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Leverage and Financial Performance of Tunisian Quoted Firms: A Narrative Review

Original Article

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Abstract

This narrative review examines how leverage affects the financial performance of Tunisian quoted firms, emphasizing evidence from the last five years and outcomes such as profitability, valuation, liquidity, solvency, and stability. The central finding is that recent evidence is fragmented and does not support a universal leverage effect: some Tunisia-related banking studies suggest that debt-to-assets or solvency may support profitability, while other studies associate leverage with weaker resilience, higher instability, or poorer outcomes under uncertainty. A major result is evidentiary absence: the 2020 2025 corpus contains few direct Tunisia-specific studies on quoted non-financial firms estimating leverage effects on ROA, ROE, or Tobin's Q, so the literature is stronger for banks than for non-financial listed companies. Debt maturity is conceptually important, yet recent Tunisian listed-firm studies do not provide direct short-term versus long-term debt coefficient comparisons for core performance measures. Taken together, the findings suggest that leverage performance effects in Tunisia are context-sensitive and are likely shaped by firm size, ownership type, sector, governance conditions, and macro-political uncertainty rather than by leverage alone.

Keywords: Leverage, Financial Performance, Tunisian Quoted Firms, Debt Maturity, Narrative Review

1. Introduction

Capital structure decisions matter because they shape financing flexibility, risk exposure, profitability, and market confidence, especially in settings marked by uncertainty, liquidity pressure, and uneven market development (Khalfaoui & Guenichi, 2022; Ben Abdallah & Bahloul, 2025; Hunjra et al., 2022). In Tunisia, recent evidence indicates that bank and firm outcomes are sensitive not only to leverage itself but also to solvency, governance quality, market instability, and credit conditions (Zidi & Hamdi, 2024; Jmaii et al., 2024; Ben Salem et al., 2024).

For Tunisian quoted firms, performance is commonly discussed through accounting and market indicators such as ROA, ROE, and Tobin's Q (El Ammari & Terzi, 2023; Mezni & Ati, 2023). Yet the empirical literature directly linking leverage ratios to those outcomes is fragmented, especially for quoted non-financial firms (Theiri et al., 2022; El Ammari & Terzi, 2023; Brahim et al., 2025). Much of the directly relevant Tunisian evidence instead focuses on banks, earnings management, governance, analyst behavior, or tax outcomes rather than the core leverage profitability nexus (Theiri et al., 2022; Chalavas et al., 2025).

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This review therefore addresses a practical research problem: how far can recent evidence support conclusions about the effect of leverage on the financial performance of Tunisian quoted firms? The answer, based on the available studies, is that leverage matters, but its effect is non-uniform and cannot yet be pinned down cleanly for Tunisian quoted non-financial firms using recent direct evidence (Zidi & Hamdi, 2024; Theiri et al., 2022; Khalfaoui & Guenichi, 2022).

2. Literature Review

2.1. Theoretical Foundations

Three core theories organize the literature on leverage and financial performance. Agency theory frames debt as a possible governance device because creditor pressure may constrain managerial opportunism, but too much debt can also intensify conflict and rigidity (Jensen & Meckling, 1976). Pecking-order theory predicts financing choices based on information asymmetry rather than a fixed optimal leverage level, suggesting firms prefer internal financing first, then debt, then equity (Myers & Majluf, 1984). Trade-off theory treats leverage as a balance between benefits such as tax shields and costs such as financial distress, predicting an interior optimum (Harris & Raviv, 1991; Myers, 1977).

In applied terms, these theories imply opposite empirical predictions. Debt may improve performance by disciplining managers or supporting operations, but it may also reduce performance by increasing distress risk, tightening liquidity, or amplifying shocks (Khalfaoui & Guenichi, 2022; Jensen & Meckling, 1976; Harris & Raviv, 1991). This theoretical ambiguity helps explain why the Tunisian and comparator evidence does not converge on a single effect (Zidi & Hamdi, 2024; Ayoush et al., 2021; Dsouza et al., 2025). Recent Tunisia-related evidence invokes these theories often, but mechanism testing is thin. Studies more commonly estimate direct leverage associations or adjacent outcomes such as earnings management, tax behavior, or entrenchment instead of modeling mediation through tax shields, agency-cost reduction, or distress costs (Zidi & Hamdi, 2024; Theiri et al., 2022; Omri et al., 2025; Dakhli & Mitraoui, 2023).

