Orissa Journal of Commerce
Vol. 46, Issue 3, July-September 2025
ISSN: 0974-8482

URL: www.ojcoca.org
DOI: https://doi.org/10.54063/ojc.2025.v46i03.05

# Corporate Borrowings and Financial Performance across Life-Cycles

**Surya Narayan Behera[1], Ananta Kumar Sahoo[2], Maheswar Sethi[3]***

[1,2&3] *P.G. Department of Commerce, Berhampur University, Odisha, India*

[*] *Corresponding Author*

**To cite this paper**
Behera, S. N., Sahoo, A. K., & Sethi, M. (2025). Corporate Borrowings and Financial Performance across Life-Cycles. Orissa Journal of Commerce. 46(3), 60-68.

**Keywords**
Corporate Borrowings; Firm Performance; Firm Life-Cycle; Manufacturing Firms

**JEL Classification**
D22; G30; L25; L60

**Abstract:** This study examines the effect of corporate borrowings on financial performance across different firm life-cycles in Indian manufacturing firms. Using a panel dataset from 2011 to 2024 of 1,527 firms, the findings reveal that corporate borrowings have a negative effect on financial performance, indicating that excessive reliance on debt financing adversely affects profitability. Further, the life-cycle analysis demonstrates that the adverse effect of borrowings varies across different stages of corporate development. The negative impact is strongest during the maturity and shakeout stages, while comparatively weaker effects are observed during the introduction and decline stages. The result aligns with the trade-off theory and agency theory by suggesting that costs associated with excessive leverage compensate its potential benefits.

## 1. Introduction

Corporate borrowing is one of the most significant financing decisions affecting a firm's operational efficiency, profitability, and long-term sustainability. The choice between debt and equity financing has remained a central issue in corporate finance since the seminal work of Modigliani & Miller (1958), who argued that capital structure is irrelevant to firm value under perfect market conditions. However, in real-world markets characterised by taxes, bankruptcy costs, information asymmetry, and agency conflicts, financing decisions become highly relevant to firm performance and value. In this regard, subsequent theoretical developments, such as the trade-off theory, pecking order theory, and agency theory, offer different explanations of firms' borrowing behaviour. The trade-off theory (Kraus & Litzenberger, 1973) suggests that firms maintain an optimal level of borrowings by balancing the tax advantages of debt against financial distress and bankruptcy costs. In contrast, the pecking order theory (Myers & Majluf, 1984) claims that firms prefer internally generated funds over external financing and rely on debt only when internal resources are insufficient. These theories imply that corporate borrowings can either enhance or deteriorate firm profitability depending on the level of debt utilisation and firm-specific conditions.

The association between corporate borrowings and financial performance has attracted extensive empirical attention across developed and developing economies. Several studies (Cobham & Subramaniam, 1998; DeAngelo et al., 2010; Owen & Yawson, 2010) report that moderate levels of debt improve financial performance through tax shields, managerial discipline, and efficient allocation of resources. Conversely, excessive dependence on debt may increase financial risk, agency costs, and the probability of financial distress, thereby negatively affecting profitability. Another empirical evidence also indicates the presence of a non-linear relationship between leverage and financial performance, supporting the existence of an optimal borrowing level (Le & Phan, 2017; Ronoowah & Seetanah, 2024). Despite this, empirical findings remain inclusive due to differences in institutional regulations, industrial structures, and firm characteristics. An important limitation of prior studies is that they treat firms as homogeneous entities and

ignore the dynamic nature of firms across different stages of development. Firms evolve through various life-cycle stages, such as introduction, growth, maturity, shakeout, and decline, and their financing requirements, investment opportunities, risk profile, and profitability vary substantially across these stages (Dickinson, 2011). Generally, young firms in the introduction and growth stages face higher information asymmetry, lower retained earnings, and greater financing constraints, which may increase dependence on external borrowings (Mueller, 1972). On the other hand, mature firms possess stable cash flows and easier access to debt markets, enabling them to use the borrowings more efficiently (Dickinson, 2011). Therefore, the effect of corporate borrowings on financial performance is likely to differ across firm life-cycle stages.

