**RESEARCH ARTICLE**

# Revisiting the pecking order theory: insights from an emerging market economy

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## Abstract

This study tests the explanatory power of the pecking order theory (POT) in shaping the financing decisions of non-financial firms listed on the Palestine Exchange (PEX), an under-researched, politically unstable emerging market. Using panel data for 29 firms over the period 2005–2019, we examine whether debt issuance is primarily driven by financial deficits and whether this relationship outweighs the influence of conventional capital structure determinants. Three empirical models are estimated: (1) testing the direct link between net debt issuance and financial deficit; (2) assessing whether financial deficit crowds out the explanatory power of firm-specific variables; and (3) examining leverage determinants consistent with POT predictions. Panel least squares serves as the primary estimation method, with robustness confirmed through fixed effects, random effects, lagged specifications, and GMM system estimations. The results strongly support POT in the Palestinian context. Financial deficit emerges as the dominant driver of debt issuance, with the coefficients of profitability, size, and asset tangibility declining once the deficit is included. Leverage regressions further reveal that profitability and growth opportunities are negatively associated with leverage, while firm size and tangibility exert positive effects, in line with POT predictions. These findings underscore the reliance on internal financing and bank debt in environments characterized by political instability, shallow equity markets, and high information asymmetry. The study contributes to the capital structure literature by offering context-specific evidence on POT in a politically fragile, bank-dependent economy. It also provides practical implications for policymakers, highlighting the need to strengthen equity market infrastructure, improve investor protection, and reduce information asymmetries to broaden financing options. Future research could extend this framework to sectoral analyses or cross-country comparisons within politically unstable emerging markets.

**Keywords** Pecking order theory · Financing deficit · Leverage · Capital structure

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# 1 Introduction

Firms' financing decisions, whether to rely on internal funds, raise debt, or issue equity, are central to corporate finance because they shape capital costs, risk exposure, strategic flexibility, and long-term performance (Singh et al. 2025). While Modigliani and Miller's (1958) irrelevance proposition argues that capital structure should not influence firm value in perfectly efficient markets, this assumption rarely holds in practice, especially in developing economies where market imperfections are more severe and institutional frameworks less stable.

To address these imperfections, several context-sensitive theories have emerged. The trade-off theory (Kraus and Litzenberger 1973) emphasizes the balance between tax benefits and bankruptcy costs, while agency theory (Jensen and Meckling 1976) highlights conflicts among managers, shareholders, and creditors. Of particular relevance is the pecking order theory (POT) proposed by Myers and Majluf (1984), which focuses on financing choices under information asymmetry. POT predicts a clear financing hierarchy: firms prefer internal funds, then debt, and finally equity, as issuing shares exposes them to adverse selection costs.

Recent studies in emerging and frontier markets often support POT, but also reveal context-specific deviations. The theoretical sequence, retained earnings, followed by debt, and lastly equity, tends to hold in principle but is reshaped in practice by institutional weaknesses, shallow capital markets, and macroeconomic instability (Hassen-Ali et al. 2022; Homapour et al. 2022; Jaworski and Czerwonka 2019). In some cases, underdeveloped debt markets or prohibitive borrowing costs lead firms to bypass debt and issue equity once internal funds are exhausted, creating a modified pecking order (Singh et al. 2025). The strength of financial systems and the quality of regulation significantly affect adherence to POT: transparent and well-developed markets mitigate information asymmetry, making debt more accessible (Abdalla et al. 2025).

The broader literature on POT in emerging markets paints a nuanced picture. While the theory's core prediction often holds, especially among SMEs, manufacturing firms, and in settings with high information asymmetry, deviations are common. Firms may resort to equity financing earlier than predicted, or combine elements of multiple theories (López-Gracia and Sogorb-Mira 2008; Naranjo et al. 2022; Muñoz Mendoza et al. 2023; Singh et al. 2025). These variations are often explained by differences in firm size, industry, market development, regulatory environment, and exposure to macroeconomic shocks (Alghifari et al. 2022; Naranjo et al. 2022).