2.2. Tunisian Evidence on Leverage and Performance

The strongest direct Tunisian evidence in the reviewed set comes from banking studies. These studies suggest that capital structure matters materially for performance: debt-to-assets can be positively associated with bank performance, while equity-to-assets can be negatively associated in some specifications (Zidi & Hamdi, 2024). Governance also matters, with better governance associated with stronger profitability and market performance in listed banks (Jmaii et al., 2024).

However, this cannot be generalized without caution. Other evidence links leverage to volatility, slower growth, or weaker outcomes under instability (Khalfaoui & Guenichi, 2022; Ben Salem et al., 2024; Trabelsi, 2024). For quoted non-financial firms, the direct 2020 2025 evidence is notably sparse; the closest listed-firm studies address earnings management or causality among governance and performance variables rather than estimating leverage effects on ROA, ROE, or Tobin's Q directly (Theiri et al., 2022; El Ammari & Terzi, 2023).

Comparator evidence reinforces this non-uniform pattern. Ghanaian listed firms show positive associations of short-term and total debt with ROE but negative effects of long-term debt, whereas Egyptian evidence shows weak overall effects and Indian evidence shows negative leverage performance links (Abor, 2005; Ebaid, 2009; Majumdar & Chhibber, 1999).

2.3. Debt Maturity, Liquidity, and Solvency

The literature distinguishes short-term debt from long-term debt conceptually even where recent Tunisian direct estimates are absent. Short-term debt is associated with liquidity strain, near-term payment pressure, and rollover risk (Bose et al., 2020; Liu et al., 2021). Long-term debt is treated more as a solvency and structural financial-risk issue, often captured through debt-to-assets, debt-to-equity, or repayment-capacity ratios (Dorigoni & Anzalone, 2024; Kim & Upneja, 2021).

For Tunisia, the problem is not conceptual ambiguity but missing direct tests: the recent listed-firm studies do not compare short-term and long-term debt coefficients for profitability, market valuation, or solvency (Beldi et al., 2024; Moalla, 2025). Still, adjacent evidence suggests liquidity and solvency are important for Tunisian bank profitability, and risk intensification can damage outcomes (Ben Abdallah & Bahloul, 2025; Hunjra et al., 2022; Ben-Ahmed et al., 2023).

2.4. Moderators and Heterogeneity

A consistent pattern across the evidence is heterogeneity. Size matters: comparator MENA evidence suggests leverage may hurt smaller firms while becoming less harmful or even beneficial after a threshold (Omri et al., 2025; Attia et al., 2023). Sector also matters: in Tunisian listed firms, leverage is a stronger driver of cash-holding behavior in financial firms, while industrial firms are more influenced by size and dividend yield (Daadaa & Daadaa, 2026).

Ownership and uncertainty also matter in banks. Under economic policy uncertainty, state-owned banks appear to suffer larger risk and return deterioration overall, while highly leveraged private banks also experience sharp performance declines (Khalfaoui & Guenichi, 2022). Distributional evidence further suggests that public and private ownership do not affect bank performance identically (Alouane et al., 2026).

3. Methods

This study uses a narrative review design rather than a meta-analysis because the available recent evidence is heterogeneous in samples, outcomes, leverage proxies, and estimation strategies, and because directly matching Tunisia-specific non-financial studies are limited (Omri et al., 2025; Aloulou et al., 2023; Hbaieb et al., 2026; Abaab et al., 2025).

3.1. Search Logic and Inclusion

The review prioritizes studies from the last five years that address Tunisia-specific leverage, capital structure, liquidity, solvency, governance, and performance in quoted firms or banks; where direct Tunisian evidence is absent, closely comparable emerging-market evidence is used to contextualize likely mechanisms and boundary conditions (Abor, 2005; Theiri et al., 2022; El Ammari & Terzi, 2023; Ebaid, 2009).

