

## Capital Structure and Firm Profitability: A Systematic Literature Review

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### ABSTRACT

This paper presents a systematic literature review of the relationship between capital structure and firm profitability. Drawing on foundational theory, including the Modigliani-Miller irrelevance and tax-adjusted propositions, trade-off theory, pecking order theory and agency cost theory, alongside empirical studies from developed markets (the United States, France, the G7 economies), emerging markets (Ghana, Jordan, Egypt, Vietnam) and cross-country panels, the review synthesises evidence on how leverage relates to profitability measures such as return on assets, return on equity and Tobin's Q. The findings show no single, generalisable relationship: some studies report a positive association consistent with the disciplining role of debt under agency theory (Margaritis & Psillaki, 2010; Abor, 2005), others report a negative association consistent with financial distress and pecking order behaviour (Zeitun & Tian, 2007) and still others find no statistically significant relationship at all (Ebaid, 2009). The review further identifies firm size, asset tangibility, ownership structure, industry classification and macroeconomic conditions as key moderating factors and highlights recurring methodological gaps, including short panel windows, unresolved endogeneity between capital structure and performance and limited sector-level disaggregation. The review concludes that future systematic work should treat the capital structure-profitability relationship as context-dependent rather than search for a single universal effect and should prioritise longer panels, causal identification strategies and industry-specific analysis.

**Key Words:** capital structure, firm profitability, leverage, trade-off theory, pecking order theory, agency theory.

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## INTRODUCTION

The relationship between capital structure and firm profitability remains one of the most extensively investigated, yet unresolved, questions in corporate finance. Since the seminal irrelevance proposition of Modigliani and Miller (1958), researchers have sought to determine whether and how, the mix of debt and equity that a firm uses to finance its assets influences its financial performance. Capital structure decisions matter because they determine a firm's exposure to financial risk, its cost of capital, its tax position and ultimately its capacity to generate returns for shareholders (Khadka, 2007; Gitman, 1994). Poorly balanced financing choices can expose firms to liquidity and solvency difficulties, while an efficient mix of debt and equity can lower the overall cost of capital and enhance value (Modugu, 2013).

Despite more than six decades of theoretical development and empirical testing, no consensus theory exists that managers can rely on to identify an optimal capital structure (Serrasqueiro & Caetano, 2014; the effect of capital structure on profitability, 2019). Empirical findings range from strongly positive, to strongly negative, to statistically insignificant and this inconsistency appears to depend on institutional context, industry, firm size, the time period examined and the specific proxies used for leverage and profitability (Ferdous, 2019). This review synthesises the theoretical foundations of capital structure research and the empirical evidence linking capital structure to firm profitability, drawing on studies from developed, emerging and frontier markets, in order to identify patterns, points of disagreement and gaps that justify further systematic inquiry.

## THEORETICAL FRAMEWORK

- a) **The Modigliani–Miller Irrelevance Proposition:** The modern theory of capital structure originates with Modigliani and Miller (1958), who argued that, under the restrictive assumptions of a perfect capital market with no taxes, no transaction costs and symmetric information, the value of a firm is determined solely by its underlying earning power and asset risk, not by how those assets are financed. Under these conditions, the choice between debt and equity is irrelevant to firm value and by extension to profitability once financing costs are properly accounted for. Modigliani and Miller (1963) later revised the model to incorporate corporate taxes, showing that because interest payments are tax-deductible, firm value should in fact rise with leverage as debt use increases the after-tax cash flow available to shareholders. Because real capital markets are imperfect, subsequent theory has relaxed the original assumptions to explain the financing patterns actually observed in practice (Le & Phan, 2017; capital structure theories and its practice, 2023).
- b) **Trade-off Theory:** Trade-off theory extends the tax-adjusted Modigliani-Miller framework by weighing the tax benefits of debt against the costs of financial distress and bankruptcy that rise as leverage increases. Firms are expected to pursue a target debt ratio at which the marginal tax shield from an additional unit of debt is offset by the marginal expected cost of distress. The theory implies that firms with more tangible, collateralisable assets and stable, high-quality cash flows can sustain more debt, whereas firms with volatile earnings or high business risk should rely more on equity (capital structure and the profitability of a firm, 2023). Trade-off reasoning is frequently invoked to justify the expectation of a positive, though bounded, relationship between leverage and profitability, since moderate borrowing lowers the cost of capital while

excessive borrowing erodes returns through distress costs (the effect of capital structure on profitability, 2019).

- c) **Pecking Order Theory:** The pecking order theory, developed by Myers and Majluf (1984) and formalised further by Myers (1984), rests on information asymmetry between managers and outside investors. Because external financing is subject to adverse-selection costs, firms are assumed to prefer internal funds first, then debt and only issue new equity as a last resort. Under this theory, profitable firms accumulate more retained earnings and therefore borrow less, implying an inverse relationship between profitability and leverage that runs opposite to the prediction of trade-off theory. This theoretical tension between the two dominant frameworks is a central reason why empirical studies frequently reach conflicting conclusions about how capital structure affects, or is affected by, profitability (Zeitun & Tian, 2007; Frank & Goyal, 2009).
- d) **Agency Cost Theory:** Agency theory, rooted in the work of Jensen and Meckling (1976), frames capital structure as a mechanism for mitigating conflicts of interest between managers, shareholders and creditors. Debt can discipline managers by committing the firm to fixed interest payments, thereby reducing the free cash flow available for value-destroying discretionary spending (Jensen, 1986) and by allowing owners to monitor managerial performance through the firm's gearing level (Jensen & Meckling, 1976). At the same time, high leverage can generate its own agency costs, since shareholders may have an incentive to undertake riskier projects that transfer wealth from creditors and creditors respond by pricing this risk into the cost of debt. Agency theory therefore predicts a more nuanced, potentially non-linear, relationship between leverage and profitability that depends on ownership concentration and the effectiveness of corporate governance (Ownership Structure Variation and Firm Efficiency, n.d.; Margaritis & Psillaki, 2010).
- e) **Market Timing and Other Perspectives:** More recent theoretical contributions, including market timing theory, suggest that managers issue equity when share prices are perceived to be overvalued and repurchase or use debt when shares are undervalued, meaning that observed capital structures partly reflect the cumulative outcome of past attempts to time the market rather than a deliberate target ratio. Alongside the static trade-off, pecking order and agency-cost explanations, market timing and dynamic trade-off models illustrate that capital structure theory has moved from a single unifying explanation toward a set of complementary, sometimes competing, perspectives, none of which alone is fully able to explain observed financing behaviour across firms and countries (capital structure theories and its practice, 2023; the effect of capital structure on profitability, 2019).

## EMPIRICAL LITERATURE REVIEW

- **Evidence of a Positive Relationship:** A substantial body of empirical work reports a positive association between leverage and profitability, generally interpreted as consistent with trade-off and agency-cost reasoning. Using data envelopment analysis on a sample of French manufacturing firms, Margaritis and Psillaki (2010) measured firm performance as productive efficiency and found that leverage was significantly and positively related to efficiency, particularly among firms with concentrated ownership, supporting the disciplining role of debt predicted by agency theory. Abor (2005), studying listed non-financial firms on the Ghana Stock Exchange over a five-year period, found a significantly positive relationship between short-term

debt to total assets and return on equity and a significantly positive relationship between total debt and return on equity as well, although long-term debt was negatively related to profitability, which the author attributed to the relatively high cost and agency conflicts associated with long-term borrowing. Related studies summarised in subsequent Ghanaian research corroborate the positive short-term debt effect while noting that the strength and even the sign of the total-debt relationship can shift when the sample period or dataset changes (Capital structure and the profitability of a firm, 2023).

- Further support for a positive leverage-performance link comes from cross-country and sector-specific studies. Evidence collated in recent reviews indicates that Berger and Bonaccorsi di Patti's (2006) analysis of the United States banking industry and Margaritis and Psillaki's (2007) study of New Zealand small and medium-sized enterprises, both found favourable effects of debt on efficiency-based performance measures, a pattern that a 2007 French study later replicated using a directional distance function approach (Capital structure and corporate performance, evidence from Jordan, scite summary). More recent quantile and fixed-effects analyses of firms across the Middle East and North Africa region likewise report a positive correlation between capital structure ratios and corporate performance once endogeneity is addressed through dynamic panel estimators, a result the authors describe as broadly consistent with findings from advanced economies (Capital structure and performance nexus, 2024).
- **Evidence of a Negative Relationship:** An equally substantial stream of research finds that leverage erodes rather than enhances profitability, a pattern more consistent with pecking order and financial-distress reasoning. Zeitun and Tian (2007), using panel data on 167 Jordanian companies between 1989 and 2003, found that capital structure had a significantly negative effect on both accounting-based and market-based performance measures, although short-term debt was positively related to the market-based Tobin's Q measure, which the authors linked to the higher growth expectations associated with firms relying on short-term financing. Similarly, Abor's (2005) own Ghanaian findings regarding long-term debt and later replications in the Ghanaian insurance sector, reveal a persistent negative relationship between long-term borrowing and profitability across multiple institutional settings (Capital structure and the profitability of a firm, 2023).
- Cross-national syntheses reinforce this pattern: earlier studies by Majumdar and Chhibber (1999), Eriotis et al. (2002), Ngobo and Capiez (2004), Goddard et al. (2005), Rao et al. (2007) and Zeitun and Tian (2007) are collectively cited as evidence of a negative effect of debt on profitability, while other researchers such as Berger and Bonaccorsi di Patti (2006) and Margaritis and Psillaki (2007, 2010) are cited on the opposite, positive side of the debate, illustrating how the balance of evidence differs by sample and method even within the same review article (Capital structure and corporate performance, evidence from Jordan, scite summary). Additional support for an inverse relationship is documented for Sri Lankan firms, where capital structure was found to be negatively associated with financial performance during the 2005-2009 period (Capital Structure and Firm Performance of Listed Non-Financial Companies in Bangladesh, 2015).
- **Evidence of No Significant Relationship:** A third strand of the literature finds that capital structure choice has little or no measurable effect on firm performance, a result more aligned with the original Modigliani-Miller irrelevance proposition once market imperfections are judged to

be immaterial in the sample studied. Ebaid (2009), examining a sample of Egyptian non-financial listed firms from 1997 to 2005 using return on assets, return on equity and gross profit margin, concluded that capital structure choice has, in general terms, a weak-to-no impact on firm performance, although a negative relationship with return on assets was detected. This finding has since become one of the most frequently cited examples of the irrelevance perspective in emerging-market capital structure research and has been replicated in spirit by studies of UK hotel companies and by Al-Taani (2013) for other emerging contexts (Inverted U-shaped dynamics of capital structure and firm value, 2025; The Relationship between Capital Structure and Firm Performance, the Moderating Role of Agency Cost, 2023).

- **Cross-Country and Determinants-Focused Evidence:** Beyond the direct leverage-profitability link, an influential line of research has examined the determinants of capital structure itself across countries, providing indirect evidence on how far theory travels outside the United States. Rajan and Zingales (1995), analysing the financing decisions of public firms in the G7 industrialised countries, found that firm leverage was broadly similar across countries and that the cross-sectional correlates of leverage identified in United States studies, such as tangibility, size, profitability and market-to-book ratio, held in other developed economies as well, even though the theoretical mechanisms underlying those correlations remained unresolved. This finding has motivated numerous replications in emerging and transition economies, including Ghana (Abor & Biekpe, 2005), Pakistan (Ahmed Sheikh & Wang, 2011), Saudi Arabia (Al-Sakran, 2001) and China (Huang & Song, 2006), most of which confirm that profitability is a robust, usually negative, correlate of leverage, consistent with pecking order behaviour even in markets with very different institutional and tax environments.
- Studies from Vietnam add further nuance by combining agency-theoretic reasoning with liquidity effects: using regression analysis on 300 Vietnamese listed firms between 2012 and 2018, researchers found that both return on equity and return on assets were associated with liquidity and debt levels, while noting that results in the Vietnamese context are sensitive to the time frame chosen, since years affected by unusually high interest rates produced markedly different outcomes than longer, more stable panels (Relationship between Capital Structure and Firm Profitability, Evidence from Vietnamese Listed Companies, 2023).
- **Determinants and Moderating Factors:** The empirical literature identifies a consistent set of firm-level determinants that shape both capital structure choice and its profitability implications, including firm size, asset tangibility, growth opportunities, non-debt tax shields, liquidity, business risk and industry classification, several of which are industry-specific rather than universal (Tornyeva, 2013; Ramli et al., 2019; Khan et al., 2021; Li & Islam, 2019). Titman and Wessels (1988) found that leverage correlates positively with non-debt tax shields, fixed-asset intensity, firm size and growth opportunities, but correlates negatively with profitability, a result frequently cited as early cross-sectional support for pecking order behaviour. Ownership structure and corporate governance quality are also shown to moderate the leverage-performance relationship: board composition and ownership concentration have been found to influence firm performance indirectly through their effect on the debt-to-equity ratio, suggesting that governance quality conditions whether debt functions as a disciplining device or as a source of additional agency cost (Request PDF, effect of capital structure on profitability). More recent studies also point to a possible non-linear or inverted U-shaped relationship, in which moderate leverage

improves performance up to a threshold beyond which further borrowing becomes value-destroying, a pattern reported for several emerging-market samples (Inverted U-shaped dynamics of capital structure and firm value, 2025).

## RESEARCH GAPS AND DIRECTIONS FOR FUTURE RESEARCH

Several gaps emerge from this review that are directly relevant to a systematic literature review on this topic. First, the theoretical literature has not converged on a single, generally accepted model of optimal capital structure and empirical findings remain highly sensitive to country context, industry and the specific accounting- or market-based profitability proxy used, which complicates efforts to generalise results across settings (the effect of capital structure on profitability, 2019; Ferdous, 2019). Second, much of the empirical evidence, particularly from Sub-Saharan Africa and other frontier markets, is concentrated in short panels of three to ten years and may not adequately capture the effect of macroeconomic shocks or interest-rate cycles on the leverage-profitability relationship (Core, capital structure and solvency of manufacturing firms, evidence from Ghana). Third, most studies treat the direction of causality as running from capital structure to performance, whereas a smaller but growing body of work highlights that more efficient or profitable firms may themselves choose their leverage level, creating a bidirectional or endogenous relationship that ordinary least squares regressions do not fully address (Margaritis & Psillaki, 2010; Berger & Bonaccorsi di Patti, 2006, as cited in Capital Structure Equity Ownership and Firm Performance, Request PDF). Finally, comparatively few studies examine industry-specific or sector-specific channels in depth, despite evidence that determinants of capital structure vary meaningfully across industries (Li & Islam, 2019), suggesting that future systematic reviews and meta-analyses would benefit from disaggregating findings by sector, ownership type and institutional environment rather than treating firms as a homogeneous population.

## CONCLUSION

The literature on capital structure and firm profitability has evolved considerably since Modigliani and Miller's (1958) original irrelevance proposition, producing a rich but fragmented body of theory and evidence. Trade-off theory, pecking order theory and agency cost theory each offer plausible, partially competing explanations for why and how financing decisions might influence profitability and empirical studies from Ghana, Jordan, Egypt, France, Vietnam, the G7 economies and elsewhere variously support positive, negative and statistically insignificant relationships depending on context, methodology and the measures employed. This lack of consensus is itself an important finding: it indicates that the relationship between capital structure and profitability is not universal but is instead conditioned by institutional, industry and firm-specific factors. For a systematic literature review, this body of evidence suggests that future synthesis work should pay close attention to moderating variables, endogeneity and contextual heterogeneity rather than searching for a single, generalizable effect size.

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