The life-cycle perspective has become more relevant in explaining corporate financial behaviour because it captures the changing financial needs and strategic priorities of firms over time. Financing decisions that may positively influence performance in one stage could adversely affect firms in another stage. Consequently, examining the borrowing effects on the performance nexus without considering firm life-cycle heterogeneity may reveal an incomplete conclusion. Although some studies have investigated capital structure determinants across life-cycle stages, there is a lack of evidence regarding how corporate borrowings affect financial performance throughout firm life-cycle phases, particularly in Indian firms. Manufacturing firms in India operate in a highly competitive and financially constrained environment (Mehta & Rajan, 2017) where borrowings are essential for expansion, technological advancement, and working capital management (Dash et al., 2023). At the same time, increasing debt obligations may adversely affect profitability due to rising interest burdens and financial risks. Moreover, Indian manufacturing firms exhibit substantial heterogeneity in terms of size, growth, and financial conditions across life-cycle periods. So, analysis of borrowings and financial performance is particularly important. Similarly, from the investors and lenders' point of view, it may benefit from identifying how borrowing decisions influence firm efficiency and risk across different phases of firm development.

The subsequent sections of the paper are organised as follows: the second section depicts the review of related papers. The third section describes the methodology used in this paper. The fourth section analyses the results, and the final section concludes the study.

## 2. Review of Literature

The relationship between corporate borrowings and financial performance has remained one of the central issues in corporate finance literature. Since the pioneering work of Modigliani & Miller (1958), studies have extensively examined whether financing decisions influence firm profitability and value. The MM approach initially argued that capital structure is irrelevant to firm value under perfect market conditions. However, the assumptions of perfect markets rarely hold in practice because firms operate under taxes, bankruptcy costs, and information asymmetry (Behera & Sethi, 2024), and agency conflicts. Subsequently, several theories have been developed to explain how corporate borrowings affect financial performance, like the trade-off theory, which suggests that firms determine an optimal capital structure by balancing the tax benefits of debt financing against the cost of financial distress and bankruptcy (Kraus & Litzenberger, 1973). Similarly, agency theory (Jensen & Meckling, 1976) argues that higher leverage gives rise to conflicts between managers and shareholders. Excessive debt obligations reduce managerial flexibility, increase monitoring costs, and negatively influence the firm's performance. In contrast, the pecking order theory suggests that firms prefer internal financing over external financing due to information asymmetry and transaction costs (Sahoo & Sethi, 2025).

Several studies report a negative association between leverage and financial performance. According to Zeitun & Tian (2007), using data from Jordanian firms, excessive debt financing increases financial distress costs and reduces operational efficiency. Similarly, Salim & Yadav (2012) document a significant negative relationship between leverage and financial performance among Malaysian listed firms, showing that high debt burdens weaken profitability and increase financial risk. Likewise, Le & Phan (2017) reported that leverage adversely affects firm performance in Vietnamese firms, as highly leveraged firms face rising borrowing costs and financial instability. Some studies conducted in the Indian context, such as those by

Majumdar & Chhibber (1999), observed that highly leveraged Indian firms exhibit lower profitability and operational efficiency due to financial burden and agency-related inefficiencies. Similarly, Chakraborty (2010) finds that Indian firms prefer internal financing over debt financing. The study argues that higher debt levels negatively influence firm profitability. In contrast, some studies report a positive relationship between debt financing and firm performance. Studies of Abor (2005), Berger et al. (2003), and Sahoo & Behera (2025) find that short-term debt positively influences profitability because firms efficiently utilise external financing for business expansion. Despite the extensive literature, most previous studies treat firms as homogenous entities and ignore the dynamic nature of firms across different stages of development, while Mueller (1972) reveals that financial needs, growth opportunities, profitability, and investment behaviour change across firm life-cycle stages. Similarly, according to Dickinson (2011), firm life-cycle theory, firms exhibit different financial characteristics during introduction, growth, maturity, shakeout, and decline stages. However, most existing studies focus on the overall relationship between leverage and performance without integrating the life-cycle perspective, and the dynamic impact of corporate borrowings on financial performance across the stage remains insufficiently explored. Therefore, this study attempts to fill this gap by examining the effect of corporate borrowings on financial performance across different firm life-cycle stages in Indian manufacturing firms.