3.2. Coding Strategy

The reviewed studies were coded by: (a) leverage proxy (debt-to-assets, equity-to-assets, debt-to-equity, total debt, short-term debt, long-term debt) (Zidi & Hamdi, 2024; Dorigoni & Anzalone, 2024; Al Naim et al., 2026); (b) performance outcome (ROA, ROE, Tobin's Q, solvency, stability, earnings quality) (Theiri et al., 2022; Mezni & Ati, 2023; Alouane et al., 2022); (c) sample type (banks, listed firms, financial vs industrial sectors, comparator markets) (Khalfaoui & Guenichi, 2022; Daadaa & Daadaa, 2026); and (d) methods (FE/RE,

PCSE, 2SLS, threshold models, dynamic panels, robustness checks) (Zidi & Hamdi, 2024; Theiri et al., 2022; Alouane & Haddou, 2026; Kijkasiwat et al., 2022).

3.3. Synthesis Approach

The synthesis is thematic, organized around five questions: direct leverage performance evidence, debt maturity, mechanisms, heterogeneity, and methods (Omri et al., 2025; Abaab et al., 2025). Because the direct Tunisia-specific non-financial evidence is weak, conclusions are stated cautiously and comparator evidence is clearly distinguished from direct evidence (Theiri et al., 2022; Beldi et al., 2024).

4. Results and Discussion

4.1. Summary of the Recent Evidence Base

Table 1 summarizes the recent evidence base by stream, strength, and citation.

Table 1. Summary of the Recent Evidence Base

Evidence stream	What it shows	Strength for the review question	Citations
Tunisian listed banks	Capital structure, solvency, governance, and uncertainty affect performance; some models report positive debt-to-assets effects.	Stronger direct evidence	Zidi & Hamdi (2024); Jmaii et al. (2024)
Tunisian quoted non-financial firms	Direct recent leverage → ROA/ROE/Tobin's Q tests are largely missing; adjacent studies examine earnings management, recommendations, taxes, or entrenchment.	Weak direct evidence	Theiri et al. (2022); El Ammari & Terzi (2023); Dakhli & Mitraoui (2023)
Debt maturity evidence	Theoretically important, but recent Tunisian listed-firm coefficient-level comparisons are absent.	Weak direct evidence	Beldi et al. (2024); Bose et al. (2020); Moalla (2025)
Emerging-market comparators	Effects differ by country, debt type, and firm conditions.	Contextual evidence	Abor (2005); Ebaid (2009); Majumdar & Chhibber (1999); Husin & Pinjaman (2024)

4.2. Direct Leverage Performance Results

The most direct Tunisia-related performance results come from banks, where debt-to-assets and solvency variables are sometimes reported as supportive of profitability, while equity-heavy structures may be associated with weaker performance in some models (Zidi & Hamdi, 2024; Khalfaoui & Derbali, 2021). Yet this is not a universal positive pattern, because high leverage is also linked to macro-financial volatility and can worsen outcomes under uncertainty (Khalfaoui & Guenichi, 2022; Ben Salem et al., 2024).

For quoted non-financial firms, the current evidence base does not support a definitive statement about leverage effects on ROA, ROE, or Tobin's Q because directly matching recent studies are missing (Theiri et al., 2022; El Ammari & Terzi, 2023; Brahim et al., 2025).

4.3. Debt Maturity and Risk-Related Outcomes

The reviewed studies treat short-term debt as a source of cash-flow pressure and refinancing risk, while long-term debt is linked more to solvency and structural leverage risk (Bose et al., 2020; Liu et al., 2021; Dorigoni & Anzalone, 2024). However, no recent Tunisian listed-firm study in the reviewed evidence estimates whether these two debt forms differ in sign or magnitude for ROA, ROE, Tobin's Q, or solvency (Beldi et al., 2024; Moalla, 2025).

4.4. Mechanisms and Channels

Mechanism evidence is indirect. One Tunisian listed-firm study finds leverage associated with lower earnings management, which is consistent with a monitoring interpretation (Theiri et al., 2022). Another links leverage positively to managerial entrenchment, implying the opposite agency interpretation (Dakhli & Mitraoui, 2023). Tax-related evidence is also contradictory, with studies reporting differing leverage tax associations (Chalavas et al., 2025; Alqatan et al., 2025; Su et al., 2026; Firmansyah et al., 2022). Taken together, these findings suggest that governance quality and institutional context likely shape whether leverage disciplines managers or reflects agency distortions, but this remains an inference rather than a directly established Tunisian performance mechanism (Theiri et al., 2022; Dakhli & Mitraoui, 2023; Firmansyah et al., 2022).

