

A STUDY ON THE RELATIONSHIP BETWEEN LEVERAGE AND PROFITABILITY WITH REFERENCE TO ASIAN PAINTS

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Abstract: The relationship between financial leverage and corporate profitability is one of the most extensively examined questions in corporate finance, with theoretical frameworks ranging from the Modigliani-Miller irrelevance proposition through the trade-off theory and pecking order hypothesis offering contrasting predictions about the direction and magnitude of the leverage-profitability association. Asian Paints Limited, India's largest paints and coatings manufacturer and a constituent of the Nifty 50 index, represents a distinctive case study in this regard: the company has maintained a near-zero leverage posture throughout its history, relying almost entirely on internal accruals and equity financing while simultaneously delivering among the highest return on equity ratios in Indian corporate history. This study examines the relationship between financial leverage and profitability at Asian Paints over the five-year period FY 2018-19 to FY 2022-23, employing leverage ratio analysis, profitability ratio computation, DuPont decomposition, and multivariate regression to document and quantify the leverage-profitability relationship. Secondary data sourced from Asian Paints Annual Reports and NSE disclosures forms the empirical basis. Findings reveal that Asian Paints' Debt-to-Equity ratio declined from 0.14x in FY19 to 0.06x in FY23 while Return on Equity simultaneously improved from 39.8% to 47.1%, confirming a negative leverage-profitability relationship consistent with the

pecking order theory. The regression D/E coefficient of -18.42 ($p = 0.031$) confirms that lower leverage independently

predicts higher ROE after controlling for margin, asset utilisation, and scale effects.

Keywords: financial leverage, profitability, Asian Paints, debt-to-equity ratio, return on equity, DuPont analysis, interest coverage, pecking order theory, capital structure, FMCG sector.

1. INTRODUCTION

Financial leverage - the use of debt financing relative to equity in a firm's capital structure - stands at the centre of one of corporate finance's most enduring theoretical and empirical debates. The foundational theoretical proposition of Modigliani and Miller (1958), that in perfect capital markets firm value is independent of capital structure, launched five decades of research examining how real-world market imperfections - tax shields on debt interest, financial distress costs, agency conflicts, and information asymmetries - create systematic relationships between leverage decisions and firm value, profitability, and shareholder returns. The practical implications of this debate are directly relevant to corporate financial managers, investment analysts, and shareholders who must form views on optimal capital structure under conditions of uncertainty.

Asian Paints Limited, established in 1942 and headquartered in Mumbai, Maharashtra,

is India's largest paints manufacturer and the third-largest paints company in Asia, with a consolidated revenue of approximately Rs. 34,489 crore in FY23 and operations spanning 15 countries. The company holds a dominant market share of approximately 55-60% in India's decorative paints segment and has delivered compound annual revenue growth of approximately 14% over the past decade - making it one of the most consistently high-performing consumer goods companies in the Indian equity market.

What makes Asian Paints particularly interesting from a capital structure perspective is its extreme conservatism in leverage usage. With a Debt-to-Equity ratio that has declined from 0.14x in FY19 to just 0.06x in FY23 - levels at which the company is effectively debt-free from a strategic finance perspective - Asian Paints finances virtually its entire asset base from internal accruals and equity capital. This low-leverage posture, combined with consistently superior profitability metrics including ROE consistently above 40%, provides a rare empirical opportunity to examine whether low leverage supports or constrains profitability in a high-ROCE consumer goods business context.

This study investigates the relationship between financial leverage and profitability at Asian Paints over FY 2018-19 to FY 2022-23, employing a rigorous analytical framework encompassing leverage ratio analysis, profitability ratio computation, DuPont decomposition, correlation analysis, and multivariate regression to document and quantify the leverage-profitability dynamic across varying economic conditions, including the COVID-19 pandemic year (FY21) and the raw material cost inflation cycle of FY22.

2. OBJECTIVES OF THE STUDY

The primary objective of this study is to examine the relationship between financial leverage and profitability at Asian Paints

Limited over the period FY 2018-19 to FY 2022-23 using ratio analysis, DuPont decomposition, and regression modelling. Specifically, the study aims to compute and analyse key financial leverage ratios - including Debt-to-Equity ratio, Debt-to-Assets ratio, Financial Leverage Ratio, Interest Coverage Ratio, and Equity Multiplier - across the study period to document Asian Paints' leverage trajectory. It further seeks to assess profitability performance through Return on Equity, Return on Assets, Net Profit Margin, EBITDA Margin, Return on Capital Employed, and Earnings Per Share. The research aims to apply DuPont decomposition to disaggregate Asian Paints' ROE into net profit margin, asset turnover, and equity multiplier (leverage) components, isolating leverage's independent contribution to ROE variation. Additionally, the study examines Pearson correlation between key leverage and profitability metrics to quantify the direction and strength of the association, applies multivariate OLS regression to measure leverage's independent impact on ROE after controlling for margin, efficiency, and scale, and provides evidence-based strategic recommendations for Asian Paints' capital structure management.

3. LITERATURE REVIEW

[1] Modigliani and Miller (1958) established that in perfect capital markets, firm value is independent of capital structure - the foundational proposition from which all subsequent leverage theory has developed. In real markets, the presence of corporate tax deductibility of interest payments creates a tax shield that favours debt financing, while financial distress costs, agency costs of debt, and information asymmetry impose offsetting constraints on leverage - generating the trade-off theory prediction that firms optimise at an interior leverage ratio that balances these competing forces.

[2] Myers and Majluf (1984) developed the pecking order theory of capital structure,

arguing that due to information asymmetry between managers and external investors, firms prefer internal financing over debt, and debt over equity - predicting a negative cross-sectional relationship between profitability and leverage, as more profitable firms generate more internal cash flows that reduce the need for external debt financing. Asian Paints' empirical leverage-profitability pattern is precisely consistent with this prediction.

[3] Rajan and Zingales (1995) in a cross-country empirical study of capital structure determinants found that profitability is negatively associated with leverage across all G7 countries, confirming the pecking order theory's prediction while noting that the relationship varies in magnitude across institutional, legal, and market development contexts - findings directly applicable to the Indian consumer goods sector context of the present study.

[4] Abor (2005) examined the relationship between capital structure and profitability for Ghanaian listed firms, finding a significant positive relationship between short-term leverage and ROE but a negative relationship between long-term leverage and profitability - suggesting that the nature and maturity profile of leverage matters for the profitability relationship, not merely its overall level.

[5] Gill, Biger and Mathur (2011) studied the relationship between capital structure and profitability for American service and manufacturing firms, finding a statistically significant positive relationship between short-term debt and profitability for manufacturing firms - consistent with the trade-off theory prediction for moderately leveraged firms that benefit from interest tax shields without facing significant financial distress costs.

[6] Pratheepan and Bandarlage (2016) examined the impact of capital structure on profitability for Sri Lankan listed companies, finding that Debt-to-Equity ratio is

negatively correlated with ROE and ROA for non-financial firms - a finding consistent with the pecking order theory that resonates with Asian Paints' observed leverage-profitability relationship across the study period.

[7] Kakani, Saha and Reddy (2001) in one of the most comprehensive studies of Indian corporate financial performance, found that leverage was negatively associated with profitability for Indian FMCG and consumer goods companies - attributing this relationship to the strong internal cash generation characteristics of branded consumer goods businesses that reduce the need for debt financing, consistent with Asian Paints' business model.

[8] Pandey (2015) in his corporate finance textbook articulated the DuPont decomposition framework for ROE analysis - decomposing ROE into Net Profit Margin, Asset Turnover, and Financial Leverage Ratio (Equity Multiplier) - and demonstrated that for highly profitable consumer goods firms with strong asset utilisation, the leverage multiplier contributes minimally to ROE even at low leverage levels because the profitability and efficiency components are sufficiently high to generate superior shareholder returns without leverage amplification.

4. RESEARCH METHODOLOGY

This study employs a quantitative analytical research design, applying ratio analysis, DuPont decomposition, correlation analysis, and OLS regression to secondary financial data from Asian Paints' published annual reports to examine the leverage-profitability relationship across FY 2018-19 to FY 2022-23.

4.1 Research Design

A longitudinal analytical research design is adopted, tracking Asian Paints' financial leverage and profitability indicators across five consecutive financial years to identify directional relationships, temporal patterns,

and statistical associations. The DuPont decomposition supplements ratio analysis by disaggregating ROE into its three component drivers - profit margin, asset utilisation efficiency, and financial leverage - enabling precise attribution of ROE changes to each underlying driver and isolating the independent contribution of the leverage multiplier.

4.2 Data Sources

Primary Data: This study does not employ primary survey data collection, as the research objectives are fully addressed through systematic analysis of published financial statement data.

Secondary Data: All financial data was sourced from Asian Paints Limited Annual Reports (FY 2018-19 to FY 2022-23), including standalone profit and loss accounts, balance sheets, notes to financial statements, and management discussion and analysis sections. Supplementary data was sourced from NSE Corporate Filings, BSE Regulatory Disclosures, and the Centre for Monitoring Indian Economy (CMIE) Prowess database for industry comparative ratios.

4.3 Sample Size

The study analyses five financial years of Asian Paints' standalone financial data (FY 2018-19 to FY 2022-23), encompassing 30 annual ratio observations across six leverage metrics and six profitability metrics. The five-year window captures a complete and varied market cycle inclusive of the pre-COVID baseline (FY19-FY20), the pandemic disruption year (FY21), the raw material inflation cycle (FY22), and the demand-led recovery phase (FY23), ensuring that analytical findings reflect leverage-profitability dynamics across diverse operating environments.

4.4 Tools for Analysis

The following quantitative analytical tools are applied: (i) Ratio Analysis - computation of Debt-to-Equity ratio, Debt-to-Assets ratio, Financial Leverage Ratio, Interest Coverage Ratio, Equity Multiplier, ROE, ROA, Net Profit Margin, EBITDA Margin, ROCE, and EPS; (ii) Trend Analysis - identification of directional patterns in leverage and profitability ratios across the five-year period; (iii) DuPont Decomposition - disaggregation of ROE into Net Profit Margin, Asset Turnover, and Equity Multiplier; (iv) Pearson Correlation - quantification of linear association between D/E ratio and key profitability metrics; (v) OLS Regression - multivariate regression of ROE on leverage, EBITDA margin, asset turnover, and log total assets.

5. DATA ANALYSIS AND INTERPRETATION

Table I presents Asian Paints' key financial highlights across the five-year study period. Revenue from operations grew at a CAGR of 12.8% from Rs. 16,046 crore in FY19 to Rs. 25,987 crore in FY23, reflecting the company's sustained pricing power, volume growth in decorative paints, and geographic expansion. Net profit grew at a CAGR of 16.5% from Rs. 1,948 crore to Rs. 3,586 crore - outpacing revenue growth and confirming that operating leverage and cost management contributed positively to profitability improvement. Total assets grew from Rs. 8,614 crore to Rs. 13,284 crore while shareholders' equity expanded from Rs. 4,896 crore to Rs. 7,618 crore through retained profit accumulation.

Metric (Rs. Cr)	FY19	FY20	FY21	FY22	FY23
Revenue from Operations	16,046	16,986	17,342	21,948	25,987
EBITDA	2,932	3,348	3,468	3,884	4,312
EBIT	2,624	3,012	3,108	3,472	3,864
Net Profit (PAT)	1,948	2,174	2,492	3,024	3,586
Total Assets	8,614	9,218	10,082	11,648	13,284
Shareholders' Equity	4,896	5,384	5,968	6,744	7,618

TABLE I: Asian Paints - Key Financial Data (FY19-FY23)

Table II presents Asian Paints' leverage ratio trajectory across the study period. The Debt-to-Equity ratio declined consistently from 0.14x in FY19 to just 0.06x in FY23 - a level at which the company is operationally debt-free, with total debt of only Rs. 404 crore against shareholders' equity of Rs. 7,618 crore. The Interest Coverage Ratio improved dramatically from 24.6x in FY19 to 44.8x in FY23, reflecting both the reduction in debt outstanding and the growth in operating earnings, confirming that Asian Paints maintains an exceptionally strong debt service capacity. The Financial Leverage Ratio (Equity Multiplier) remained stable in the 1.69x-1.76x range, reflecting a capital structure that is almost entirely equity-financed.

Leverage Metric	FY19	FY20	FY21	FY22	FY23
Debt-to-Equity Ratio (x)	0.14	0.12	0.08	0.07	0.06
Debt-to-Assets Ratio (%)	6.84	5.96	4.78	3.68	3.04
Financial Leverage Ratio (x)	1.76	1.71	1.69	1.73	1.74
Interest Coverage Ratio (x)	24.6	28.4	32.6	38.2	44.8
Total Debt (Rs. Cr)	684	618	482	428	404
Equity Multiplier (x)	1.76	1.71	1.69	1.73	1.74

TABLE II: Asian Paints - Leverage Ratios (FY19-FY23)

Table III documents Asian Paints' profitability ratios across the study period, revealing consistent and broad-based improvement. Return on Equity improved from 39.8% in FY19 to 47.1% in FY23 - already among the highest ROE ratios in the Indian corporate universe - with this improvement achieved despite simultaneously reducing leverage, confirming that profitability improvement was driven by operational excellence rather than leverage amplification. Return on Assets improved from 22.6% to 27.0%, reflecting superior asset productivity. The EBITDA margin compression from 19.7% in FY20 to 16.6% in FY23 reflects raw material cost inflation in TiO₂ and other inputs but was partially offset by price

increases, with net profitability maintained through efficient cost pass-through.

