



DETERMINANTS OF OPTIMAL CAPITAL STRUCTURE AND SPEED OF ADJUSTMENT: EMPIRICAL EVIDENCE FROM NSE LISTED MANUFACTURING COMPANIES IN INDIA

Mrs. S. NITHYADEVI

Ph.D Scholar, PG and Research Department of Commerce,
Kaamadhenu Arts and Science, Sathyamangalam, Erode – DT.

Dr. A. SENGOTTAIYAN

Associate Professor and Head, PG and Research Department of Commerce,
Kaamadhenu Arts and Science, Sathyamangalam, Erode – DT.

Introduction

The combining of equity and debt funding by a corporation to finance its assets, overall operation, and expansion is referred to as capital structure. There are no uniform guidelines for the optimal debt-equity mix that have been carefully addressed in the academic literature to the suitable capital structure mix. Previous research on ownership and capital structure, including as agency theory, pecking order theory, and trade-off theory, identified these concerns. The trade-off theory explains the hypothesis of capital structure, which is the possibility that an organisation will choose how much debt fund and how much equity fund to utilise by adjusting the costs and benefits. The funding comes from three sources: reserves or retained earnings, long-term borrowing, and new equity. The strong foundation was developed by the Modigliani and Miller, due to which numerous theoretical frameworks were developed and these frameworks give boost to future theoretical research about capital structure. The profit maximization activism is concerned about responsible decisions in all things. In this way, managers or directors may decide firm's capital structure to seek after their own particular advantages rather than those of investors or debt holders.

Capital structure theories have different predictions regarding whether and how quickly firms converge to a target leverage. The pecking order, market timing, and inertia theories argue that there is no target capital structure and predict a speed of adjustment close to zero. The trade-off theory states that firms almost immediately reverse deviations from their target leverage, predicting a speed of adjustment close to one. Dynamic trade-off theory, on the other hand, considers market imperfections

that cause delays in capital structure adjustments and predicts a speed of adjustment between zero and one. A higher estimated speed of adjustment supports more timely convergence to a target leverage. We add to this literature by exploiting machine learning prediction accuracy to reestimate the speed of adjustment. The new estimates allow us to better understand which theory of capital structure is supported by data.

Literature Review

The review of literature guides the researchers for getting a better understanding of the methodology used, limitations of various available estimation procedures and database and lucid interpretation and reconciliation of the conflicting results. Besides this, the review of empirical studies explores the avenues for the future and presents research efforts related to the subject matter. In the case of conflicting and unexpected results, the researcher can take advantage of the knowledge of other researchers simply through the medium of their published works.

Review Relating to Speed Adjusted Performance

The anti-corruption campaign's influence on capital structure decisions for Chinese listed companies is examined by **Wu & Liu (2022)** utilising investigations of senior officials from 2007 to 2019. The study's findings, which are in line with the knowledge that a purified political ecology aids in reducing financial resistances in the capital market, show that an anti-corruption effort has a favourable impact on the firm's speed of leverage adjustment. (Wu & Liu, 2022). **Serrasqueiro, Matias, & Diéguez-Soto, (2022)** analyzed the family firm's capital structure decisions, focusing on the speed of adjustment (SOA) with the effect of distance from the target capital structure. As a result, family businesses avoid the target debt ratios for a longer period of time than do non-family businesses (Serrasqueiro, Matias, & Diéguez-Soto, 2022). **Zeitun & Goaid, (2021)** examined the nonlinear link between foreign ownership and corporate leverage choices by using a panel dynamic model on a sample consisting of 1027 Japanese companies. The empirical results are consistent with the hypothesis that foreign ownership has an effect on company capital structure and its determinants. The research findings has revealed that management consequences for foreign investors with high levels of ownership, advising them to focus on using liquidity, profitability, and growth to reduce leverage (Zeitun & Goaid, 2021). Using the dimensions of the dynamic trade-off theory, **Hussain, Ali, Hassan, and El-Khatib (2020)** investigate the impact of equity mispricing of Malaysian enterprises from the years 1998 to 2016. The rate of adjustment is slower for businesses below target levels and when stock is underpriced than for non-compliant enterprises. The findings imply that managers have a propensity to time the stock market when it is above goal levels in order to benefit from lower equity costs when equity is overvalued. (Hussain, Ali, Hassan, & El-Khatib, 2020).