Firm-specific factors also shape financing choices. Family controlled firms often rely heavily on retained earnings to avoid ownership dilution (Abdalla et al. 2025). Moreover, in politically unstable or highly volatile economies, uncertainty encourages firms to hoard liquidity or turn to alternative financing sources such as trade credit or intra-group loans (Kovacova et al. 2022).

These dynamics are particularly relevant in politically fragile markets, where equity financing is constrained, information asymmetry is severe, and investor risk

perceptions are elevated (Tran et al. 2024). Palestine exemplifies such a context: its equity market is thin and illiquid, political instability undermines investor confidence (Abdeljawad and Farhood 2025), and bank lending remains the dominant financing channel. These structural constraints strengthen reliance on internal funds and debt, while discouraging equity issuance due to concerns over undervaluation, ownership dilution, and weak investor protections. This makes Palestine a compelling setting to examine POT's robustness.

While capital structure has been extensively studied in developed economies (Shyam-Sunder and Myers 1999; Frank and Goyal 2003) and increasingly in emerging markets (Chipeta and Deressa 2016; Zeidan et al. 2018), evidence from small, politically unstable economies remains limited. Existing studies indicate that in such contexts, firms tend to follow POT more closely because of underdeveloped capital markets, limited investor bases, and heightened financing frictions (Chakraborty 2010; Yulianto et al. 2016). In Palestine, research shows that retained earnings and bank loans dominate corporate financing (Mouamer 2011; Hadi and Suryanto 2016), yet rare studies have systematically tested whether these patterns follow POT's hierarchy.

This study addresses that gap by investigating whether Palestinian non-financial firms' financing decisions align with the pecking order logic. Specifically, it tests whether net debt issuance is primarily explained by financial deficits, and whether incorporating this deficit measure reduces the explanatory power of traditional determinants such as profitability, size, growth and asset tangibility. The analysis has three objectives: (1) to examine the relationship between financial deficit and net debt issuance; (2) to assess whether financial deficit supersedes other determinants; and (3) to evaluate whether leverage patterns are consistent with POT's predictions; negative associations with profitability and growth opportunities, and positive associations with size and tangibility.

This study makes three contributions. First, it provides new evidence from a politically unstable and under-researched emerging market, expanding POT's empirical relevance. Second, it highlights the financial deficit as a strong operational measure of internal fund shortages. Third, it offers policy insights for strengthening capital markets, investor protections, and transparency, steps that could reduce information asymmetry and broaden financing options.

The remainder of the paper is structured as follows: Sect. 2 presents the theoretical framework and hypotheses; Sect. 3 describes the methodology and data; Sect. 4 reports and discusses the empirical results; and Sect. 5 concludes with theoretical and policy implications, limitations, and directions for future research.

## 2 Study framework

### 2.1 Theoretical background

The pecking order theory (POT), advanced by Myers and Majluf (1984), remains one of the most prominent frameworks for explaining corporate financing behavior under information asymmetry. At its core, POT posits a hierarchical preference in

financing decisions: firms prioritize retained earnings, then debt, and resort to equity issuance only when the first two sources are insufficient. This sequence is designed to minimize adverse selection costs, as equity offerings may be interpreted by investors as a negative signal regarding firm value. Consequently, managers tend to favor funding sources that preserve market perceptions and entail the lowest information costs.

The relevance of POT is particularly pronounced in emerging and politically unstable markets such as Palestine, where equity markets are thinly traded, investor trust is fragile, and political instability intensifies the risks of external financing. In such an environment, the cost of equity issuance extends beyond financial considerations to include reputational implications, given heightened investor skepticism. Structural constraints further limit financing flexibility: capital markets are underdeveloped, institutional investor participation is minimal, and bank-based financing dominates. These conditions reinforce the reliance on internal funds and debt (Mouamer 2011; Ahmed et al. 2024), underscoring the practical significance of POT in this setting.

POT intersects with insights from agency theory and information asymmetry theory. Jensen and Meckling (1976) argue that debt can reduce agency costs by constraining managerial discretion over free cash flows, while Myers (1984) notes that information asymmetry can lead to underinvestment when managers are unable to credibly convey firm value to the market. In such contexts, debt often emerges as the more viable external financing option, especially when firm opacity or macro-economic volatility undermines investor confidence. Evidence from technologically advanced industries also supports this behavior; for example, Liao and Wang (2024) show that in weak information environments, firms systematically favor debt over equity to avoid the signaling problems associated with equity issuance.

