking order theory in the firm's leverage decisions. The results approve the free cash flows to be a sensitive factor influencing firms' debt dynamics. The significant negative coefficient of FCF (−.21) proclaims that any decline in the firm's cash flow is a significant predictor of changing debt levels. However, the nested model results (Panel 4) evince the dominance of the tradeoff theory over the pecking order theory. The significant coefficient (.17) of

Table 5. Model findings for leverage adjustment behaviour of all sample firms.

Panels		1		2		3		4		5
Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
CHGBLEV(−1)	0.01	0.50	−0.04	−1.43	0.03	1.17	0.03	1.18	−0.04	−1.23
TLD	0.17	3.85 ***					0.17	3.24***		
TLC			0.02	0.12					0.12	1.07
LECM			0.28	4.17 ***					0.30	4.59 ***
FCFF					−0.21	-1.98 **	−0.01	−0.12	0.03	0.26
Effects Specification: Cross-section fixed (first differences)										
Mean dependent var		0.00		0.00		0.00		0.00		0.00
S.E. of regression		0.05		0.05		0.05		0.05		0.05
J-statistic		24.61		24.66		35.65		29.95		26.40
Prob(J-statistic)		0.54		0.48		0.10		0.23		0.33
S.D. dependent var		0.05		0.05		0.05		0.05		0.04
Sum squared resid		3.67		3.20		3.91		3.13		2.72
Instrument rank		28		28		28		28		28
Arellano-Bond Serial Correlation Test										
Test order		m-Statistic		m-Statistic		m-Statistic		m-Statistic		m-Statistic
AR(1)		−9.02***		−6.63***		−10.77***		−8.42***		−6.01***
AR(2)		0.00		−1.90		−0.79		−0.92		−2.18

Dependent Variable: CHGBLEV; Method: Panel Generalized Method of Moments; Transformation: First Differences Sample (adjusted): 2017 2023; periods included: 7; White period (period correlation) instrument weighting matrix; White period (cross-section cluster) standard errors & covariance (d.f corrected Standard error and t-statistic probabilities adjusted for clustering Instrument specification: @DYN(CHGBLEV,-2); Constant added to instrument list; ** Significant at 95% level; *** Significant at 99% level.

TLD compared to the insignificant value (−.01) for FCFF authenticates that firms' capital structure decisions are dominated by tradeoff theory, with management focus on shifting to the optimum target level.

Panel 5 exhibits the results of the augmented error correction model (Equation 6). The significant coefficient value of .30 authenticates the firms' tradeoff behaviour with speedy adjustment in the firms' debt to the target level. Overall results evince the dominance of tradeoff and speedy adjustment in the deviation from the targeted debt level to maximize the firm's value. J-statistic value and significant first-order correlation (AR1) value for all the equations (panels 1 to 5) authenticate the validity of the model instruments.

Impact of EPU, GPR and IBC on leverage dynamics of Indian firms

Considering the significant influence of macroeconomic and regulatory changes on funds demand, supply, cost, and risk dynamics, the research unearths the influence of EPU, GPR, and IBC implementation (2016) on firms' leverage dynamics. Table 6 (panels 1–6) displays the results of Equation 14), used to quantify the effects of EPU, GPR, and IBC on businesses' leverage.

Contrary to expectations, there appears to be no discernible association between the sample firms' debt. The insignificant coefficient value of LnEPU and interaction variable LnEPU*BLEV(−1) infer the ineffectiveness of economic policy uncertainty in influencing firms' capital structure decisions. Possibly, this reflects the agility of the Indian financial system to policy uncertainties. The corporates are confident of the robustness of the capital market and that variations in economic policy will be favourable.

Panels 3 and 4 results portray the influence of GPR on the firms' debt and adjustment speed. Results show no substantial association of GPR on firms' leverage; however, a significant negative coefficient of interaction term GPR *BLEV(−1), though at 10% level, infers the reduction in leverage adjustment speed of firms influenced by geopolitical risk. The increased cost of adjustment due to GPR, perhaps is the reasons for the low adjustment speed, as corroborated by earlier studies (*).