Rani, Yadav, & Tripathy, (2020) examined the capital structure determinants and speed of adjustment (SOA) toward the target capital structure of firms. The study has used the generalized method of moments (GMM) model. The empirical results provide evidence, which supports trade-off theory, agency theory and pecking order of capital structure. The study concluded that variability in SOA could be the macroeconomic ambiance, tax systems, corporate governance practices and institutional differences on decisions related to adjustments in the capital structure. (Rani, Yadav, & Tripathy, 2020) **Ghose & Kabra, (2019)** examined the influence of adverse selection costs on target adjustment. The study suggested that adverse selection costs play significant role in the adjustment process. Therefore, though capital structure decisions of Indian firms are guided by trade-off theory, significance of pecking order arguments cannot be negated on adjustment speed on India firms. (Ghose & Kabra, 2019). **Alnori & Alqahtani, (2019)** investigated the effect of firms' capital structure decisions and speed of adjustment in non-financial firms in the Saudi Arabian market from 2005 to 2016. The study concluded that the lower leverage and slower leverage adjustment speed of the former firms creating a finance supply gap for these firms and higher adjustment costs. (Alnori & Alqahtani, 2019)

Ghose & Kabra, (2018) examined the asymmetries in capital structure adjustment speed depending on firms' affiliation to business groups. These findings helpful for financial managers in designing their capital structure based on ownership structure, and the nature and extent of deviation from the target leverage. (Ghose & Kabra, 2018). **Buvanendra, Sridharan, & Thiyagarajan, (2017)** This explored the most important determinants of speed of adjustment (SOA) towards optimum / target capital structure of listed firms in Sri Lanka and India for the period 2004 to 2013. This result validates the earlier findings that the firms in Sri Lanka use internal financing during the process of rebalancing and thus adjust faster or in other words, firms with higher profitability have lower target debt equity ratios. (Buvanendra, Sridharan, & Thiyagarajan, 2017). **Ghose, (2017)** explored firms' capital structure dynamics and ownership structure are two extensively studied subjects of research in corporate finance in recent years. The results show that Indian manufacturing firms close about 30 percent of their leverage gap every year. The relationship between target capital structure and its determinants remains the same irrespective of firms' affiliation status to business groups. (Ghose, 2017)

Sardo & Serrasqueiro, (2017) analysed the capital structure decisions of small- and medium-sized Portuguese firms are in accordance with the predictions of dynamic trade-off theory, more precisely, the speed of adjustment of short-term debt (STD) and long-term debt (LTD) towards the respective target debt ratios. Small- and medium-sized firms present a high-speed adjustment towards the target STD ratio suggesting that both types of firm face costs of deviating from the target capital structure, which are, probably, greater than the costs of adjustment associated with STD. (Sardo & Serrasqueiro, 2017) According to **Loof (2004)**, the significance of capital structure is investigated by contrasting current financial system prototypes using a novel methodological application. Differential

costs of capital for businesses demonstrate the importance of capital structure in R&D and other investment choices. The findings show that the factors that determine the optimal capital structure vary significantly and unexpectedly between countries; observed leverage is frequently different from goal in both equity and debt. The study found that equity-based systems move more quickly toward their goals, demonstrating more flexibility. (Löf, 2004)

Nivorozhkin, (2004) analysed a dynamic unrestricted capital structure model to examine the determinants of the private companies' target financial leverage and the speed of adjustment to it in two transition economies, the Czech Republic and Bulgaria. The speed of adjustment related positively to the distance between target and observed ratio for Bulgarian companies while the relationship was neutral for Czech companies. The conservative policies of Czech banks and the exposure control were likely responsible for the slower adjustment among the larger companies. (Nivorozhkin, 2004)

Gatward & Sharpe, (1996) examined the dynamics of financial structure decisions through the specification and estimation of a dynamic model of capital structure choice. Using a multivariate adjustment model and pooled annual time series/cross-sectional data for 164 publicly listed Australian firms over the 1967-1985 period. The model also sheds light on the long-run determinants of capital structure of Australian firms, including their debt maturity choice. (Gatward & Sharpe, 1996)

Need for the study

The strong foundation was developed by the Modigliani and Miller, due to which numerous theoretical frameworks were developed and these frameworks give boost to future theoretical research about capital structure. Examined that the capital structure is basically a marketing issue; they mention that companies issue large number of different securities and these are in various combinations. All these firms try to create such good combinations that maximize the value of market. Grossman and Hart reported that higher Level of leverage decreases agency costs and increases corporate worth by motivating managers to give more preference to the benefits of equity shareholders. This is also known as the agency costs hypothesis. Hadlock and James reported that corporate firms who want to maximize their profitability used more and more capital in the form of debts. The study reported in their results that a significant positively association exists between capital structure choice and its market value. Also suggest that firms should manage and plan their leverage (capital structure) in such a manner that it maximizes their firm's market value.