Alternative frameworks, such as trade-off theory and market timing theory, offer complementary perspectives but are less applicable to the Palestinian context and out of this study's scope. The trade-off theory (Kraus and Litzenberger 1973) suggests that firms balance the tax benefits of debt against financial distress costs, a balance difficult to maintain in unstable political and economic conditions. Similarly, the market timing theory (Baker and Wurgler 2002) posits that managers issue equity when valuations are high, but this mechanism is constrained by the illiquidity and inefficiency of the Palestinian equity market, where price signals are weak and trading volumes are low.

Empirical research on POT offers mixed findings but generally supports its predictions in environments where equity issuance is costly. Frank and Goyal (2003) find that financial deficit, a measure of the gap between internal funds and investment needs, strongly predicts debt issuance in U.S. firms. In emerging markets, studies such as Zeidan et al. (2018), Singh et al. (2025), and Bhama et al. (2021) show that firms, particularly SMEs, tend to follow the pecking order when ownership dilution is undesirable or when regulatory protections for minority shareholders are weak. In contexts similar to Palestine, marked by regulatory gaps, institutional fragility, and political risk, POT often emerges as the most applicable financing model (Chipeta and Deressa 2016; Ahmed and Hisham 2020).

Other emerging market evidence also supports partial or full adherence to POT. For example, research on emerging countries SMEs consistently shows that firms prefer internal funds, then debt, and lastly equity, particularly when information

asymmetry is high or among smaller enterprises (Chakraborty 2010; Singh et al. 2025; Tran et al. 2024; Bhama et al. 2021; Yıldırım and Çelik 2021).

Building on these theoretical and empirical insights, this study applies POT as the principal explanatory framework for financing decisions in Palestinian non-financial firms. Specifically, it examines the role of the financial deficit as the main driver of debt issuance and investigates how firm-level characteristics, profitability, size, asset tangibility, and growth opportunities, affect the sequencing of financing choices. By situating the analysis within a politically unstable and structurally constrained economy, the study not only tests the central predictions of POT but also extends its application to a high-asymmetry, under-researched market.

## 2.2 Testable predictions of the pecking order theory

The pecking order theory (POT) argues that financing choices follow a clear hierarchy: firms prefer internal funds, then debt, and finally equity when other sources are exhausted (Myers and Majluf 1984). This hierarchy is shaped by information asymmetry and adverse selection, which make equity issuance costly due to valuation discounts and ownership dilution. In politically unstable and financially underdeveloped economies such as Palestine, these frictions are amplified by the scarcity of active equity markets, the dominance of bank-based financing, and the heightened opacity surrounding firm performance (Abdeljawad and Farhood 2025), making the financing order predicted by POT especially pronounced.

A central implication of POT is that the financial deficit, the gap between internal cash flows and investment needs, should be a strong and positive determinant of net debt issuance. In such settings, the deficit becomes the decisive trigger for borrowing. Evidence from multi-country panels and country-specific studies shows that once internal resources fall short, net debt issuance closely tracks the deficit, while the marginal impact of traditional determinants such as size, tangibility, and growth often diminishes when the deficit is incorporated into the model (Singh et al. 2025). Similarly, Frank and Goyal (2003) and Zeidan et al. (2018) show that when retained earnings are insufficient, firms turn to debt before equity, making the financial deficit a core operational measure of POT. Studies from Latin America and Asia further demonstrate that equity issuance is episodic and costly, constrained by weak investor protections, persistent valuation discounts, and the risk of ownership dilution, which tightens the deficit–debt linkage relative to developed markets (Pinillos et al. 2025). In Palestine, this effect is likely to be even stronger due to market illiquidity, weak governance safeguards, and structural inefficiencies.

**H1** *Net debt issuance is positively and significantly related to the financial deficit.*

POT also implies that once the financial deficit is included as an explanatory variable, the influence of conventional firm-specific determinants on debt issuance should diminish. Profitability, firm size, asset tangibility, and growth opportunities (Abdeljawad and Mat Nor 2017) are expected to exert weaker effects when the financing hierarchy is strictly observed, since the financial deficit captures the primary condition prompting external borrowing.