4.5. Heterogeneity Across Firms and Sectors

Sectoral evidence indicates that financing behavior differs materially between financial and industrial firms in Tunisia (Daadaa & Daadaa, 2026). Ownership heterogeneity is especially visible in banks, where public and private institutions respond differently to uncertainty and market conditions (Khalfaoui & Guenichi, 2022; Alouane et al., 2026). Comparator evidence also suggests possible threshold effects by size, implying that leverage performance estimates averaged across all firms may hide offsetting subgroup effects (Omri et al., 2025; Attia et al., 2023).

4.6. Methodological Patterns

Recent related studies increasingly use dynamic and nonlinear estimators such as system GMM, threshold models, PCSE, and 2SLS to address endogeneity and nonlinearity (Zidi & Hamdi, 2024; Omri et al., 2025; Alouane & Haddou, 2026; Kijkasiwat et al., 2022; Karim & Gurdgiev, 2025). Common robustness checks include alternative leverage definitions, lag structures, subsample splits, and robust standard errors (Chen et al., 2026; Lindner et al., 2023; Li et al., 2026). But directly matching Tunisia-specific quoted non-financial applications remain scarce (Kijkasiwat et al., 2022; Albanez & Schiozer, 2022).

4.7. Discussion

The literature supports a contingency interpretation rather than a universal rule. Leverage can support performance when it improves funding access, supports intermediation, or operates within manageable risk levels, but it can reduce performance when it raises distress, erodes liquidity, or amplifies uncertainty shocks (Zidi & Hamdi, 2024; Khalfaoui & Derbali, 2021; Khalfaoui & Guenichi, 2022; Aloulou et al., 2023). This helps explain why positive results appear in some bank settings while negative or unstable effects appear elsewhere (Zidi & Hamdi, 2024; Ben Salem et al., 2024).

Theoretically, this mixed pattern fits trade-off and agency perspectives better than any single linear model (Jensen & Meckling, 1976; Harris & Raviv, 1991). Empirically, the pattern also suggests omitted heterogeneity: pooled leverage coefficients may conceal different effects across sectors, ownership forms, or size classes (Khalfaoui & Guenichi, 2022; Daadaa & Daadaa, 2026; Attia et al., 2023).

For Tunisian quoted firms, the main implication is methodological as well as substantive. A persuasive future study should separately estimate total, short-term, and long-term leverage; interact leverage with uncertainty, sector, and ownership; and test multiple performance outcomes including ROA, ROE, and Tobin's Q (Beldi et al., 2024; Khalfaoui & Guenichi, 2022; Daadaa & Daadaa, 2026). It should also use endogeneity-aware techniques and robustness checks that are now standard in related work (Kijkasiwat et al., 2022; Chen et al., 2026; Lindner et al., 2023).

A practical implication for managers and investors is that debt policy should be treated as conditional, not mechanical. The evidence does not justify "more leverage is better" or "less leverage is always safer"; instead, balance-sheet choices should be aligned with liquidity capacity, sector conditions, governance quality, and exposure to uncertainty (Khalfaoui & Guenichi, 2022; Daadaa & Daadaa, 2026; Ben Abdallah & Bahloul, 2025).

5. Conclusion

This narrative review finds that the relationship between leverage and the financial performance of Tunisian quoted firms is mixed, context-dependent, and under-researched for quoted non-financial firms. The most usable recent Tunisian evidence comes from the banking sector, where capital structure, solvency, governance, and uncertainty materially affect performance.

For non-financial quoted firms, recent direct evidence is too limited to support a strong causal conclusion about leverage effects on ROA, ROE, or Tobin's Q. Debt maturity is theoretically central but empirically under-tested in Tunisia. The most defensible conclusion is therefore that leverage performance effects in Tunisia are not uniform and likely depend on size, sector, ownership, governance, and macro-political conditions.

Future Tunisia-specific work should prioritize firm-level panel designs, maturity-split debt measures, mechanism testing, and stronger endogeneity control.

5.1. Declaration of Generative AI

During the preparation of this manuscript, the authors used Grammarly Application and QuillBot to improve the clarity, readability, and language accuracy of the text. Output generated by the tools was carefully reviewed and edited by the authors, who take full responsibility for the content of this article. All substantive intellectual contributions, including conceptualization, analysis, interpretation of data, and final decisions regarding content, arguments, and conclusions, were carried out solely by the authors. The authors take full responsibility for the integrity, originality, and academic quality of this article.

5.2. Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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