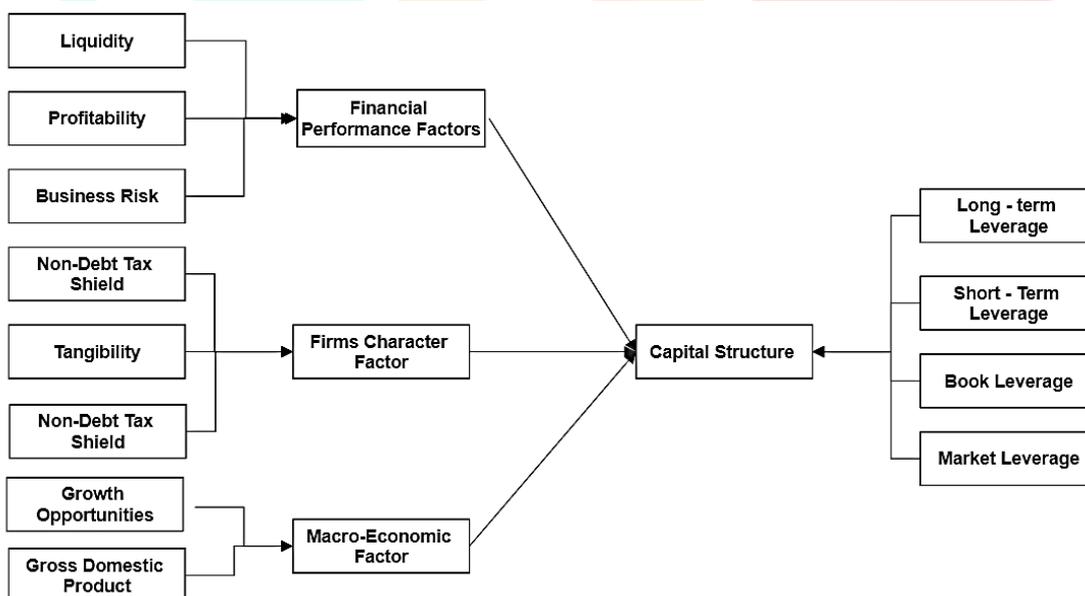
Statement of Problem

The literature's attempt to experimentally differentiate between trade-off and other competing theories utilising a dynamic trade-off theory framework and partial adjustment models has turned out to be fairly promising. The findings almost always support the thesis that there is a significant dynamic component in a business's capital structure decisions, and that the dynamism is affected by firm,

industry, macroeconomic, and institutional factors. This study seeks to fill that gap by studying whether enterprises in developing nations modify their capital structures to specified target levels and, if so, how company, industry, macroeconomic, and institutional factors influence the speed of adjustment. The balance of capital structure mix result into reduced cost of financing the operation and hence finance manager design the targeted capital structure to minimize overall cost of capital and enhance value of the company. The target capital structure does not remain static but it is dynamic in nature, target capital structure varies with firm specific and macroeconomic variables and in such scenarios adjustment in capital structure is like walking on tight rope for finance manager. If capital structure adjustments are dynamic in nature then how BSE listed Indian manufacturing companies adjust actual capital structure with respect to changes in optimum capital structure and for the same engineering goods companies are selected for the analysis.

Research Model

The two-stage dynamic panel adjustment model results in abnormally smaller estimates of adjustment speed than theory would predict. Further, to examine the determinants of capital structure (Panel data regression) jointly determine the adjustment speed.



The capital structure studies examined the various aspects of financing decisions and contradictory testimony about financing behaviour exist in the literature. The lack of consensus about capital structure theory with connections to the determinants of target speed adjustment with respect to optimum capital structure are very limited available in Indian context.

Objectives of the study

1. To study the firm's specific characteristics that influence the dynamics of capital structure decisions in Indian context.
2. To examine the effect of macroeconomic and firms characteristics on the dynamic speed adjustment of capital structure in NSE listed firms in India.

Methodology

Research Type: Quantitative and Analytical in nature

Universe of the study: Companies that are listed on the National Stock Exchange are limited (NSE). The National Stock Exchange of India Limited, headquartered in Mumbai, is India's leading stock exchange.

Sampling frame: The NSE NIFTY 50 index, which is the National Stock Exchange of India's benchmark broad-based stock market index for the Indian equity market, is used as the study's sample frame.

Sample Size: A total of 39 listed companies were chosen using a random sample procedure. Banking and financial companies were restricted and omitted from the study because their obligations and control over the firms differed significantly from those of other corporate entities.

Period of the study: From 2012-2012 TO 2020-2021 (10 Years)

GMM Model Framework

The respective financial variables are extracted from annual reports of the firms using accounting ratios. The data has been panel in nature using dynamic regression analysis using with comparison of Pooled OLS, fixed-effects, random effects and GMM methods. The DPD (Dynamic Panel Data) approach is usually considered the work of Arellano and Bond (AB) (Rev. Ec. Stud., 1991), but they in fact popularized the work of Holtz-Eakin, Newey and Rosen (Econometrica, 1988). It is based on the notion that the instrumental variables approach noted above does not exploit all of the information available in the sample. By doing so in a Generalized Method of Moments (GMM) context, we may construct more efficient estimates of the dynamic panel data mode. Consider the equations is

$$y_{it} = X_{it}\beta_1 + W_{it}\beta_2 + u_i + \varepsilon_{it}$$

where X_{it} includes strictly exogenous regressors, W_{it} are predetermined regressors (which may include lags of y) and endogenous regressors, all of which may be correlated with u_i , the unobserved individual effect. First differencing the equation removes the u_i and its associated omitted-variable bias.

Hypothesis Development of Speed of Adjustment

Determinants of the speed of adjustment was taken three variables such as distance between observed leverage and target leverage, size of the company and growth opportunity, GDP which may have the impact on the speeds of adjustment towards the target capital structure. The expected relationship between adjustment speed and these three variables is explained below. The speed of adjustment towards the target capital structure level critically depends on how far away a firm's capital structure is from the target level. Therefore, we define a variable denoted as DIST which is the absolute difference between target leverage and observed leverage. This variable is defined as L_{ij} is the fitted value from the respective fixed effect regression (SLev, LLev, BLev, MLev) of the debt ratio of firm i on the capital structure determinants as of time t . The speed of adjustment is expected to be more rapid, the farther away the firm's capital structure is from its target level. Therefore, The study would predict a positive relationship between DIST and the adjustment speed. In this regard another argument is that if the major portion of the adjustment costs are fixed costs and fixed costs are very high then the firms may be reluctant to change the leverage more rapidly, so that a negative relationship can be hypothesized between DIST and the adjustment speed. Sorting out between the two arguments is an empirical matter.

For larger firms the adjustment costs are relatively small to change the capital structure ratio and thereby they are more readily able to adjust to the target capital structure. Larger firms also do have better access to publicly available information thereby implying that they have Target better access to debt and equity. Hence a positive relationship is expected between size and the speed of adjustment. A growing firm do find it easier to avail several alternative sources of financing and this makes them easier to make change in its capital structure. A low growth firm have lesser opportunities to avail in order to raise funds from the market and swap debt against equity to change its capital structure. Therefore, a positive relationship is expected between growth and adjustment speed. A moderate positive relationship is expected between GDP and speed of adjustment to enhance the manufacturing companies contributed their shares towards economic development.

Table 1. Framework Hypothesis of the study – Panel Data Regression

Sl. No	Variables	Calculations	Hypothesis
1	Profitability	$\frac{EBIT}{Total\ Assets}$	There is a negative relationship between profitability and capital structure
2	Firm Size	$\ln(Total\ Assets)$	There is a positive relationship between firm size and capital structure
3	Tangibility	$\frac{Fixed\ Assets}{Total\ Assets}$	There is a positive relationship between tangibility and capital structure
4	Growth	$\ln(Sales\ Turnover)$	There is a positive relationship between growth opportunities and capital structure
5	Risk	<i>Standard Deviation (EBIT)</i>	Business risk inverse association with leverage
6	NDTS	$\frac{Depreciation}{Total\ Assets}$	There is a negative relationship between non-debt tax shield and capital structure
7	Liquidity	$\frac{Current\ Assets}{Current\ Liabilities}$	There is a inverse relationship between liquidity and capital structure
8	GDP	Log value of Sector GDP Contribution	There is a positive relationship between GDP and Capital Structure (Leverage)