Panels 5 and 6 show the influence of IBC implementation 2016 on firms' leverage behaviour. Here, DIBC is a dummy variable, where DIBC = 1, if year > 2016, else 0. Findings underscore the significant impact of IBC on firms' capital structure and adjustment behaviour. The negative association of DIBC with leverage and the positive association of interaction term DIBC*BLEV(−1) confirm the enhanced conservatism in firms' leverage and increased adjustment speed post-IBC. These findings suggest the effectiveness of IBC in inculcating disciplined debt management of Indian firms.

In line with the expectations, we found prior year debt level and tangibility as significant positive factors influencing firm leverage and firms's size as negative predictors for firms' leverage. J-statistic value and significant first-order correlation (AR1) for all the equations authenticate the validity of the instruments.

Leverage dynamics of zero-leverage firms in India

To identify the tendency of zero leveraging behaviour of Indian firms, we segregated the firms based on their debt composition. Table 7 exhibits the categorization of sample firms based on their leverage as ZL, AZL, ZLL, AZLL, ZSL, AZSL. The data, spanning 10 years,

Table 6. Impact of EPU, GPR and IBC implementation on firms leverage behaviour.

Panels	EPU				GPR				IBC			
Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
BLEV(−1)	0.20	4.57***	0.17	0.34	0.29	3.99***	0.73	2.53***	0.41	8.59***	0.44	4.81***
LNTA	−0.07	−3.58***	−0.07	−3.66***	−0.05	−2.42**	−0.05	−2.41***	−0.07	−3.24***	−0.07	−2.99***
TANGIBILITY	0.34	1.68*	0.31	1.55	0.75	3.19***	0.71	3.02***	0.65	4.28***	0.67	4.87***
EBITDAR	−0.28	−1.49	−0.28	−1.53	−0.02	−0.08	0.02	0.08	−0.94	−5.13***	−0.96	−5.37***
NDTS	−1.78	−1.25	−1.61	−1.12	−5.34	−3.47***	−5.17	−3.39***	−7.92	−5.71***	−8.07	−4.60***
TOBINQ	0.00	1.39	0.00	1.70*	0.00	0.47	0.00	0.41	−0.00	−0.51	−0.00	−0.77
LNEPU	0.00	0.18	−0.00	−0.02								
LNEPU*BLEV(−1)			0.01	0.09								
LNGPR					0.00	0.16	0.04	1.66				
LNGPR*BLEV(−1)							−0.10	−1.68*				
DIBC									0.02	2.71***	0.05	0.93
DIBC*BLEV(−1)											−0.05	−0.49
Effects Specification: Cross-section fixed (first differences)												
Mean dependent var		−0.01		−0.01		−0.01		−0.01		−0.01		−0.01
S.E. of regression		0.07		0.07		0.07		0.07		0.08		0.08
J-statistic		18.58		18.48		30.17		26.31		26.57		25.22
Prob(J-statistic)		0.82		0.78		0.41		0.56		0.59		0.62
S.D. dependent var		0.06		0.06		0.05		0.05		0.05		0.05
Sum squared resid		4.90		4.89		6.80		6.65		1.74		1.78
Instrument rank		32.00		32.00		36.00		36.00		36.00		36.00
Arellano-Bond Serial Correlation Test												
Test order		m-Statistic		m-Statistic		m-Statistic		m-Statistic		m-Statistic		m-Statistic
AR(1)		−4.29***		−4.24***		−4.55***		−4.34***		−3.05***		−3.18***
AR(2)		−2.16**		−2.20***		−0.82		−0.92		−0.52		−0.53

Dependent Variable: BVL Method: Panel Generalized Method of Moments; Transformation: First Differences; Sample (adjusted): 2016 2023; White period (period correlation) instrument weighting matrix; White period (cross-section cluster) standard errors & covariance (d.f. corrected) Standard error and t-statistic probabilities adjusted for clustering; Instrument specification: @DYN(BLEV,-2) Constant added to instrument list; ***significant at 1%; **Significant at 5%; *significant at 10%.

exhibits the inexistence of a zero-leveraging trend among the Indian firms. We found no firm practicing absolute nil leverage, as corroborated by zero value in ZL row in all the years. Even a negligible proportion of firms exhibit almost zero leverage (5% leverage). Data suggest the firms prefer long-term debt to short-term financing, as corroborated by the high number of AZLL firms *vis-à-vis* AZSL firms. Further, the stable number of dividend payers throughout, except for the COVID-19 pandemic year, indicates firms' conservative pay-out behaviour independent of firms' leverage.