## 3. Methodology

### 3.1. Data

The study has used firm-level data of 1,527 Indian manufacturing firms listed on both NSE and BSE for the period 2011- 2024. The data have been collected from PROWESS database of the Centre for Monitoring Indian Economy (CMIE). This study focuses specifically on listed manufacturing firms because these firms adhere to the financial reporting norms prescribed by the Securities and Exchange Board of India (SEBI). These regulations ensure transparency and consistency in financial disclosures and make more reliable data sources for analysis. In addition, firms with missing data are excluded from the sample.

### 3.2. Model Specification

To empirically determine the impact of corporate borrowings on financial performance, this study employs a pooled Ordinary Least Squares (OLS) regression model. The model is applied in two parts: first, to estimate the overall effect of corporate borrowings on the financial performance of all firms in the sample, and second, to examine how these relationships change across different stages of the firm life-cycle, classified based on the framework of Dickinson (2011). This model allows for capturing the average effect of the variables across firms and time, assuming homogeneity in slope coefficients and ignoring unobserved firm-specific effects (Baltagi, 2008; Wooldridge J M, 2010). To ensure the robustness of the findings, the same models are also estimated using a fixed-effect regression approach, and the results remained consistent in terms of sign and significance of variables, so that the validity of the fixed-effect estimates is emphasised. The estimated autoregressive dynamic panel model is as follows:

$$FP_{it} = \alpha_i + \beta_1 CB_{it} + \beta_2 Size_{it} + \beta_3 Age_{it} + \beta_4 CA_{it} + \beta_5 RD_{it} + \beta_6 Div_{it} + \varepsilon_{it}$$

Where,
FP = Financial performance, measured as the ratio of profit after tax to total assets.
CB = Corporate borrowings measured by the total borrowings to total assets ratio.
Size = Natural logarithm of total assets.
Age = Firm age, measured as the natural logarithm of the number of years since the firm's incorporation.
CA = Collateral ability, measured as the ratio of fixed assets to total assets.
RD = Research & Development expenditure, measured as the ratio of R&D expenditure to total assets.
Div = A dummy variable that takes 1 for dividend payment, and 0 otherwise.

## 4. Results and Discussion

### 4.1. Summary Statistics

**Table 1: Descriptive Statistics**

| Variable | Mean | Median | S.D. | Min | Max |
|---|---|---|---|---|---|
| **FP** | 0.046 | 0.038 | 0.075 | -0.975 | 0.592 |
| **CB** | 0.510 | 0.527 | 0.208 | 0.001 | 0.930 |
| **Size** | 12.5 | 12.4 | 2.04 | 2.30 | 20.7 |
| **Age** | 35.1 | 31.0 | 19.9 | 1.00 | 161.0 |
| **CA** | 0.306 | 0.290 | 0.170 | 0.000 | 0.971 |
| **RD** | 0.008 | 0.003 | 0.013 | 0.000 | 0.195 |
| **Div** | 0.481 | 0.00 | 0.500 | 0.00 | 1.00 |

Source: Authors' compilation.

Table 1 reports the descriptive statistics that provide an overview of the dataset and key characteristics of the variables. All the variables seem normally distributed with little variability, as indicated by small standard deviations.

### 4.2. Correlation Matrix

**Table 2: Correlation Matrix**

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | VIF |
|---|---|---|---|---|---|---|---|---|
| **(1) FP** | 1 | | | | | | | |
| **(2) CB** | -0.321 | 1 | | | | | | 1.098 |
| **(3) Size** | 0.201 | -0.005 | 1 | | | | | 1.154 |
| **(4) Age** | 0.072 | -0.106 | 0.350 | 1 | | | | 1.098 |
| **(5) CA** | -0.130 | 0.124 | 0.048 | 0.005 | 1 | | | 1.040 |
| **(6) RD** | 0.089 | -0.133 | -0.024 | -0.131 | -0.083 | 1 | | 1.042 |
| **(7) Div** | 0.362 | -0.192 | 0.450 | 0.254 | -0.015 | 0.024 | 1 | 1.137 |

Source: Authors' compilation.

The Karl Pearson coefficient of correlation is shown in Table 2. The correlation coefficient lies within 0.005 - 0.450, implying that the variables are free from the collinearity issue. Further, the highest variance inflation factor (VIF) of 1.137 implies the absence of multicollinearity issues among the variables (Chatterjee & Hadi, 2015; O'Brien, 2007).

### 4.3. Regression Result

**Table 3. Effect of Corporate Borrowings on Financial Performance**

| | OLS Estimation | | | Fixed-Effect Estimation | | |
|---|---|---|---|---|---|---|
| | ***Coefficient*** | ***t-test*** | ***p-value*** | ***Coefficient*** | ***t-test*** | ***p-value*** |
| **Intercept** | 0.102*** | 16.96 | 0.001 | 0.308*** | 14.03 | 0.001 |
| **CB** | −0.130*** | −33.00 | 0.001 | −0.144*** | −23.64 | 0.001 |
| **Size** | 0.001*** | 3.627 | 0.001 | −0.011*** | −5.590 | 0.001 |
| **Age** | −0.000*** | −2.933 | 0.003 | −0.001 | −0.9650 | 0.334 |
| **CA** | −0.065*** | −13.69 | 0.001 | −0.103*** | −14.10 | 0.001 |
| **RD** | 0.117** | 2.202 | 0.027 | 0.161* | 1.806 | 0.071 |
| **Div** | 0.038*** | 22.77 | 0.001 | 0.027*** | 14.27 | 0.001 |
| ***Observations*** | | *7350* | | ***Observations*** | *7350* | |
| ***Adjusted $R^2$*** | | *0.264* | | ***Within $R^2$*** | *0.154* | |
| ***F (6, 7343)*** | | 440.445 | | ***F (715, 6634)*** | 14.171 | |
| ***p-value (F)*** | | *0.000* | | ***p-value (F)*** | *0.000* | |

*Source: Authors' compilation.*

*Note: ***, **, and * stand for statistical significance at 1%, 5%, and 10%, respectively.*

Table 3 shows the regression results examining the effect of corporate borrowings on financial performance. The findings reveal a significant negative (-0.130***) relationship between corporate borrowings and firm performance, which suggests that a higher level of borrowings adversely affects firm performance among Indian manufacturing firms. The negative impact of borrowings on financial performance indicates that excessive dependence on debt financing imposes substantial financial burdens on firms through interest obligations, repayment commitments, and increased financial distress costs. Although debt financing offers certain advantages, such as tax shield and leverage benefits, excessive borrowing reduces operational flexibility and increases financial risk, which weakens firm profitability and efficiency. This finding aligns with the trade-off theory, which argues that firms balance the tax benefits of debt against the costs associated with financial distress and bankruptcy (Kraus & Litzenberger, 1973). This finding also supports the agency cost theory (Jensen & Meckling, 1976), which argues that higher leverage can intensify agency conflicts between shareholders, managers, and creditors. Excessive debt obligations encourage managers to undertake short-term decisions focused on meeting debt commitments rather than maximising long-term firm value. Further, the financing environment of emerging economies like India, where borrowing costs, refinancing risks, and financial market imperfections remain relatively high (Bhadury & Pratap, 2018). Manufacturing firms with greater leverage are likely to face increasing interest burdens and cash flow pressures, particularly during periods of economic uncertainty and fluctuating market conditions. Therefore, higher debt levels adversely affect firms' operational performance and financial stability. This finding is similar to various studies, such as Rajan & Zingales (1995), Salim & Yadav (2012), and Abor (2005), which report a negative relationship between leverage and firm profitability, particularly in developing economies.

The results indicate that Indian manufacturing firms tend to experience diminishing performance as debt levels increase, meaning that conservative borrowing strategies contribute to better operational outcomes. It suggests that internally generated funds remain comparatively more efficient and less risky than excessive reliance on external financing, which is also revealed by Zeitun & Tian (2007) and Sethi & Swain (2019). Therefore, firms maintaining moderate borrowing levels are better positioned to sustain profitability, liquidity, and long-term financial stability. Additionally, the study employs the fixed-effect model to ensure the robustness of the findings. The fixed-effect approach effectively controls the time-invariant firm-specific factors and provides more reliable within-firm estimates (Wooldridge, 2010). The persistence of the negative and significant relationship between corporate borrowings and firm performance after applying the fixed-effect model strengthens the validity and robustness of the results.

**Table 4. Effect of Corporate Borrowings on Financial Performance across Life-Cycles**

| | OLS Estimation | | | | |
|---|---|---|---|---|---|
| **Coefficient** | **Introduction** | **Growth** | **Mature** | **Shakeout** | **Decline** |
| **CB** | −0.085*** | −0.097*** | −0.139*** | −0.114*** | −0.079*** |
| | *(−5.202)* | *(−13.63)* | *(−27.71)* | *(−8.643)* | *(3.00)* |
| **Intercept** | 0.144*** | 0.138*** | 0.106*** | 0.086*** | −0.087** |
| ***Firm Control*** | *Yes* | *Yes* | *Yes* | *Yes* | *Yes* |
| ***Year effect*** | *Yes* | *Yes* | *Yes* | *Yes* | *Yes* |
| ***N*** | *478* | *1459* | *4233* | *891* | *278* |
| ***p-value (F)*** | *0.000* | *0.000* | *0.000* | *0.000* | *0. 000* |
| ***Adj. $R^2$*** | *0.233* | *0.216* | *0.301* | *0.229* | *0.164* |

*Note: ***, and ** stand for statistical significance at 1%, and 5%, respectively. Figures in parentheses denote t-statistics.*
*Source: Authors' compilation.*

Table 4 presents the regression results examining the relationship between corporate borrowings and financial performance across the different firm life-cycle stages, i.e., introduction, growth, maturity, shakeout, and decline. The analysis is based on the firm life-cycle framework, which argues that firms

experience substantial changes in financing behaviour, profitability, investment opportunities, and risk profile as they evolve over time (Anthony & Ramesh, 1992; Dickinson, 2011). The results indicate that corporate borrowings have a consistently negative effect on financial performance throughout the firm's life-cycle stages. However, the magnitude of the effect differs considerably across stages, indicating the influence of borrowings on financial performance is dynamic rather than uniform across firms. In the introduction stage, corporate borrowings negatively affect financial performance with a coefficient of -0.085, which indicates that higher leverage reduces the performance of newly established firms. Generally, young firms face high operational uncertainty, unstable cash flows, limited market reputation, and severe information asymmetry (Berger & Udell, 1998). Since such firms often lack sufficient retained earnings and stable earnings capacity, excessive debt obligations intensify repayment pressure and increase financial distress costs, which adversely affect operational performance.

The negative effect of corporate borrowings becomes stronger during the growth stage, where the firms generally require significant external financing to support expansion, technological investment, and production capacity enhancement (Mueller, 1972). Although debt financing facilitates rapid expansion, excessive leverage simultaneously increases financial obligations and refinancing risks. The findings imply that growth firms with higher debt burdens experience declining operational efficiency and profitability due to rising interest commitments and financial pressure. This result supports the trade-off theory, which argues that the benefits of debt financing diminish when firms approach excessive leverage levels (Kraus & Litzenberger, 1973).

Similarly, the maturity stage exhibits the strongest negative (−0.139) relationship between borrowings and financial performance. This result shows that excessive debt financing has the most severe adverse effect on mature firms compared to all other life cycle states. Mature firms possess stable earnings, accumulated retained earnings, predictable cash flows, and easier access to internal financing sources (Dickinson, 2011). Therefore, greater dependence on debt financing among mature firms reflects overleveraging rather than financing necessity. The strong negative coefficient indicates that mature firms benefit more from conservative financing policies and lower leverage levels. Similar evidence is documented by Majumdar & Chhibber (1999), who find that higher leverage negatively influences profitability among Indian firms due to increasing financial burden and operational inefficiency.

In the shakeout stage, firms often encounter slowing growth opportunities, market saturation, increasing competitive pressure, and declining expansion possibilities (Miller & Friesen, 1984). In this stage, the negative influence indicates that higher debt obligations also reduce managerial flexibility and increase financial vulnerability during periods of declining growth. It suggests that leverage becomes increasingly costly for firms transitioning toward reduced market dynamism. This finding is also in line with the study of Jensen (1986), which emphasised that excessive debt creates inefficiencies and reduces firms' strategic flexibility when growth opportunities weaken.

The decline stage reports the weakest negative effect of corporate borrowings on financial performance. According to Miller & Friesen (1984), declining firms experience shrinking revenues, weak profitability, declining market share, and decreasing operational efficiency. In such circumstances, debt financing becomes more difficult to manage due to insufficient cash flows and rising repayment risk. However, a comparatively smaller degree of coefficient (−0.079) suggests that declining firms already operate at relatively lower performance levels, thereby reducing the marginal adverse effect of additional borrowings. Overall, the results indicate that the costs associated with excessive borrowings outweigh their potential benefits across all life-cycle stages of Indian manufacturing firms.

## 4.4. Robustness Check

To ensure the reliability and consistency of the empirical findings, a robustness check has been conducted using a fixed-effect panel regression model. The fixed-effect model is used for time-invariant and firm-specific heterogeneity, which controls for estimation bias (Baltagi, 2008). This result (Table 5) is consistent

with initial findings, which indicate that the observed relationship between corporate borrowings and financial performance is robust to alternative model specifications

**Table 5: Effect of Corporate Borrowings on Financial Performance across Life-Cycles**

| | Fixed-Effect Estimation | | | | |
|---|---|---|---|---|---|
| **Coefficient** | **Introduction** | **Growth** | **Mature** | **Shakeout** | **Decline** |
| **CB** | −0.141*** | −0.113*** | −0.155*** | −0.119*** | −0.110* |
| | (−4.854) | (−9.278) | (−19.09) | (−4.546) | (−1.310) |
| **Intercept** | 0.218*** | 0.273*** | 0.381*** | 0.227** | −0.642* |
| ***Firm Control*** | *Yes* | *Yes* | *Yes* | *Yes* | *Yes* |
| ***Year effect*** | *Yes* | *Yes* | *Yes* | *Yes* | *Yes* |
| ***N*** | *478* | *1459* | *4233* | *891* | *278* |
| ***p-value (F)*** | *0.000* | *0.000* | *0.000* | *0.000* | *0.003* |
| ***Within $R^2$*** | *0.237* | *0.156* | *0.184* | *0.082* | *0.097* |

*Note: ***, and ** stand for statistical significance at 1%, and 5%, respectively. Figures in parentheses denote t-statistics.*
*Source: Authors' compilation.*

## 5. Conclusion

This study examined the effect of corporate borrowings on financial performance across different firm life-cycle stages in Indian manufacturing firms. Using panel data of manufacturing firms and employing both Ordinary Least Squares and Fixed-Effect Estimation techniques, the study investigated whether the impact of corporate borrowings on financial performance varies systematically throughout the stages of corporate development. The findings reveal that corporate borrowings exert a negative effect on financial performance, and excessive reliance on debt financing adversely affects firms' operational efficiency and profitability. The robustness of the results under the fixed-effect estimation further confirms that the negative relationship persists even after controlling for unobservable firm-specific heterogeneity. The overall findings suggest that although debt financing may provide certain benefits, such as tax advantages, excessive borrowing imposes financial burdens through higher interest obligations, financial distress costs, agency conflict, and managerial flexibility. As a result, the cost of excessive leverage seems to exceed any potential advantages. The findings support the trade-off theory of capital structure, which argues that a firm's effort to balance the benefits of debt and the cost of financial distress (Kraus & Litzenberger, 1973). Similarly, the results are also consistent with agency theory, which suggests that excessive leverage increases managerial conflict, reducing operational efficiency and financial performance (Jensen & Meckling, 1976).

The life-cycle analysis further reveals that the impact of corporate borrowings on the financial performance is not uniform across stages of corporate development. The negative effect of borrowings is observed throughout all stages of the firm's life-cycle, but the degree of the effect differs across the stages. The adverse impact of borrowings becomes strongest during the maturity and shakeout stages, which indicates that firms with stable earnings and stronger internal financing capacity suffer more in performance when excessively dependent on debt financing. On the other hand, relatively weaker effects observed during the introduction and decline stages reflect the financial vulnerabilities and structural constraints describing firms operating at the early and final phases of the corporate life-cycle. The findings of the study carry important implications for corporate managers, investors, and policymakers. The study suggests that firms should avoid maintaining uniform borrowing policies throughout the life-cycle because financing requirements and financial capacities vary substantially across developmental stages. Despite this, the study has limitations as it focuses only on the listed manufacturing firms for the period from 2011 to 2024.

## References


Abor, J. (2005). The Effect of Capital Structure on Profitability: An Empirical Analysis of Listed Firms in Ghana. *Journal of Risk Finance*, *6*(5), 438–445. https://doi.org/10.1108/15265940510633505

Anthony, J. H., & Ramesh, K. (1992). Association between Accounting Performance Measures and Stock Prices: A Test of the Life Cycle Hypothesis. *Journal of Accounting and Economics*, *15*(2), 203–227. https://doi.org/https://doi.org/10.1016/0165-4101(92)90018-W

Baltagi, B. H. (2008). *Econometric Analysis of Panel Data Third edition* (Vol. 4). John Wiley & Sons. https://doi.org/10.1007/978-3-030-53953-5

Behera, S. N., & Sethi, M. (2024). Corporate Borrowings: A Conceptual Perspective. *European Economic Letters (EEL)*, *14*(1), 396–404. https://doi.org/10.52783/eel.v14i1.1036

Berger, A. N., Bonaccorsi, E., & Patti, D. (2003). *Capital Structure and Firm Performance: A New Approach to Testing Agency Theory and an Application to the Banking Industry*.

Berger, A. N., & Udell, G. F. (1998). The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle. *Journal of Banking and Finance*, *22*, 613–673. https://doi.org/10.1016/S0378-4266(98)00038-7

Bhadury, S., & Pratap, B. (2018). India's Bad Loan Conundrum: Recurrent Concern for Banking System Stability and the Way Forward. In *International Symposia in Economic Theory and Econometrics* (Vol. 25, pp. 123–161). Emerald Group Publishing Ltd. https://doi.org/10.1108/S1571-038620180000025007

Chakraborty, I. (2010). Capital Structure in an Emerging Stock Market: The Case of India. *Research in International Business and Finance*, *24*(3), 295–314. https://doi.org/10.1016/j.ribaf.2010.02.001

Chatterjee Samprit, & Hadi, A. S. (2015). Regression Analysis by Example. In *John Wiley & Sons* (5th ed.). John Wiley & Sons.

Cobham, D., & Subramaniam, R. (1998). Corporate Finance in Developing Countries: New Evidence for India*. *Pergamon World Development*, *26*(6), 1033–1047. https://doi.org/10.1016/S0305-750X(98)00025-4

Dash, S. R., Sethi, M., & Swain, R. K. (2023). Financial Condition, Working Capital Policy and Profitability: Evidence from Indian Companies. *Journal of Indian Business Research*, *15*(3), 318–355. https://doi.org/10.1108/JIBR-12-2020-0378

DeAngelo, H., DeAngelo, L., & Stulz, R. M. (2010). Seasoned Equity Offerings, Market Timing, and the Corporate Life-cycle. *Journal of Financial Economics*, *95*(3), 275–295. https://doi.org/10.1016/j.jfineco.2009.11.002

Dickinson, V. (2011). Cash Flow Patterns as a Proxy for Firm Life Cycle. *Accounting Review*, *86*(6), 1969–1994. https://doi.org/10.2308/accr-10130

Jeffrey M. Wooldridge. (2010). *Econometric Analysis of Cross Section and Panel Data* (2nd ed.). MIT Press.

Jensen, M. C. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *The American Economic Review*, *76*(2), 323–329. https://www.jstor.org/stable/1818789

Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. In *Journal of Financial Economics* (1st ed., Number 4). Harvard University Press.

Kraus, A., & Litzenberger, R. H. (1973). A State-Preference Model of Optimal Financial Leverage. *The Journal of Finance*, *28*(4), 911–922. https://doi.org/10.2307/2978343

Le, T. P. V., & Phan, T. B. N. (2017). Capital structure and firm performance: Empirical evidence from a small transition country. *Research in International Business and Finance*, *42*, 710–726. https://doi.org/10.1016/j.ribaf.2017.07.012

Majumdar, S. K., & Chhibber, P. (1999). Capital Structure and Performance: Evidence from a Transition Economy on an Aspect of Corporate Governance. In *Public Choice* (Vol. 98).

Mehta, Y., & Rajan, A. J. (2017). Manufacturing Sectors in India: Outlook and Challenges. *Procedia Engineering*, *174*, 90–104. https://doi.org/10.1016/j.proeng.2017.01.173

Miller, D., & Friesen, P. H. (1984). A Longitudinal Study of the Corporate Life Cycle. *Management Science*, *30*(10), 1161–1183. https://doi.org/10.1287/mnsc.30.10.1161

Modigliani, F., & Miller, M. H. (1958). *The Cost of Capital, Corporation Finance and the Theory of Investment*. *48*(3), 261–297. https://www.jstor.org/stable/1809766

Mueller, D. C. (1972). A Life Cycle Theory of the Firm. *The Journal of Industrial Economics*, *20*(3), 199–219. https://doi.org/10.2307/2098055

Myers, S. C., & Majluf, N. S. (1984). Corporate Financing and Investment Decisions When Firms Have Information that Investors Do Not Have. *Journal of Financial Economics*, *13*(2), 187–221. https://doi.org/10.1016/0304-405X(84)90023-0

O'Brien, R. M. (2007). A Caution Regarding Rules of Thumb for Variance Inflation Factors. *Quality and Quantity*, *41*(5), 673–690. https://doi.org/10.1007/s11135-006-9018-6

Owen, S., & Yawson, A. (2010). Corporate Life Cycle and M&A Activity. *Journal of Banking and Finance*, *34*(2), 427–440. https://doi.org/10.1016/j.jbankfin.2009.08.003

Rajan, R. G., & Zingales, L. (1995). What Do We Know about Capital Structure? *The Journal of Finance*, *L*(5), 1421–1460. https://doi.org/10.1111/j.1540-6261.1995.tb05184.x

Ronoowah, R. K., & Seetanah, B. (2024). Capital Structure and the Firm Performance Nexus: The Moderating and Mediating Roles of Agency Cost. *Managerial Finance*, *50*(9), 1598–1621. https://doi.org/10.1108/MF-03-2024-0177

Sahoo, A. K., & Behera, S. N. (2025). R&D Intensity and Corporate Borrowings in Indian Pharmaceutical Firms. *Orissa Journal of Commerce*, *46*(1), 57–70. https://doi.org/10.54063/ojc.2025.v46i01.05

Sahoo, A. K., & Sethi, M. (2025). Cash flow sensitivity of cash: a systematic literature review and bibliometric analysis. EuroMed Journal of Business, 1-26. https://doi.org/10.1108/EMJB-05-2025-0203

Salim, M., & Yadav, R. (2012). Capital Structure and Firm Performance: Evidence from Malaysian Listed Companies. *Procedia - Social and Behavioral Sciences*, *65*, 156–166. https://doi.org/10.1016/j.sbspro.2012.11.105

Sethi, M., & Swain, R. (2019). Determinants of cash holdings: A study of manufacturing firms in India. *International Journal of Management Studies,* Vol. VI, Issue –2(2), 11-26. http://dx.doi.org/10.18843/ijms/v6i2(2)/02

Zeitun, R., & Tian, G. G. (2007). Does Ownership Affect a Firm's Performance and Default Risk in Jordan? *Corporate Governance*, *7*(1), 66–82. https://doi.org/10.1108/14720700710727122