Descriptive and Diagnostics Analysis

Table 2 provides the descriptive statistics for explanatory variables used in the target estimation model separately for the sample firms. Table 3 presents the descriptive statistics of variables used in the determinants of capital structure 39 non-financial firms in NSE listed firms in India during the study period from 2010-2011 to 2019-20. The analysis shows that the capital structure determinates predicted through the mean value of profitability (Return on Assets) is 0.122 times, median of 0.072 times which is ranged from -13.068 to 7.056 with the standard deviation of 1.020. The analysis shows that the capital structure determinates predicted through the mean value of profitability (Return on Equity) is 0.189 times,

Table 2: Descriptive Statistics – GMM 2 Step Model

Variable	Mean	Median	Min	Maxi	Std. Dev.	C.V.	Skewness	Ex. kurtosis	5% Perc.	95% Perc.	IQ range
Return on Assets	0.122	0.072	-13.068	7.256	1.020	8.383	-5.545	92.976	-0.076	0.685	0.161
Return on Equity	0.186	0.137	-21.049	6.800	1.261	6.766	-11.701	205.620	0.013	0.796	0.219
Tangibility	0.432	0.284	0.022	3.258	0.454	1.053	2.971	12.152	0.061	1.275	0.397
Liquidity	1.691	0.742	0.018	16.119	2.481	1.468	2.693	7.950	0.066	7.501	1.431
Firm Size	4.642	4.356	2.536	8.916	1.156	0.249	0.838	0.530	3.168	6.682	1.555
Growth	0.045	0.026	0.001	0.977	0.071	1.570	7.468	80.503	0.006	0.133	0.033
NDTS	4.579	4.381	2.204	7.383	0.999	0.218	0.570	-0.141	3.198	6.419	1.263
Business Risk	0.129	0.020	0.001	13.223	0.816	6.320	13.561	196.900	0.001	0.373	0.055
GDP	6.078	6.458	4.398	7.926	0.159	2.618	0.896	72.384	0.797	6.689	0.454
LT DEBT RATIO	2.574	2.150	0.000	140.560	12.170	4.727	7.937	70.926	0.000	11.341	0.505
ST DEBT RATIO	0.381	0.322	0.000	3.384	0.278	0.730	4.084	35.819	0.089	0.765	0.303
Book Leverage	2.384	0.144	0.000	104.280	10.233	4.293	7.378	62.757	0.000	11.546	0.507
Market Leverage	0.612	0.483	0.000	3.203	0.462	0.755	2.101	6.400	0.133	1.474	0.452

Note: Computed. IQ Range – Inter-Quartile Range

median of 0.137 times which is ranged from -13.068 to 6.800 with the standard deviation of 1.261.

The mean and median value of Tangibility is 0.432 and 0.284 times respectively, it's ranging from 0.022 to 3.252 with a standard deviation of 0.454. The liquidity which explains the mean value is 1.691 times, the median of 0.742 times, the minimum is 0.018, and the maximum of 16.119 with the standard deviation is 2.481. The mean and median value of Firm size is 4.642 and 4.356 respectively, its ranges from 2.536 to 8.916 with a standard deviation of 1.156.

The mean and median values of growth of the firm are 0.045 times and 0.026 times respectively, its ranges from 0.001 times and 0.977 times with a standard deviation of 0.071 times. The mean and median value of NDTs is 4.579 times and 4.381 times respectively, its ranges from 2.204 times to 7.38 times with a standard deviation of 0.999 times. The mean and median value of the Business risk is 0.129 times and 0.020 times respectively, its ranges from 0.001 times to 13.233 times with a standard deviation of 0.816 times. Finally, the mean and median value of the Gross Domestic Product (GDP) is 6.078 times and 6.458 times respectively, its ranges from 4.398 times to 7.926 times with a standard deviation of 0.159 times.

The long-term debt ratios mean and median values are 2.574 times and 2.150 times respectively, its ranges from 0.000 times and 140.560 times with a standard deviation of 12.170 times. The short-term debt ratios mean and median values are 0.381 times and 0.322 times respectively, its ranges from 0.0001 times and 3.384 times with a standard deviation of 0.278 times. The book leverage ratios mean and median values are 2.384 times and 0.144 times respectively, its ranges from 0.000 times and 104.208 times with a standard deviation of 4.293 times. Finally, the market leverage ratios mean and median values are 0.612 times and 0.483 times respectively, its ranges from 0.000 times and 3.203 times with a standard deviation of 0.462 times.

Table 3: Relationship between Speed of Adjustment of Dependent Variable and Distance Variable (GMM Model)

Dependent variable	Long-Term Debt Ratio		Short-term Debt Ratio		Book Leverage		Market Leverage	
	Coefficient	Z (p-value)	Coefficient	Z (p-value)	Coefficient	Z (p-value)	Coefficient	Z (p-value)
L _{ij}	35.0821	10.013*** (0.0003)	32.3992	-2.716*** (0.0066)	30.0517	3.007*** (0.0026)	31.1477	2.424** (0.0154)
L _{ij} (-1)*DIST	-7.278	-2.5912*** (0.0071)	10.4997	2.759*** (0.0070)	-3.422	-20.720*** (<0.0001)	-2.637	-2.637*** (0.0084)
L _{ij} (-1)*FSIZE	-50.929	-5.423*** (0.0022)	-0.1229	-3.823*** (0.0001)	-0.6899	-2.460** (0.0139)	0.0471	1.671* (0.0947)
L _{ij} (-1)*GROWTH	-3.0302	-8.448** (0.0356)	-10.782	-0.2481 (0.6536)	-0.0302	-1.931* (0.0535)	1.122	-1.448 (0.6306)
L _{ij} (-1)*GDP	1.3557	0.348 (0.1466)	7.0302	-0.581*** (0.0000)	-0.0862	-3.422*** (0.0006)	-0.0302	-0.448 (0.6536)
Sargan over-identification test: Chi-square (367)		772.693 [0.0000]	694.105 [0.0000]		797.523 [0.0000]		913.361 [0.0000]	
Wald (joint) test: Chi-square(4)		299.001 [0.0000]	681.79 [0.0000]		110.429 [0.0000]		731.993 [0.0000]	
Test for AR(1) errors: z		-2.0778 [0.0000]	-3.8659 [0.0000]		-2.2845 [0.0000]		-2.8660 [0.0000]	
Test for AR(2) errors: z		-0.6073 [0.5437]	-0.1920 [0.9267]		1.6553 [0.0998]		-0.7450 [0.8224]	
Notes: p value in parentheses. *, **, and *** indicate significance at the 10, 5, and 1 percent, respectively. The standard errors of the L _{ij} estimates are obtained from a bootstrap variance-covariance matrix.								

The coefficient of the lagged dependent variable is statistically significant in the capital structure (Lij). It establishes that the firms revert to their target capital structures over time as theorized by the dynamic trade-off model. It documents the speed adjustment of the respective variables is estimated at $(1 < 1)$ which reveals that firms converge at a pace of 35 percent (per annum) towards their target leverage (Lij). Robustness results using long-term debt ratio as a capital structure measure, to control for speed adjustment, firm-level heterogeneity, and to control differences in the NSE listed firms in India. To test the validity of these methods, report the Sargan test and AR2 test. Overall, the results of the partial adjustment model are satisfactory. Sargan test [Significant] and AR2 [Not Significant] test further validates the findings by suggesting no evidence of second-order correlation and appropriateness of the instruments used which support the main findings that the speed adjustment estimate of the firms.

It could be observed from table, the coefficient of the interaction term of lagged [Lij (-1)] value and the determinants of adjustment speed has been found positive association with leverage the result is proved statistically ($z = 10.013$, $p\text{-value} = 0.0003$) significant at 0.01 level. There is evidence of a statistically strong and negative relationship ($z = -2.5912$, $p\text{-value} < 0.001$) between the speed of adjustment and the distance variable [Lij (-1)*DIST], and the result is confirmed statistically significant at 0.01 level. The study found that an inverse relationship between firm size and the adjustment speed [Lij (-1)*FSIZE] and the result is significant [$z = -5.423$, $p\text{-value} = 0.0022$] at 0.01 level. The study found that an inverse relationship between growth opportunities and the adjustment speed [Lij (-1)*GROWTH] but the result is significant [$z = -8.448$, $p\text{-value} = 0.0356$]. The study found that positive relationship between GDP and the adjustment speed [Lij (-1)*GDP] but the result is not significant [$z = 0.348$, $p\text{-value} = 0.1466$].

Implications of the study

The study has been found that a significant association between leverage changes and change in total assets among sample sector. However, there is a difference in the association between asset growth and leverage changes among throughout the sample period. For the link between leverage growth and asset growth is stronger because they can use flexible funding sources to quickly adjust leverage. The results show that the adjustment speed of target leverage, implying Indian corporate may face higher external financing costs and adjustment costs when they need to raise funds. Profitability has positive and significant influence towards capital structure SOA; it shows that increasing profitability enables companies to adjust leverage more quickly and easily; Company size has positive and significant influence towards capital structure SOA; in other words, larger companies have faster capital structure SOA; Distance between actual leverage and target leverage has negative, significant influence towards capital structure SOA; it means companies of which capital structure deviates quite far from its target have high ties with a lot of assets can generate

cash more quickly and, as a result, have faster capital structure SOA; GDP growth has positive, significant influence towards capital structure SOA; it means positive economic environment characterized by an increase in GDP allows companies to adjust their capital structure more quickly;

Conclusion and Scope for future Research Direction

The study has practical approach of the emerging regression model using with dynamic panel data analysis of the determinants of capital structure of NSE listed firms in India. The study has confined the sample of 39 non-financial firms selected for the purposive sampling techniques. The respective financial variables were extracted from the annual reports of the respective firms during the period of 2011-2020. The study has found that profitability is inversely influenced with the capital structure decision of Indian firms and the result found to be highly significant in all the regression model. The result implies that the profitable firms has structure the capital structure in high debt content securities, further, the shareholders are expecting more return on their securities, failed to this situations, investor has diluted their holding to other profitable firms. This effects supports the market timing theory and consistently supports eminent researchers in the Indian context. Further the study has significantly determined the capital structure on the firm size and growth opportunities, that regression result is significant for all the four model. The large firms and high growth firms decision regarding leverage is highly influence the market alteration for the investment content of the debt-equity position of the firms.

Future research can be undertaken by including certain macroeconomic factors such as GDP, inflation and the interest rate, which also affect the SOA since firms are pretentious by market conditions while designing capital structure for firms. In the current financial and regulatory set-up when there are frequent perturbations in the capital market, the study will be valuable for regulators, firms and academicians. The work would enable the concerned stakeholders to manage their scare resources and capital effectively by a better way to make informed decisions. It will facilitate managers of young companies to identify and regulate the factors that are more pertinent for them to make flexible financial decisions concerning the capital structure. The study amplifies on previous studies and provides new insights on the speed of the adjustment process of Indian firms, helping to modify and refine their capital structures toward the optimum capital structure. This will not only enhance the financial flexibility in the capital structure of Indian corporates but also be of great value to the policymakers and other stakeholders.

References

- Adhegaonkar, V., & E.B, K. (2021). Dynamic Optimum Capital Structure Adjustment Model of BSE Listed Indian Manufacturing – A Case Study of Engineering Goods Industry Sambodhi. *Sambodhi*, 44(1(III)), 35–37.
- Al-Najjar, B. (2011). Empirical modelling of capital structure: Jordanian evidence. *Journal of*

Emerging Market Finance, 10(1), 1–19. <https://doi.org/10.1177/097265271101000101>

- Arene, C. J., & Ndomadu, S. O. (1997). Impact of Value-Added Tax on the Capital Structure and Profitability of Premier Breweries Plc, Nigeria. *Vikalpa*, 22(3), 71–77. <https://doi.org/10.1177/0256090919970307>
- Brisker, E. R., & Wang, W. (2017). CEO's Inside Debt and Dynamics of Capital Structure. *Financial Management*, 46(3), 655–685. <https://doi.org/10.1111/fima.12169>
- Buvanendra, S., Sridharan, P., & Thiyagarajan, S. (2017). Firm characteristics, corporate governance and capital structure adjustments: A comparative study of listed firms in Sri Lanka and India. *IIMB Management Review*, 29(4), 245–258. <https://doi.org/10.1016/j.iimb.2017.10.002>
- Chadha, S., & Sharma, A. K. (2016). An Empirical Study on Capital Structure in Indian Manufacturing Sector. *Global Business Review*, 17(2), 411–424. <https://doi.org/10.1177/0972150915619817>
- Chaklader, B., & Chawla, D. (2016). A Study of Determinants of Capital Structure through Panel Data Analysis of Firms Listed in NSE CNX 500. *Vision*, 20(4),
- Ghose, B. (2017). Impact of Business Group Affiliation on Capital Structure Adjustment Speed: Evidence from Indian Manufacturing Sector. *Emerging Economy Studies*, 3(1), 54–67. <https://doi.org/10.1177/2394901517696605>
- Ghose, B., & Kabra, K. C. (2018). Dynamic Capital Structure Adjustments and Business Group Affiliations: Indian Evidence. *Business Perspectives and Research*, 6(1), 1–15. <https://doi.org/10.1177/2278533717722656>
- Ghose, B., & Kabra, K. C. (2019). Capital Structure Dynamics and Financing Imbalance: Evidence from an Emerging Economy. *Emerging Economy Studies*, 5(2), 103–124. <https://doi.org/10.1177/2394901519870766>
- Hanithavijeyaratnam, & Anandasayanan, S. (2015). The Determinants of Leverage of Sri Lankan Manufacturing Companies Listed on Colombo Stock Exchange. *International Journal of Research in Business Studies and Management*, 2(2), 30–37.
- Joshi, H. (2010). Capital Structure and Product Market Determinants: Empirical Evidence from the Indian Automobile Industry. *Asia-Pacific Business Review*, VI(2), 41–49.
- Lartey, T., Danso, A., & Boateng, A. (2021). Co-opted boards and capital structure dynamics. *International Review of Financial Analysis*, 77(May), 101824. <https://doi.org/10.1016/j.irfa.2021.101824>
- Maroney, N., Wang, W., & Kabir Hassan, M. (2019). Incorporating active adjustment into a financing based model of capital structure. *Journal of International Money and Finance*, 90, 204–221. <https://doi.org/10.1016/j.jimonfin.2018.09.011>
- Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review*, 28(3), 103. <https://doi.org/10.2307/2220605>
- Narayan, P. K., Phan, D. H. B., Liu, G., & Ibrahim, M. (2021). Ethical investing and capital structure. *Emerging Markets Review*, 47, 100774. <https://doi.org/10.1016/j.ememar.2020.100774>
- Panda, B., Mohapatra, S. P., & Moharana, S. (2013). Capital Structure of Indian Steel Companies: Its Determinants. *3rd Biennial Conference of the Indian Academy of Management (IAM)*, (I), 1–22. Ahmadabad.
- Qureshi, T. A. M. W. M. A. (2016). How do they adjust their capital structure along their life cycle? An empirical study about capital structure life cycle of Pakistani firms. *Journal of Asia Business Studies*, 10(3), 1–35.

- Rani, N., Yadav, S. S., & Tripathy, N. (2020). Capital structure dynamics of Indian corporates. *Journal of Advances in Management Research*, 17(2), 212–225. <https://doi.org/10.1108/JAMR-12-2017-0125>
- Singh, N. P., & Bagga, M. (2019). The Effect of Capital Structure on Profitability: An Empirical Panel Data Study. *Jindal Journal of Business Research*, 8(1), 65–77. <https://doi.org/10.1177/2278682118823312>
- Sulagna Mukherjee, & Mahakud, J. (2010). Dynamic adjustment towards target capital structure : evidence from Indian companies. *Journal of Advances in Management Research*, 7(2), 250–266. <https://doi.org/10.1108/09727981011085020>
- Vallelado, E., & Saona, P. (2010). An integrated model of capital structure to study the differences in the speed of adjustment to target corporate debt maturity among developed countries. *5th International Finance Conference*, 4(1), 88–100.
- Yukti, B., Smita, K., & Shveta, S. (2020). Capital structure dynamics: China and India (Chindia) perspective. *European Business Review*, ahead-of-p(ahead-of-print). <https://doi.org/10.1108/EBR-09-2019-0203>
- Zhu, Y. (2012). Capital structure: The case of firms issuing debt. *Australian Journal of Management*, 37(2), 283–295. <https://doi.org/10.1177/0312896211429159>