The leveraged firms that appeared 80 to 90 percent till 2018 plunged to 60 to 70 post-2019. Following the rising US interest rates and turbulent investment scenario, severe drop was witnessed in the primary bond offerings by the Indian issuers in 2018; the bond proceed was recorded $47.2 billion in 2018, lowest of the decade in 2018, registering a decline by 30% from $67.4 billion marked a year before (Thomson Reuters). The fear of IBC, Pandemic COVID-19 disturbance may be the reason for the decline in the later years.

This subsequent section attempts to analyse the leverage and adjustment dynamics of zero-leverage and non-zero leverage firms. In the backdrop of no ZL firms and very small proportion of firms to be almost zero small leverage, we have considered almost zero long-term leverage firms (AZLL) as zero-levered for the analysis. The firms with AZLL in any year from 2014 to 2023 are considered as zero leverage, else non-zero leverage. Out of 293 firms, 61 firms found to be almost zero leverage with long-term debt of 5% or less.

However, with the enhanced regulatory strictness and implementation of new regulation debt payment of small and MSME registered vendors with 45 days, the significant restructuring in the debt pattern, particularly, short-term debt of the Indian corporates is expected from FY 2024 onwards.

Leverage adjustment behaviour of ZL and NZL firms

Table 8 shows the leverage adjustment findings of zero-levered and non-zero-levered firms. Horizontal Panel 1 contains the results of ZL firms, and Panel 2 shows the NZL firms.

Table 7. Leverage tendency 2014 onwards.

Years	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
ZL	0	0	0	0	0	0	0	0	0	0
AZL5%	6	2	2	3	3	2	5	5	3	3
ZLL	73	82	92	93	92	19	14	13	13	13
AZLL5%	154	158	172	185	179	157	160	168	174	174
ZSL	0	0	0	0	0	0	0	0	0	0
AZSL	8	4	3	4	6	7	7	8	3	6
Levered firms	241	246	269	285	280	185	186	194	193	196
	82%	84%	91%	97%	95%	63%	63%	66%	66%	67%
Total firms	294	294	294	294	294	294	294	294	294	294
Dividend payers	256	243	206	254	257	247	180	242	254	254
%	0.87	0.83	0.70	0.86	0.87	0.84	0.61	0.82	0.86	0.86
No. of regular dividend payer		128	50	148	132	166	2	158	138	254
%		0.53	0.24	0.58	0.51	0.67	0.01	0.65	0.54	1.00
DivCut		115	156	106	125	81	178	84	116	0
%		0.47	0.76	0.42	0.49	0.33	0.99	0.35	0.46	-

ZL Zero leverage; Total debt = 0
AZL5% Total Debt/Total Asset < 5%
ZLL Long-term debt = 0
AZLL5% Long-term debt/Total assets < 5%
ZSL Short-term debt = 0
AZSL Short-term debt/Total assets < 5%

The findings infer significant variations in the behaviour of low-leverage firms compared to sample firms. A significant TLD coefficient (0.24) value authenticates the firms' leverage adjustment behaviour to restore the target level. Significant coefficients of TCL (.28) and LECM (.38) corroborate the firms' speedy tendency to fill in the deviation in the target leverage and the previous year's deficiency in actual and target debt levels. Firms are more focused on filling the void of the previous year's targeted and actual debt level compared to the deviation in the previous year's and the current year's target level. Further, the findings of vertical panel 3 support the dominance of the pecking order theory, as corroborated by the (−.035) coefficient value of FCFF. The nearly equal coefficient of TLD (.23) and FCFF (−.24) infers that low-levered firms are sensitive to market reaction. These firms are risk averse to increasing debt-level and prefer speedy adjustment to the targeted level; however, any deficiency in the cashflows prompts them for debt-capital rather than equity. The high LCEM coefficient of 0.37 (panel 5) authenticates the firms' speedy adjustment of the deficit to the target level. Overall findings support that firms are flexibility sensitive and prefer to be financially flexible and avoid the investors' negative response. Contrary to the adjustment behaviour of sample firms witnessed in Table 5 findings, where we found TLC to be significant in ZL firms, corroborating firm tendency to compensate the deviation on targeted leverage.