**H2** *When the financial deficit is accounted for, traditional firm-specific factors (profitability, size, asset tangibility, and growth opportunities) lose explanatory power for net debt issuance.*

Beyond debt issuance, POT also makes predictions about leverage levels. In its pure form, the theory predicts a negative relationship between profitability and leverage, as more profitable firms depend less on external debt (Abdeljawad and Farhood 2025). Growth opportunities are likewise expected to be negatively associated with leverage, reflecting managers' reluctance to assume obligations that could impose restrictive covenants or repayment burdens (Fama and French 2002). Conversely, larger firms and those with greater tangible assets typically enjoy better access to debt markets and are perceived as less risky by creditors, leading to higher leverage ratios (Bhama et al. 2021; Liao and Wang 2024). While POT suggests that larger organizations are more likely to employ debt because of superior market access (Dommes et al. 2019), other studies, such as López-Gracia and Sogorb-Mira (2008) and Bhat et al. (2023), find that larger enterprises often prefer internal funds to avoid the high costs associated with equity issuance.

**H3** *Leverage is negatively related to profitability and growth opportunities, and positively related to firm size and asset tangibility.*

By structuring the empirical analysis around these three hypotheses, this study tests the core predictions of POT in a setting where information asymmetry is severe, equity markets are underdeveloped, and firms face pronounced external financing constraints. The findings extend the empirical scope of POT to politically unstable emerging markets, offering insights relevant to both corporate financing strategies and policy design.

## 3 Methodology

### 3.1 Data

This study employs an unbalanced panel of non-financial firms listed on the Palestine Exchange (PEX) over the period 2005–2019. Financial institutions were excluded because their regulatory frameworks, reporting requirements, and capital structure determinants differ fundamentally from those of non-financial firms. The initial population comprised 34 non-financial firms; however, five were excluded due to persistent gaps or inconsistencies in financial data across multiple years. The final sample consists of 29 firms, covering more than 85% of the eligible non-financial sector on the exchange. Although modest in size by international standards, this coverage ensures strong representativeness within the Palestinian market context. Over the 15-year horizon, the dataset yields 412 firm-year observations (different by models), providing sufficient cross-sectional and time-series variation for robust econometric analysis.

Firm-level data were collected primarily from annual reports and audited financial statements available through the PEX database, supplemented by company websites and other publicly accessible filings. Where necessary, figures were cross-verified against regulatory disclosures and independent financial databases to improve accuracy and consistency.

The study period ends in 2019 for two reasons. First, the onset of the COVID-19 pandemic in 2020 introduced structural breaks in financial reporting and operational performance, undermining the comparability of pre-pandemic results. Second, recurrent military escalations and episodes of political unrest in 2022 and 2023, and continuing up to the time of writing in 2025, created extreme volatility in firm performance and disclosure practices. While these developments are significant, they require crisis-specific analytical frameworks and are therefore proposed as a separate avenue for future research.

### 3.2 Measurement of variables

The variables employed to examine the validity of the pecking order theory (POT) in the Palestinian context are summarized in Table 1. The definitions follow established literature, particularly Shyam-Sunder and Myers (1999) and Frank and Goyal (2003), to ensure comparability with prior empirical studies.

### 3.3 Models

This research employed three approaches to investigate the pecking order theory (POT). The first approach examines the relationship between the financing deficit and net debt issuance. According to POT, a strong association is expected between the deficit and debt financing. To test this prediction, the financing deficit is calculated using the model of Shyam-Sunder and Myers (1999), which provides an aggregated form of the accounting identity for the financing deficit, as specified in Model 1.

$$DEF_{it} = DIV_{it} + INV_{it} + \Delta W_{it} - CF_{it} \tag{1}$$

The next step involves estimating the relationship between financial deficit and net debt issues as Model 2 (Shyam-Sunder and Myers 1999):

$$\Delta D_{it} = a + b_{po} DEF_{it} + e_i \tag{2}$$

Subsequently, we examined the same relationship by replacing the aggregate financing deficit with its individual components, as specified in Model 3 (Frank and Goyal 2003).

$$\Delta D_{it} = a + b_{DIV} DIV_{it} + b_I INV_{it} + b_W \Delta W_{it} - b_C CFt_{it} + e \tag{3}$$

The second approach assesses whether the financing deficit serves as the primary determinant of net debt issuance. Specifically, we examine the effects of changes, rather than levels, in the traditional determinants of debt issuance, namely asset tan-

**Table 1** Study variables, defini-
tions, and measurement

| Type | Symbol | Definition |
|---|---|---|
| The dependent variables | $\Delta D_t$ | Net debt issuance in year t, measured as the change in total debt between periods divided by total assets |
| | TD & TL | Total debt ratio, defined as total debt to total assets. For robustness, we also employ TL, the ratio of total liabilities to total assets |
| The independent variables | $DIV_t$ | cash dividends in year t normalized by total assets |
| | $INV_t$ | Net investment in year t ($INV_t=\Delta$ total assets+depreciation) normalized against total assets |
| | $\Delta W_t$ | The change in working capital in year t ($\Delta W_t$=change in current assets—change in current liabilities) normalized by total assets |
| | $CF_t$ | Cash flow after interest and taxes ($CF_t$=income before extraordinary items plus depreciation and amortization) divided by total assets |
| | DEF | Deficit is a variable that fulfill the following equation. $DEF_t=DIV_t+INV_t+\Delta W_t$—$CF_t$ |
| | T & $\Delta T$ | Asset tangibility (the fixed assets/total assets ratio). $\Delta T$ represents the change in this ratio |
| | LS & $\Delta LS$ | The natural log of sales. $\Delta LS$ represents the change in this ratio |
| | MTB & $\Delta MTB$ | The market-to-book ratio is the ratio of the market value of assets (book value+the difference between market value of equity and book value of equity) to the book value of assets. $\Delta MTB$ represents the change in this variable |
| | P & $\Delta P$ | Profitability is the ratio of operating income to book value of assets. $\Delta P$ represents the change in this ratio |

gibility (T), market-to-book ratio (MTB), log of sales (LS), and profitability (P). To this end, we begin by estimating Model 4.

$$\Delta D_{it} = \alpha + \beta_t\Delta T_{it} + \beta_{mtb}\Delta MTB_{it} + \beta_{ls}\Delta LS_{it} + \beta_p\Delta P_{it} + e \qquad (4)$$

Then, the financing deficit variable was added to the model. According to the pecking order theory, the financing deficit is the primary factor driving the debt issues. To confirm this, the model is re-estimated after adding the financing deficit as an explanatory variable as in Model 5.

$$\Delta D_{it} = \alpha + \beta_t\Delta T_{it} + \beta_{mtb}\Delta MTB_{it} + \beta_{ls}\Delta LS_{it} + \beta_p\Delta P_{it} + \beta_{def}DEF_{it} + e \quad (5)$$

If the pecking order theory is valid, the importance of traditional components should decrease, with the deficit variable appearing to be the most influential among the other variables.

The third approach assesses whether the determinants of the debt ratio align with the predictions of the pecking order theory. Model 6 investigates conventional drivers of capital structure to verify their theoretical consistency. Unlike earlier models, this specification employs levels rather than changes, thereby capturing the long-term equilibrium of the relationship. To enhance robustness, total debt and total liabilities are regressed separately as dependent variables. Both static and dynamic versions of this model are estimated to provide further validation.

$$D_{it} = \alpha + \beta_t T_{it} + \beta_{mtb} MTB_{it} + \beta_{ls} LS_{it} + \beta_p P_{it} + e \tag{6}$$

By applying these three approaches sequentially, we are able to evaluate POT from multiple perspectives: (1) the direct link between financing deficits and debt issuance, (2) the comparative importance of deficits versus conventional leverage determinants, and (3) the consistency of leverage determinants with POT in a small, frontier market setting.