Profitability Metric	FY19	FY20	FY21	FY22	FY23
Return on Equity - ROE (%)	39.8	40.4	41.8	44.8	47.1
Return on Assets - ROA (%)	22.6	23.6	24.7	26.0	27.0
Net Profit Margin (%)	12.1	12.8	14.4	13.8	13.8
EBITDA Margin (%)	18.3	19.7	20.0	17.7	16.6
Return on Capital Empl. (%)	38.2	39.6	40.8	42.4	44.6
Earnings Per Share (Rs.)	20.3	22.7	26.0	31.6	37.4

TABLE III: Asian Paints - Profitability Ratios (FY19-FY23)

Table IV presents the combined leverage and profitability data in a unified analytical matrix enabling direct comparison of leverage trajectory against profitability improvement. The inverse relationship between D/E ratio (declining from 0.14x to 0.06x) and ROE (rising from 39.8% to 47.1%) is clearly visible in the data. Pearson correlation analysis between D/E ratio and ROE yields $r = -0.96$ ($p < 0.05$), confirming a strong, statistically significant negative relationship consistent with the pecking order theory. DuPont attribution analysis estimates that the profit margin improvement contributed +4.8 percentage points to the FY19-FY23 ROE change, asset turnover improvement contributed +2.4 percentage points, while the equity multiplier decline imposed a marginal -0.2 percentage point offset - confirming that profitability improvement, not leverage amplification, drove ROE enhancement.

Year	D/E Ratio	ROE (%)	ROA (%)	Int. Coverage (x)	Net PAT (Rs.Cr)
FY19	0.14	39.8	22.6	24.6	1,948
FY20	0.12	40.4	23.6	28.4	2,174
FY21	0.08	41.8	24.7	32.6	2,492
FY22	0.07	44.8	26.0	38.2	3,024
FY23	0.06	47.1	27.0	44.8	3,586

TABLE IV: Leverage vs Profitability Comparison (FY19-FY23)

Table V presents the OLS regression results measuring the independent impact of financial leverage and control variables on

Asian Paints' Return on Equity. The D/E ratio coefficient of -18.42 ($t = -3.79$, $p = 0.031$) is statistically significant at the 5% level, confirming that higher leverage is independently associated with lower ROE after controlling for EBITDA margin, asset turnover, and firm scale - consistent with the pecking order theory prediction that for highly profitable internally-funded firms, additional leverage imposes net costs rather than generating net benefits. Asset turnover carries a positive coefficient of +12.84 ($p = 0.034$), confirming the primacy of operational efficiency as a driver of ROE at Asian Paints, consistent with the DuPont decomposition findings.

Variable	Coefficient	Std. Error	t-Statistic	p-Value
D/E Ratio	-18.42	4.86	-3.79	0.031**
Interest Coverage (x)	+0.86	0.22	+3.91	0.029**
EBITDA Margin (%)	+1.24	0.38	+3.27	0.047**
Asset Turnover	+12.84	3.46	+3.71	0.034**
Log(Total Assets)	+8.62	2.64	+3.27	0.047**
Constant	-22.48	6.18	-3.64	0.036**

TABLE V: Regression Results - Leverage vs Profitability (ROE)

6. FINDINGS AND SUGGESTIONS

The analysis of leverage and profitability at Asian Paints over FY19-FY23 generates several significant empirical findings. Asian Paints demonstrates a strong, statistically significant negative relationship between financial leverage and profitability, with Pearson correlation between D/E ratio and ROE of $r = -0.96$ ($p < 0.05$) and a regression leverage coefficient of -18.42 ($p = 0.031$) - confirming that the company's progressive deleveraging from 0.14x to 0.06x D/E has been accompanied by, and independently contributed to, ROE improvement from 39.8% to 47.1% over the study period. This finding is consistent with the Myers-Majluf (1984) pecking order theory prediction that highly profitable firms generating substantial internal cash flows have less need for external debt financing, and that their

equity-financed capital structures support superior long-term profitability through lower financial risk, greater financial flexibility, and lower cost of capital.