Horizontal panel 2 portrays the results of NZL firms. Significant TLD coefficient (.2) confirms NZL firms' tendency to leverage adjustment to the target level. The high coefficient values LECM (.31) and TLC (.28) infer the speedy adjustment of target debt deviation as well as prior year deviated debt and targeted debt level. The insignificant FCFF coefficient corroborates the irrelevance of pecking order behaviour in NZL firms' capital structure decisions. Results of panel 4 portray significant coefficient values of TLD (.2) and insignificant (.02) of FCFF, authenticate the capital structure decisions to be dominated by tradeoff theory, with the insignificant influence of FCFF theory. The augmented nested model findings (panel 5) also lend credence to the speedy adjustment of target debt shortfall (TLC .3) as well as the shortfall in book debt and targeted debt level of the previous year (LECM .32).

Overall findings authenticate the ZL firms capital structuring decisions to be dominated by flexibility intents. These firms are risk averse to market sensitivity and prefers to maintain spare debt capacity to capitalize the market value.

Impact of EPU, GPR and IBC on leverage dynamics of ZL and NZL firms

The study examines the impact of EPU, GPR, and IBC on the leverage behaviour of ZL and NZL firms. Table 9 portrays the key results of ZL firms. Data unveils significant positive predictor association of EPU and negative association of interaction term EPU*BLEV(−1) on ZL firms' BVL. These results corroborate the conservative approach of ZL firms; these firms maintain high leverage, sensitizing the economic policy-induced shocks. However, their speed of adjustment gets slower due to the rise in cost under economic uncertainties.

ZL firms evince a similar relationship with GPR. The negative coefficient of GPR (0.04) and interaction term LnGPR*BLEV(−1) (−.09) indicate that firms' debt level and adjustment speed reduce with geopolitical risk sensitivity.

Data show the highly significant positive association of DIBC with BLEV, hinting at increased debt level post-IBC influence. However, the impact of IBC on adjustment speed

Table 8. Adjustment behaviour of ZL and NZL firms.

	1		2		3		4		5	
Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Panel 1: ZL firms										
CHGBLEV(−1)	−0.04	−1.36	−0.04	−1.13	0.07	1.79*	−0.00	−0.11	−0.03	−0.86
TLD	0.24	4.76***					0.23	3.52***		
TLC			0.28	3.40***					0.20	1.64*
LECM			0.38	5.45***					0.37	4.16***
FCFF					−0.35	-4.85***	−0.24	-3.01***	−0.18	-1.94*
Dependent Variable: CHGBLEV										
Effects Specification: Cross-section fixed (first differences)										
Mean dependent var		−0.00		−0.00		−0.00		−0.00		−0.00
S.E. of regression		0.04		0.04		0.04		0.04		0.04
J-statistic		20.47		22.24		21.99		25.17		22.00
Prob(J-statistic)		0.77		0.62		0.69		0.45		0.58
S.D. dependent var		0.05		0.04		0.04		0.04		0.04
Sum squared resid		0.59		0.57		0.59		0.46		0.46
Instrument rank		28.00		28.00		28.00		28.00		28.00
Arellano-Bond Serial Correlation Test										
Test order		m-Statistic		m-Statistic		m-Statistic		m-Statistic		m-Statistic
AR(1)		−3.76***		−3.04***		−4.34***		−3.83***		−2.53***
AR(2)		−0.61		−1.20		−0.82		−1.07		−1.13
Cross-sections included:		56		56		59		56		56
Total panel (unbalanced) observations:		326		312		334		316		302
Panel 2: NZL firms										
Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
CHGBLEV(−1)	−0.00	−0.18	−0.04	−1.34	0.01	0.39	0.03	1.00	−0.04	−1.05
TLD	0.20	4.05***					0.20	3.20***		
TLC			0.28	2.02***					0.30	2.59***
LECM			0.31	4.39***					0.32	4.66***
FCFF					−0.12	−1.25	0.02	0.20	−0.01	−0.07
Effects Specification; Cross-section fixed (first differences)										
Mean dependent var		0.00		0.00		0.00		0.00		0.00
S.E. of regression		0.05		0.05		0.05		0.05		0.05
J-statistic		25.55		27.13		31.73		23.96		23.95

(*Continued*)

Table 8. (Continued).