## 3.4 Estimation methods

To empirically assess the hypotheses of this study, panel regression techniques are employed, with estimation strategies tailored to each model specification. The primary method is Panel Ordinary Least Squares (POLS) with Panel-Corrected Standard Errors (PCSE). The PCSE estimator accounts for both heteroskedasticity and autocorrelation across firms, thereby enhancing the reliability of statistical inference (Beck and Katz 1995). This approach is widely adopted in the capital structure literature and is consistent with the methodological frameworks of Shyam-Sunder and Myers (1999) and Frank and Goyal (2003). To address the influence of outliers, all continuous variables are winsorized at the 1st and 99th percentiles, preserving the overall distribution while limiting distortion from extreme observations. Observation counts differ across specifications due to missing values in certain variables when constructing components/changes. We use all available observations per model.

For models expressed in changes (e.g., ΔD), fixed effects (FE) estimation is not appropriate due to inherent differencing. In these cases, pooled regressions are employed as the main specification, while random effects (RE) models are estimated as a robustness check. As expected, the RE results closely resemble those from POLS, apart from differences in standard errors, reinforcing the stability of the findings. For models in which the dependent variable is a leverage ratio in levels (e.g., TD and TL), POLS, FE, and RE are all estimated. The Hausman test confirms the suitability of FE in these specifications, indicating that unobserved firm-specific characteristics are correlated with the regressors and thus need to be controlled for.

To mitigate potential endogeneity arising from simultaneity or reverse causality, one-year lagged independent variables are incorporated in additional specifications (Abdeljawad and Mat Nor 2017). The lagged models yield results consistent with the baseline estimations, further supporting the robustness of the conclusions. In

addition, dynamic panel estimation using system GMM is employed to address both potential endogeneity and persistence in leverage decisions.

The convergence of results across POLS, FE, RE, lagged specifications, and system GMM provides strong evidence of the empirical robustness of the pecking order theory in this unique institutional context.

## 4 Results and discussion

### 4.1 Descriptive statistics

Table 2 offers an overview of the variables under study, highlighting the diversity in debt reliance among firms. The broad range observed in net debt issuance indicates that companies adopt different strategies to manage their debt levels. Similarly, the substantial variation between the maximum and minimum values of the financial deficit variable suggests significant differences in how firms address financing gaps. On average, debt accounts for approximately 8.8% of the firms' capital structure, while total liabilities comprise about 28.6%. The levels and changes in other variables provide further insights into the financial strategies and variability across the sampled firms.

### 4.2 Correlation

Table 3's correlation matrix provides valuable insights into the univariate correlations between the study's variables and acts as a tool for assessing potential multicollinearity, which may impair the validity of multiple regression models. Multicollinearity is generally regarded troublesome when the correlation coefficient between independent variables in any model reaches 0.8. A thorough review of the matrix reveals that

**Table 2** Descriptive statistics

|              | Mean    | Median  | Maximum | Minimum | Std. Dev | Observations |
| ------------ | ------- | ------- | ------- | ------- | -------- | ------------ |
| $\Delta$D    | 0.005   | 0.000   | 0.297   | −0.884  | 0.072    | 357          |
| TD           | 0.088   | 0.035   | 0.527   | 0.000   | 0.110    | 386          |
| TL           | 0.286   | 0.275   | 0.952   | 0.000   | 0.196    | 386          |
| $\Delta$LS   | −0.002  | 0.000   | 0.964   | −1.303  | 0.152    | 329          |
| $\Delta$MTB  | 0.033   | −0.003  | 12.916  | −5.152  | 0.880    | 308          |
| $\Delta$T    | 0.002   | −0.001  | 0.379   | −0.316  | 0.077    | 357          |
| $\Delta$P    | 0.001   | 0.000   | 0.443   | −0.439  | 0.072    | 357          |
| $\Delta$W    | 0.004   | 0.004   | 0.300   | −0.451  | 0.088    | 357          |
| CF           | 0.039   | 0.037   | 0.327   | −0.477  | 0.083    | 357          |
| DEF          | 0.004   | −0.002  | 0.650   | −0.961  | 0.105    | 357          |
| DIV          | 0.001   | 0.000   | 0.073   | 0.000   | 0.007    | 386          |
| INV          | 0.038   | 0.026   | 0.514   | −0.715  | 0.111    | 357          |
| LS           | 15.410  | 15.536  | 20.525  | 9.962   | 1.975    | 355          |
| MTB          | 1.130   | 0.913   | 14.138  | 0.225   | 1.320    | 342          |
| P            | 0.021   | 0.022   | 0.317   | −0.622  | 0.079    | 386          |
| T            | 0.615   | 0.622   | 0.987   | 0.129   | 0.218    | 386          |

**Table 3** Correlation matrix

| Correl | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) CF | 1.000 | | | | | | | | | | | | | | | |
| (2) ΔD | −0.034 | 1.000 | | | | | | | | | | | | | | |
| (3) ΔLS | −0.017 | 0.452 | 1.000 | | | | | | | | | | | | | |
| (4) ΔMTB | −0.025 | 0.002 | −0.317 | 1.000 | | | | | | | | | | | | |
| (5) ΔT | −0.085 | 0.174 | 0.048 | −0.024 | 1.000 | | | | | | | | | | | |
| (6) ΔP | 0.343 | −0.100 | 0.041 | −0.249 | 0.044 | 1.000 | | | | | | | | | | |
| (7) ΔW | 0.294 | −0.009 | 0.268 | −0.013 | −0.655 | 0.192 | 1.000 | | | | | | | | | |
| (8) TD | −0.204 | 0.229 | 0.052 | −0.014 | 0.111 | 0.012 | −0.083 | 1.000 | | | | | | | | |
| (9) DEF | −0.145 | 0.591 | 0.724 | −0.296 | 0.121 | 0.152 | 0.315 | 0.190 | 1.000 | | | | | | | |
| (10) DIV | 0.030 | −0.004 | −0.029 | −0.015 | −0.083 | 0.129 | 0.043 | −0.084 | −0.007 | 1.000 | | | | | | |
| (11) INV | 0.400 | 0.523 | 0.453 | −0.280 | 0.535 | 0.252 | −0.233 | 0.085 | 0.574 | −0.040 | 1.000 | | | | | |
| (12) TL | −0.209 | 0.062 | 0.055 | −0.026 | −0.021 | −0.001 | −0.059 | 0.597 | 0.100 | −0.113 | −0.019 | 1.000 | | | | |
| (13) LS | 0.302 | 0.017 | 0.000 | −0.072 | −0.041 | −0.050 | 0.101 | 0.397 | −0.036 | −0.149 | 0.122 | 0.287 | 1.000 | | | |
| (14) MTB | 0.075 | −0.024 | −0.071 | 0.535 | −0.009 | −0.138 | 0.004 | −0.060 | −0.114 | −0.060 | −0.050 | −0.050 | −0.113 | 1.000 | | |
| (15) P | 0.930 | −0.062 | −0.007 | −0.015 | −0.065 | 0.380 | 0.300 | −0.249 | −0.140 | 0.029 | 0.347 | −0.266 | 0.251 | 0.095 | 1.000 | |
| (16) T | −0.262 | 0.025 | −0.004 | 0.080 | 0.172 | 0.044 | −0.172 | 0.213 | 0.125 | 0.028 | 0.045 | −0.166 | −0.326 | 0.170 | −0.205 | 1.000 |

there are no such large correlations, indicating that multicollinearity is not a serious concern in this study.

### 4.3  The relationship between net debt issued and financing deficit

This section discusses the results in relation to Hypothesis 1. The results provide compelling evidence that Palestinian firms exhibit financing behavior consistent with the predictions of the pecking order theory (POT), with the financial deficit, in aggregate or via its components, emerging as the dominant driver of debt issuance. Across specifications, the estimated coefficients are identical in both pooled and random effects with different standard errors. The first set of models (Table 4, Model 2) tests the direct relationship between the financial deficit (DEF) and net debt issuance ($\Delta D$). The results reveal a strong and statistically significant positive association, with the financial deficit explaining a substantial portion of the variation in debt changes. The estimated coefficient indicates that the deficit accounts for approximately 36% of the change in debt levels, while the R-squared suggests that DEF alone explains nearly 28% of the variation in net debt issuance. These findings provide strong support for Hypothesis 1 and closely mirror the seminal work of Shyam-Sunder and Myers (1999) and Frank and Goyal (2003). The logic is straightforward: when internal funds fall short, