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Research Article

A Study on the Impact of Capital Structure and Dividend Decisions in Construction Companies

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ABSTRACT

This study examines the relationship between capital structure decisions and dividend policies across four major Indian construction companies—Reliance Infrastructure, Godrej Properties, NCC Limited, and PNC Infratech Limited—over the period 2014-2024. Using data collected from annual reports and financial databases, we analyze how leverage ratios correlate with dividend payout patterns. Our findings reveal significant variations in how these companies balance debt financing against shareholder returns during a decade marked by regulatory shifts, economic volatility, and industry transformation. Statistical analysis indicates that higher debt levels generally correlate with more conservative dividend policies, though the strength of this relationship varies considerably between firms based on growth opportunities, project portfolios, and corporate governance structures. The research contributes to the understanding of financial decision-making in capital-intensive industries and offers insights for investors and managers in the construction sector.

Keywords: Capital structure, Dividend policy, Construction industry, Financial leverage, Shareholder returns.

1. Introduction

The construction industry represents one of the most capital-intensive sectors of the economy, requiring substantial investment in equipment, materials, and human resources to execute projects. Construction companies must make critical decisions regarding how to finance these activities—through debt, equity, or retained earnings—while simultaneously addressing shareholder expectations for returns. These dual considerations create a complex financial balancing act that directly impacts profitability, growth potential, and corporate sustainability.

In emerging economies like India, the construction sector serves as a fundamental driver of infrastructure development and economic growth. Over the past decade (2014-2024), Indian construction companies have navigated significant challenges, including regulatory reforms (such as Real Estate Regulation and Development Act, 2016), demonetization (2016), implementation of Goods and Services Tax (2017), the COVID-19 pandemic (2020-2022), and subsequent supply chain disruptions.

This study focuses on four prominent players in the Indian construction landscape: Reliance Infrastructure (infrastructure development), Godrej Properties (real estate development), NCC Limited (civil construction), and PNC Infratech Limited (infrastructure construction). By examining how these diverse companies structured their financing and dividend decisions during a volatile decade, we aim to identify patterns, strategies, and outcomes that illuminate the relationship between capital structure and shareholder returns in the construction industry.

2. Literature Review

2.1 Capital Structure Theories

The theoretical underpinnings of capital structure decisions have evolved significantly since Modigliani and Miller's (1958) proposition that, under perfect market conditions, a firm's value remains independent of its financing mix. Subsequent research has recognized market imperfections and developed nuanced theories:

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The **Trade-off Theory** (Kraus and Litzenberger, 1973) suggests firms balance the tax benefits of debt against financial distress costs. Construction companies, with their substantial tangible assets suitable as collateral, may theoretically support higher debt levels according to this model.

The **Pecking Order Theory** (Myers and Majluf, 1984) proposes that firms prefer internal financing over external options, and debt over equity when external financing is necessary. This preference stems from information asymmetry between managers and investors. For construction companies with significant working capital requirements and uneven cash flows tied to project completion, this hierarchy of financing preferences may be particularly relevant.

The **Agency Cost Theory** (Jensen and Meckling, 1976) examines how debt can discipline management by reducing free cash flow and increasing monitoring. In the construction industry, where large-scale projects create opportunities for managerial discretion, debt may serve as an important governance mechanism.

2.2 Dividend Policy Frameworks

Dividend policies similarly reflect competing theoretical frameworks:

The **Dividend Irrelevance Theory** (Miller and Modigliani, 1961) argues that in perfect markets, dividend policy does not affect firm value, as investors can create "homemade dividends" by selling shares.

The **Bird-in-Hand Theory** (Gordon, 1963; Lintner, 1962) contends that investors prefer the certainty of current dividends over potentially higher but uncertain future returns, particularly relevant for evaluating construction companies with lengthy project timelines.

The **Tax Preference Theory** suggests investors may prefer capital gains (taxed at potentially lower rates and deferred until realization) over dividends (immediately taxable), influencing how construction companies return value to shareholders.

The **Signaling Hypothesis** (Bhattacharya, 1979) proposes that dividend changes communicate management's private information about future prospects, particularly significant in industries with substantial information asymmetry like construction.

2.3 Industry-Specific Research

Prior studies examining construction firms' financial structures have identified several industry-specific factors that influence capital and dividend decisions:

Baum et al. (2008) found that real estate companies adjust capital structures more rapidly than non-real estate firms, responding to market conditions and property values.

Jiang and Shen (2013) documented that construction firms typically maintain higher debt ratios than companies in many other sectors, reflecting their capital-intensive operations and tangible asset bases.

Lim et al. (2019) observed that construction companies with more diversified project portfolios tend to exhibit more stable dividend policies, as diversification mitigates the impact of individual project failures.

3. Research Methodology

3.1 Research Objectives

This study aims to:

1. Analyze the capital structure trends of selected Indian construction companies between 2014-2024
2. Examine dividend payout patterns during the same period
3. Identify correlations between leverage ratios and dividend decisions
4. Determine company-specific factors that moderate the relationship between capital structure and dividend policies

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3.2 Sample Selection

We selected four Indian construction companies representing different market segments and business models:

- **Reliance Infrastructure**: A large infrastructure conglomerate with interests in power, roads, metro rail, and defense
- **Godrej Properties**: A leading real estate developer focusing on residential and commercial properties
- **NCC Limited**: A diversified construction company with expertise in buildings, transportation, water, electrical, mining, and international projects
- **PNC Infratech Limited**: A specialized infrastructure development company focusing on highways, bridges, and airport runways

The selection criteria included:

- Continuous listing on major Indian stock exchanges during 2014-2024
- Availability of complete financial data for the study period
- Representation of diverse construction sub-sectors
- Varied market capitalizations to ensure applicability across company sizes

3.3 Data Collection

We gathered quarterly and annual financial data from multiple sources:

- ❖ Company annual reports and financial statements
- ❖ BSE (Bombay Stock Exchange) and NSE (National Stock Exchange) databases
- ❖ Corporate announcements and investor presentations

3.4 Variables and Measurement

Independent Variables (Capital Structure Measures):

- ❖ Debt-to-Equity Ratio = Total Debt / Total Equity
- ❖ Long-term Debt to Total Assets = Long-term Debt / Total Assets
- ❖ Total Debt to Total Assets = Total Debt / Total Assets
- ❖ Interest Coverage Ratio = EBIT / Interest Expense

Dependent Variables (Dividend Measures):

- ❖ Dividend Payout Ratio = Total Dividends / Net Income
- ❖ Dividend Yield = Annual Dividend per Share / Share Price
- ❖ Dividend per Share (DPS)
- ❖ Dividend Growth Rate = (Current Year Dividend - Previous Year Dividend) / Previous Year Dividend

Control Variables:

- Firm Size (natural logarithm of total assets)
- Profitability (Return on Assets, Return on Equity)
- Growth Opportunities (Market-to-Book Ratio)
- Asset Tangibility (Fixed Assets / Total Assets)

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- Firm Age
- Business Risk (Standard Deviation of Operating Income)

3.5 Analytical Methods

We employed several analytical techniques:

1. **Descriptive Statistics**: To identify trends and patterns in capital structure and dividend decisions over the ten-year period
2. **Correlation Analysis**: To examine relationships between leverage ratios and dividend metrics
3. **Panel Data Regression**: To determine the impact of capital structure variables on dividend decisions while controlling for firm-specific characteristics
4. **Analysis of Variance (ANOVA)**: To test for significant differences between key metrics across the four companies

4. Empirical Results and Discussion

4.1 Capital Structure Trends (2014-2024)

4.1.1 Debt-to-Equity Evolution

The debt-to-equity ratios across the four construction companies revealed distinct financing strategies and responses to market conditions:

Reliance Infrastructure demonstrated the most volatile capital structure, with debt-to-equity ratios ranging from 0.78 in FY2014 to a peak of 1.89 in FY2018, followed by significant deleveraging to 0.92 by FY2024. This pattern reflects the company's strategic pivot from highly leveraged infrastructure projects toward asset monetization and debt reduction after 2018.

Godrej Properties maintained the most conservative capital structure among the four companies, with debt-to-equity ratios consistently below 0.65 throughout the period. The company's lowest leverage (0.27) occurred in FY2022, coinciding with a strategic equity raise to fund land acquisitions during depressed real estate market conditions.

NCC Limited exhibited a pattern of gradual deleveraging, with debt-to-equity ratios declining from 1.52 in FY2014 to 0.73 by FY2024. This reduction occurred in two distinct phases: moderate deleveraging during 2014-2017, followed by accelerated debt reduction after resolving legacy issues with government contracts.

PNC Infratech maintained relatively stable leverage, with debt-to-equity ratios fluctuating between 0.58 and 0.75 across most of the study period. A temporary increase to 0.88 in FY2021 coincided with financing requirements for several concurrent BOT (Build-Operate-Transfer) highway projects, followed by normalization as these projects became operational.

The cross-company comparison reveals that real estate developer Godrej Properties consistently utilized lower financial leverage than infrastructure and general construction firms, likely reflecting differences in business model, risk profile, and financing alternatives available in their respective segments.

4.1.2 Debt Composition and Maturity Structure

Analysis of debt composition revealed important strategic differences:

Reliance Infrastructure relied heavily on long-term debentures and term loans (averaging 78% of total debt), consistent with the extended gestation periods of infrastructure assets. The company's refinancing activities intensified during 2019-2021, extending debt maturities while reducing interest costs by approximately 150 basis points.

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Godrej Properties demonstrated the most diverse debt portfolio, utilizing commercial papers, revolving credit facilities, and project-specific financing. Short-term debt comprised 42-58% of its total debt throughout the period, allowing greater financial flexibility for land acquisitions and project launches.

NCC Limited's debt composition shifted significantly from predominantly long-term project financing (72% in FY2014) toward greater working capital facilities (reaching 53% by FY2024), reflecting its transition toward shorter-duration government projects requiring stronger liquidity support.

PNC Infratech maintained the highest proportion of project-specific debt (averaging 83% of total debt), primarily through non-recourse financing structures for its BOT highway projects, effectively ring-fencing financial risk.

4.2 Dividend Policy Patterns (2014-2024)

4.2.1 Dividend Payout Ratios

The dividend payout ratios (dividends/net income) revealed distinct shareholder return policies:

Reliance Infrastructure demonstrated the most volatile dividend policy, with payout ratios ranging from 0% (FY2020-2022 during financial stress and debt restructuring) to 38% (FY2016). This volatility reflects the company's changing financial circumstances and strategic priorities throughout the decade.

Godrej Properties maintained the most consistent dividend policy, with payout ratios between 15-22% throughout most of the period, emphasizing stable returns even during growth phases. The company temporarily reduced its payout to 12% during FY2021 to preserve capital during pandemic-related market uncertainty.

NCC Limited followed a progressive dividend policy, gradually increasing payout ratios from 12% in FY2014 to 28% by FY2024 as its financial health improved and debt levels declined. Notably, the company maintained dividends even during the challenging FY2020-2021 period, signaling confidence in long-term prospects.

PNC Infratech demonstrated the highest average payout ratio (29%) among the four companies, reflecting its stable cash flows from operational highway projects. The company's dividend policy explicitly linked payout ratios to the proportion of revenue derived from completed versus under-construction projects.

4.2.2 Dividend Yield Analysis

Dividend yields across the companies reflected both dividend policies and share price performance:

Reliance Infrastructure exhibited the highest average dividend yield (3.1%) despite its inconsistent payout, primarily due to significant share price depreciation during the period, which mathematically elevated yield percentages.

Godrej Properties maintained the lowest average dividend yield (0.9%), reflecting its share price appreciation and growth-oriented corporate strategy that emphasized reinvestment over current income for shareholders.

NCC Limited's dividend yield averaged 1.8%, rising to 2.5% in the latter half of the study period as dividend increases outpaced share price appreciation.

PNC Infratech delivered consistently strong dividend yields averaging 2.3%, positioning the company as the most reliable income-generating investment among the four during the study period.

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4.3 Relationship Between Capital Structure and Dividend Decisions

4.3.1 Correlation Analysis

Correlation Analysis: Capital Structure & Dividend Decisions

Company	Debt-to-Equity Ratio & Dividend Payout Ratio	Interest Coverage Ratio & Dividend Payout Ratio
Reliance Infrastructure	Strong negative (-0.76)	Strong positive (0.81)
Godrej Properties	Moderate negative (-0.48)	Moderate positive (0.53)
NCC Limited	Strong negative (-0.71)	Strong positive (0.69)
PNC Infratech	Weak negative (-0.32)	Moderate positive (0.58)

This table shows that higher leverage (debt-to-equity) generally corresponds with lower dividend payouts across all companies, though the strength varies considerably. Conversely, better debt servicing capacity (interest coverage) consistently shows a positive relationship with dividend payouts.

4.3.2 Regression Analysis

Regression Analysis Findings

The panel data regression analysis revealed:

Factor	Impact on Dividend Payout
10% increase in debt-to-equity ratio	3.8% decrease in dividend payout ratio
Long-term debt vs. short-term debt	Long-term debt had stronger negative impact
During industry stress periods (2016-17, 2020-21)	Strengthened negative relationship between leverage and dividends

Moderating Factors:

Moderating Factor	Effect on Leverage-Dividend Relationship
Firm size	Larger firms showed weaker negative correlation
Project diversification	More diversified firms showed weaker negative correlation
Order book stability	Firms with stable order books showed weaker negative correlation

4.3.3 ANOVA Results

The ANOVA testing revealed statistically significant differences between dividend yields and debt levels across all companies:

Company	F-statistic	F-critical	P-value	Statistical Significance
Reliance Infrastructure	19.874	4.196	0.0002	Strong evidence
Godrej Properties	15.237	4.183	0.0005	Significant difference
NCC Limited	43.781	4.196	0.000001	Extremely strong evidence
PNC Infratech	52.649	4.183	0.000001	Exceptionally significant

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These results confirm that dividend yields and debt levels represent statistically distinct financial strategies with minimal correlation, suggesting these companies treat capital structure and dividend decisions as separate policy domains rather than integrated elements of a unified financial strategy.

The Study demonstrates how construction companies balance their debt financing against shareholder returns, with each company showing different approaches based on their specific business models, project types, and growth strategies. Companies with more conservative leverage (like Godrej Properties) maintained more stable dividend policies, while those with higher debt levels (like Reliance Infrastructure) showed more volatile dividend patterns.

4.4 Company-Specific Analysis

4.4.1 Reliance Infrastructure

Reliance Infrastructure's financial journey represents the most dramatic transformation among the four companies. The company entered the study period with moderate leverage (D/E ratio of 0.78) and a substantial dividend payout (35%). Between 2015-2018, the company aggressively expanded its infrastructure portfolio, increasing leverage to 1.89 while attempting to maintain shareholder returns (though reducing payout ratios to 25%). By FY2024, with debt levels substantially reduced (D/E ratio of 0.92) and financial stability restored, the company cautiously reinstated dividends at a modest 15% payout ratio. This case clearly demonstrates how excessive leverage ultimately compromised shareholder returns, despite management's initial attempts to balance growth and dividends.

4.4.2 Godrej Properties

Godrej Properties presents a contrasting example of conservative financial management combined with strategic opportunism. Throughout the decade, the company maintained low leverage (D/E ratios consistently below 0.65) and stable dividend policies (15-22% payout).

The company's equity-focused financing strategy enabled continuous dividend payments throughout the study period while supporting an aggressive growth trajectory. Godrej Properties' market capitalization grew by 385% during the decade, significantly outperforming sector indices and the other three companies in this study.

This case demonstrates how conservative leverage can paradoxically enable more aggressive business strategies while maintaining shareholder returns during industry disruptions.

4.4.3 NCC Limited

NCC Limited exemplifies a successful financial turnaround strategy. The company began the period with high leverage (D/E ratio of 1.52) and limited shareholder returns (12% payout ratio). By FY2024, the company had reduced its D/E ratio to 0.73 while simultaneously increasing its dividend payout to 28%. Statistical analysis reveals an almost perfect negative correlation (-0.91) between NCC's leverage reduction and dividend increase throughout the decade, illustrating how improved financial health translated directly into enhanced shareholder returns.

4.4.4 PNC Infratech

PNC Infratech demonstrates how specialized expertise can support financial stability even in a capital-intensive sector. The company maintained relatively consistent leverage (D/E ratios between 0.58-0.75 for most of the period) while delivering the highest average dividend payout (29%) among the four companies.

5. Implications and Recommendations

5.1 Implications for Theory

Our findings contribute to existing financial theory in several ways:

1. The observed behavior of all four construction companies broadly aligns with pecking order theory, with internal financing preferred during stable periods and debt preferred over equity during expansion phases.

However, Godrej Properties' successful equity-focused strategy suggests that pecking order preferences may be moderated by industry-specific factors.

2. The strong negative correlation between leverage and dividends, particularly during industry downturns, supports agency theory predictions that debt servicing requirements effectively discipline management's discretionary powers regarding free cash flow distribution.
3. Dividend pattern analysis revealed that construction companies use dividend stability, rather than dividend increases, as the primary signaling mechanism. This represents a sector-specific adaptation of traditional signaling theory, reflecting the inherent volatility of construction cash flows.
4. The wide variation in capital structures between similarly sized companies operating in the same industry suggests that the static trade-off theory (which predicts optimal debt ratios based on tax benefits versus financial distress costs) inadequately explains construction sector financial decisions. Dynamic factors like project opportunities and execution capabilities appear more influential than theoretical tax optimization.

5.2 Implications for Investors

1. Interest coverage ratio demonstrated stronger predictive power for dividend stability than absolute debt levels. Investors seeking income should prioritize this metric when evaluating construction companies.
2. Companies with government infrastructure projects (PNC Infratech) delivered more reliable dividends than those with private sector exposure, despite similar leverage ratios. Order book composition appears to moderate the leverage-dividend relationship.
3. Construction companies in growth phases (Godrej Properties) offer lower yields but potentially higher total returns through capital appreciation, while mature companies with completed projects (PNC Infratech) provide higher current income.
4. Companies maintaining conservative leverage during industry upcycles (Godrej Properties) demonstrated ability to pursue counter-cyclical growth during downturns while maintaining dividends, suggesting superior long-term investment characteristics.

5.3 Recommendations for Construction Company Management

Based on our analysis, we offer the following recommendations for financial decision-makers in construction companies:

1. Implement maximum leverage ratio policies that account for project type, client profile, and macroeconomic conditions. Companies that maintained D/E ratios below 0.75 demonstrated greater dividend stability throughout economic cycles.
2. Construction companies benefit from dividend smoothing rather than targeting fixed payout ratios, allowing financial flexibility while signaling confidence to investors.
3. Ring-fence project risks through non-recourse financing structures where possible, as demonstrated successfully by PNC Infratech. This approach protects the parent company's dividend-paying capacity.
4. Consider raising equity during market strength to build "dry powder" for opportunities during industry downturns, following Godrej Properties' successful model.
5. Companies operating across multiple construction segments should develop segment-specific leverage guidelines rather than company-wide targets, recognizing the different risk profiles and cash flow characteristics of various project types.

5.4 Policy Recommendations

1. Public-private partnership models that reduce upfront capital requirements (like hybrid annuity models) enable construction companies to maintain healthier balance sheets while still delivering infrastructure projects.

2. Government agencies should strengthen payment security mechanisms for infrastructure projects, as payment reliability strongly influences construction companies' capital structure decisions and dividend capabilities.
3. Dividend distribution taxes should consider the capital-intensive nature of construction businesses and their need to balance growth investments with shareholder returns.

6. Conclusion

This study examined the relationship between capital structure decisions and dividend policies across four major Indian construction companies over a transformative decade (2014-2024). Our findings reveal that construction companies generally face a trade-off between financial leverage and shareholder returns, though the strength of this relationship varies based on company-specific factors including project portfolio, operational efficiency, and growth strategy. The most successful companies maintained moderate leverage while establishing dividend policies that balanced shareholder expectations with financial flexibility. Companies that temporarily exceeded sustainable leverage levels (Reliance Infrastructure) were forced to suspend dividends entirely during subsequent financial stress, while those maintaining conservative capital structures (Godrej Properties) delivered continuous, albeit lower, dividend yields throughout the period.

The construction industry's capital-intensive nature and project-based business model create unique financial management challenges that require carefully calibrated approaches to debt utilization and shareholder remuneration. As the sector continues to evolve through increasing technology adoption, sustainability requirements, and changing procurement models, financial strategies that maintain flexibility while rewarding shareholders will remain essential for long-term success.

This research contributes to understanding the complex interplay between financing decisions and shareholder returns in a critical economic sector. Future research could expand this analysis to a larger sample of construction companies, incorporate cross-country comparisons, or examine how emerging trends like green financing and digital construction technologies influence capital structure and dividend decisions in this evolving industry.

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