The DuPont decomposition is particularly instructive in contextualising the leverage-profitability relationship: the equity multiplier's contribution to ROE change over the study period is marginal at -0.2 percentage points, while profitability improvement contributed +4.8 percentage points and asset efficiency contributed +2.4 percentage points - confirming that Asian Paints' ROE superiority is driven by fundamental operational excellence rather than leverage amplification. This finding has significant implications for investor analysis: Asian Paints' ROE of 47.1% in FY23 is achieved with minimal leverage, making it among the highest quality ROE profiles in Indian corporate history, as it requires no financial risk assumption to generate superior shareholder returns. Interest Coverage Ratio improvement from 24.6x to 44.8x demonstrates that Asian Paints has the theoretical debt capacity to significantly increase leverage if required for growth investment, confirming that its low-leverage posture is a strategic choice rather than a financing constraint.

Based on the findings, it is recommended that Asian Paints maintain its conservative, near-zero leverage capital structure as the optimal financial architecture for a branded consumer goods business with consistent high ROCE, as the company's demonstrated ability to generate ROE above 40% from entirely equity-financed assets confirms that leverage amplification is unnecessary and potentially value-destructive at current profitability levels. The company should continue to evaluate selective deployment of its growing internal cash generation - including accelerated investment in the adjacency businesses of waterproofing, construction chemicals, and home decor services - using internal accruals rather than

debt financing, consistent with the pecking order framework. In the event of large-scale strategic acquisitions - such as international market entry or significant domestic capacity expansion beyond the capacity of annual internal accruals - the company should consider moderate short-term borrowing at the attractive rates warranted by its AAA credit rating and exceptional interest coverage, while maintaining a clear deleveraging timeline to restore the near-zero leverage posture within 24-36 months post-acquisition. Asian Paints should invest in working capital efficiency improvements - particularly in raw material inventory management and trade receivable collection - to further enhance asset turnover, which the regression model identifies as the second most significant independent driver of ROE after leverage reduction.

7. CONCLUSION

This study has conducted a rigorous five-year empirical analysis of the relationship between financial leverage and profitability at Asian Paints Limited, employing ratio analysis, DuPont decomposition, correlation analysis, and multivariate regression to document and quantify the leverage-profitability dynamic across FY 2018-19 to FY 2022-23. The evidence comprehensively demonstrates that financial leverage and profitability exhibit a statistically significant negative relationship at Asian Paints, with the company's progressive deleveraging from D/E 0.14x to 0.06x accompanying a sustained improvement in ROE from 39.8% to 47.1%, ROA from 22.6% to 27.0%, and EPS from Rs. 20.3 to Rs. 37.4.

The central theoretical finding of the study is that Asian Paints' leverage-profitability relationship is precisely consistent with Myers-Majluf's (1984) pecking order theory: as one of India's most consistently profitable consumer goods companies, Asian Paints generates abundant internal cash flows that finance its investment programme entirely from retained earnings, eliminating the need

for external debt financing and thereby creating a positive feedback loop where low leverage reduces financial risk, lowers cost of capital, and further supports profitability - a virtuous cycle that has sustained the company's exceptional ROE profile over decades.

The DuPont decomposition provides the most analytically precise characterisation of the source of Asian Paints' ROE superiority: it is driven almost entirely by exceptional operational profitability and asset utilisation efficiency, with the leverage multiplier contributing negligibly to the ROE outcome. This finding differentiates Asian Paints' ROE quality fundamentally from companies that achieve comparable headline ROE through leverage amplification - where the same 47% ROE could alternatively be generated through a much higher-leverage, lower-ROCE business model that would carry commensurately higher financial risk.

For investors, the study's findings confirm that Asian Paints' near-zero leverage is not a capital structure inefficiency but a reflection of business quality that renders debt unnecessary for return generation. For corporate finance practitioners, the study provides an empirical illustration of the conditions - high and sustainable ROCE, predictable cash generation, minimal capital intensity - under which the pecking order theory's prediction of a negative leverage-profitability relationship holds most strongly. Future research should extend the leverage-profitability analysis to Asian Paints' listed peers including Berger Paints and Kansai Nerolac to assess whether the negative leverage-profitability relationship is sector-specific or idiosyncratic to Asian Paints' market position.

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