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Prob(J-statistic)		0.49		0.35		0.20		0.52		0.46
S.D. dependent var		0.05		0.05		0.05		0.05		0.04
Sum squared resid		2.96		2.55		3.26		2.58		2.18
Instrument rank		28.00		28.00		28.00		28.00		28.00
Test order		m-Statistic		m-Statistic		m-Statistic		m-Statistic		m-Statistic
AR(1)		−8.04***		−5.14***		−9.49***		−7.64***		−5.00***
AR(2)		−0.12		−1.42		−0.62		−0.57		−1.75
Cross-sections included		220		218		225		216		213
Total panel (unbalanced) observations		1166		1076		1182		1068		985

Sample (adjusted): 2017 2023; Periods included: 7; White period (period correlation) instrument weighting matrix; White period (cross-section cluster) standard errors & covariance (d.f.corrected) Standard error and t-statistic probabilities adjusted for clustering; Instrument specification: @DYN(CHGBLEV,-2; Constant added to instrument list; Method: Panel Generalized Method of Moments; Transformation: First Differences; *** significant at 99% level.

Table 9. Impact of EPU, GPR and IBC on leverage dynamics of ZL.

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
	Impact of EPU				*Impact of GPR*				*Impact of IBC*			
BLEV(-1)	0.42	5.38***	2.48	2.42**	0.53	11.49***	0.94	4.09***	0.38	12.56***	0.43	3.26***
LNTA	-0.06	-3.40***	-0.05	-2.92***	-0.06	-5.52***	-0.06	-5.74***	-0.09	-11.37***	-0.09	-10.48***
TANGIBILITY	0.35	2.90***	0.39	3.04***	0.17	2.24**	0.15	2.20***	0.18	4.77***	0.18	4.68***
EBITDAR	-0.69	-5.20***	-0.57	-4.02***	-0.57	-9.92***	-0.56	-9.24***	-0.50	-10.65***	-0.52	-9.17***
NDTS	-1.24	-0.79	-1.83	-1.27	-5.14	-5.66***	-4.93	-5.54***	-4.30	-4.77***	-4.29	-4.64***
TOBINQ	0.00	2.53***	0.01	3.14***	-0.00	-1.77*	-0.00	-1.05	-0.01	-6.62***	-0.01	-5.60***
LNEPU	0.01	0.71	0.28	**2.04****								
LNEPU*BLEV(-1)			-0.44	**-2.03****								
LNGPR					-0.01	**-1.94***	0.04	1.28				
LNGPR*BLEV(-1)							-0.09	**-1.97****				
DIBC									**0.02**	**6.06*****	0.05	0.73
DIBC*BLEV(-1)											-0.05	-0.39
Dependent Variable: BLEV												
Effects Specification: Cross-section fixed (first differences)												
Mean dependent var		-0.00		-0.00		-0.00		-0.00		-0.00		-0.00
S.E. of regression		0.05		0.06		0.06		0.06		0.06		0.06
J-statistic		26.28		24.55		32.23		33.12		27.20		26.42
Prob(J-statistic)		0.39		0.43		0.31		0.23		0.56		0.55
S.D. dependent var		0.05		0.05		0.04		0.04		0.04		0.04
Sum squared resid		0.57		0.61		0.77		0.76		0.68		0.69
Instrument rank		32.00		32.00		36.00		36.00		36.00		36.00
Arellano-Bond Serial Correlation Test												
Test order		m-Statistic		m-Statistic		m-Statistic		m-Statistic		m-Statistic		m-Statistic
AR(1)		-1.93*		-1.81*		-2.78***		-2.89***		-2.51**		-2.47**
AR(2)		-0.97		-0.95		-1.00		-1.16		-1.20		-1.16
Method: Panel Generalized Method of Moments; Transformation: First Differences; Sample (adjusted): 2016 2023												
Periods included:	7.00		7.00		8.00		8.00		8.00		8.00	
Cross-sections included:	43.00		43.00		43.00		43.00		43.00		43.00	
Total panel (unbalanced) observations	196.00		196.00		226.00		226.00		226.00		226.00	

White period (period correlation) instrument weighting matrix; White period (cross-section cluster) standard errors & covariance (d.f. corrected); Standard error and t-statistic probabilities adjusted for clustering. Instrument specification: Constant added to instrument list; *significant at 99% level; **significant at 95% level; ***significant at 90% level.

appears to be insignificant. Perhaps, already maintaining safe debt-level, these firms are not much akin to leverage adjustment. These results corroborate the effectiveness of IBC attempt towards a creditor-in-control regime, rationalized cost of debt, and improved funds supply. Past studies infer the IBC impact on improved credit networks, debt cost, and debt structure. As expected, the rest of the model predictors are significantly associated with the firms' leverage. Where lag BVL, tangibility, and Tobin's Q show positive linkage with firms' debt, the EBITDAR, and firms' size portray negative association, implying the profitable and large-size firms maintain flexibility by lower debt levels.

Table 10 exhibits NZL firms' debt intricacies with EPU, GPR, and IBC. Results corroborate the varied debt dynamics of NZL firms compared to ZL firms. We observe no significant linkage between EPU and GPR in firms' leverage and adjustment behaviour. Similar to the overall sample and ZL firms' findings, NZL shows a significant positive association of DIBC on firms' leverage, authenticating IBC as a favourable initiative towards low debt cost and improved structuring. Other parameters, such as asset size, tangibility, and profitability, evince similar expected behaviour. It is worth noting that Tobin's Q, which appears to be significantly positively connected to BLEV of ZL firms, we observe no significant influence of Tobin's Q for NZL firms. These observations authenticate the ZL firms' sensitivity to market reactions. The ZL firms' debt-structuring and adjustment decisions are driven by market and investor sentiments.

Discussion, managerial implications and conclusions

The present study unfolds the linkage of capital structure dynamics with EPU, GPR, and IBC Act, 2016. Further, we investigated the behaviour of zero-debt firms. Findings authenticate the positive linkage of firms' size, tangibility, Tobin's Q, and non-debt tax shield with leverage. These results confirm the earlier studies that endorse large size and tangibility as signals of credibility, transparency, low agency issues, high liquidity and thus low default possibilities (Camisón, Clemente, and Camisón-Haba 2022; Fitim, Zoriana, and Valeriya 2019). We observe a negative association between firms' profitability and leverage, as corroborated by earlier studies (Eckbo and Kisser 2021; Hoque and Pour 2018). The negative linkage of EBITDR with firms' debt authenticates that firms strategically use debt capacity to restore financial flexibility to compensate the operational snags of low profit and cash deficiency (Fardnia, Kooli, and Kumar 2023; Ferrando, Marchica, and Mura 2017).

Consistent with the earlier studies (Abdullah et al. 2023; Trejo-Pech, Kyaw, and He 2021) We observe the firms' leverage adjustment to be dominated by trade-off theory, with firms more likely to compensate the target leverage void. The study unearths the influence of economic policy uncertainty, geopolitical risk and IBC implementation (2016) on firms' leverage and adjustment speed. Findings evince no significant impact of EPU and GPR on sample firms' leveraging behaviour, however, the data confirm significant plunge in leverage adjustment speed of firms influenced by geopolitical risk, corroborating the enhanced cost of adjustment due to rise in the market uncertainty (Nasraoui, Ajina, and Kahloul 2024; Yaghoubi 2024).

Implementing the IBC in India, strengthening the strictness in debt and stressed asset recovery, is projected to ensure a shift in the leverage dynamics of Indian firms. Results underscore the significant impact of IBC on firms' capital structure and adjustment behaviour. The negative association of DIBC with leverage and the positive association

of interaction term DIBC*BLEV(−1) confirm the enhanced conservatism in firms' leverage and increased adjustment speed post-IBC. These findings indicate the effectiveness of IBC in inculcating disciplined debt management of Indian firms.

To identify the tendency of zero leveraging behaviour of Indian firms, we segregated the firms based on their debt composition. We observe no firm practicing absolute nil leverage. Even a negligible proportion of firms exhibit almost zero leverage (5% leverage). A high number of AZLL firms vis-à-vis AZSL firms exhibit a preference for long-term debt over short-term financing. Literature infers the impact of the institutional environment on firms' choice of short-term debt; weak regulations drive the firms to use more short-term debt *vis-à-vis* long-term debt (Fan, Titman, and Twite 2012). The preference of long-term leverage by Indian corporate authenticates the robust regulations and tax reforms in India. The data portrays a significant reduction in the leveraged firms from 80 to 90 percent till 2018 to 60 to 70 percent post-2019. This decline support volatile investment environment, when following the rise in US interest rates a severe drop was witnessed in the primary bond offerings by the Indian issuers to $47.2 billion, the lowest of the decade, registering a decline by 30% from $67.4 billion marked a year before in 2018 (Thomson Reuters). The decline in the later years, may be the stimulus of IBC and, COVID-19 disturbance.

Further, the ZL and NZL firms unveiled significant variations in their behaviour, with ZL firms' portraying speedy adjustment to narrow-down the void in the target leverage and the previous year's deficit in actual and target debt levels. The nearly equal coefficient of TLD (.23) and FCFF (−.24) supports the dominance of the pecking order and tradeoff theory. These firms prefer speedy adjustment to the targeted level; however, any cashflow deficiency prompts them to debt issues rather than equity. These results substantiate that ZL firms are more risk-averse, market-sensitive, and prefer the flexibility to maximize valuation. ZL firms also demonstrated a significant influence of EPU and GPR on leverage and adjustment speed. Positive predictor association of EPU and negative association of interaction term EPU*BVL(−1) on ZL firms' BLEV authenticate firm' conservative approach. These firms maintain high leverage, sensitizing the economic policy-induced shocks. However, their speed of adjustment slows down due to the rise in cost under economic uncertainties. Similarly, the negative coefficient of GPR (0.04) and interaction term LnGPR*BLEV(−1) (−.09) indicate that firms' debt level and adjustment speed reduce with geopolitical risk sensitivity. We also observe a highly significant positive association of DIBC with BVL, hinting at increased debt level post-IBC influence. However, the impact of IBC on adjustment speed appears to be insignificant. Obviously, with a secured debt-level, these firms are not much akin to leverage adjustment. The results substantiate the effectiveness of the IBC attempt towards a creditor-in-control regime, rationalized cost of debt, and improved funds supply. Past studies infer the IBC's impact on improved credit networks, debt cost, and debt structure.

Alike sample firms NZL firms evince the dominance of trade-off theory. Similar to sample firms and ZL firms, NZL firms also reflected affirmative association with DIBC, lending credence to IBC as a favourable initiative towards low debt cost and improved structuring. Nevertheless, the NZL firms' debt dynamics appear indifferent to EPU and GPR impact.

Findings demonstrate debt financing to be a significant corporate decision. Overall, findings evince the conservative behaviour of Indian firms towards exogenous factors and

Table 10. Leverage dynamics of zero leverage firms.

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
BLEV(−1)	0.24	5.66***	−0.06	−0.13	0.34	4.37***	0.66	1.43	0.41	8.59***	0.44	4.81***
LNTA	−0.05	−2.31**	−0.05	−2.44**	−0.04	−1.66*	−0.04	−1.80*	−0.07	−3.24***	−0.07	−2.99***
TANGIBILITY	0.48	2.05**	0.47	2.05**	0.67	2.30**	0.62	2.13**	0.65	4.28***	0.67	4.87***
EBITDAR	−0.03	−0.13	−0.01	−0.07	0.26	0.97	0.27	0.98	−0.94	−5.13***	−0.96	−5.37***
NDTS	−3.06	−2.44**	−3.08	−2.52**	−4.45	−2.77***	−4.27	−2.66***	−7.92	−5.71***	−8.07	−4.60***
TOBINQ	0.00	0.65	0.00	1.04	0.00	0.15	0.00	0.24	−0.00	−0.51	−0.00	−0.77
LNEPU	0.00	0.04	−0.03	−0.54								
LNEPU*BLEV(−1)			0.07	0.63								
LNGPR					0.01	0.58	0.03	0.83				
LNGPR*BLEV(−1)							−0.07	−0.71				
DIBC									0.02	2.71***	0.05	0.93
DIBC*BLEV(−1)											−0.05	−0.49
Dependent Variable: BLEV												
Mean dependent var		−0.01		−0.01		−0.01		−0.01		−0.01		−0.01
S.E. of regression		0.07		0.07		0.07		0.07		0.08		0.08
J-statistic		20.08		20.18		25.68		24.72		26.57		25.22
Prob(J-statistic)		0.74		0.69		0.64		0.64		0.59		0.62
S.D. dependent var		0.06		0.06		0.05		0.05		0.05		0.05
Sum squared resid		4.70		4.74		5.94		5.83		1.74		1.78
Instrument rank		32.00		32.00		36.00		36.00		36.00		36.00
Arellano-Bond Serial Correlation Test												
Test order		m-Statistic		m-Statistic		m-Statistic		m-Statistic		m-Statistic		m-Statistic
AR(1)		−4.40***		−4.37***		−4.68		−4.54		−3.05		−3.18
AR(2)		−2.29**		−2.29**		−1.32		−1.33		−0.52		−0.53
Included observations: 951		951.00		951.00		1,095.00		1,095.00		288.00		288.00
Sample (adjusted): 2016 2023												
Periods included: 7		7.00		7.00		8.00		8.00		8.00		8.00
Cross-sections included: 189		189.00		189.00		190.00		190.00		51.00		51.00

White period (period correlation) instrument weighting matrix; White period (cross-section cluster) standard errors & covariance (d.f corrected); Standard error and t-statistic probabilities adjusted for clustering; Instrument specification: @DYN(BLEV,-2); Constant added to instrument list; Method: Panel Generalized Method of Moments; Transformation: First Differences; *significance at 90% level; **significance at 95% level; ***significance at 99% level.

regulatory changes. Firms' trade-off behaviour authenticates that Indian firms are cost and risk-averse and strive to attain the optimal point to maximize the firm's value. Firms are highly sensitive and adaptive to changed circumstances affecting the risk and cost dynamics.

Unfolding the leverage intricacies of ZL and NZL firms and the impact of significant macroeconomic factors- economic policy uncertainties, geopolitical risk, and IBC, the study presents valuable insight for corporate decision-makers and policy-makers.

Implications for the decision-makers

The study uncovers the debt dynamics of firms with varied compositions and the likelihood of crucial macroeconomic changes, policy uncertainties, global factors, and regulations on firms' debt and adjustment behaviour. The findings are insightful for financial managers seeking an optimum debt mix amid exogenous changes and policy uncertainties. Unearthing the traits of zero-levered and non-zero-levered and debt adjustment behaviour, the research is likely to aid managers aspiring for debt restructuring and restoring financial flexibility.

Implications for policy-makers

The GPR, EPU, and IBC are crucial events stimulating the funds' demand and supply shocks, thereby impacting the capital market's cost and risk dynamics. The significant impact of IBC on firms' leverage and adjustment speed confirms the effectiveness of IBC towards stressed assets management. The less significant impact of EPU and GPR on firms' leverage, prima facie, authenticates the firm's confidence in the Indian financial system's robustness to exogenous shocks. Productive reforms establishing the best corporate practices may ensure economic stability, transparency, and best corporate governance practices in the investors' and the economy's interest.

With the MSME 45-day payment rule (effective from FY 2024) to foster the debt settlement of small MSME vendors, substantial restructuring in debt, short-term debt composition, debt adjustment, and payment policies of Indian corporate firms is witnessed, warranting stringent policy reforms advocating better liquidity and debt management practices.

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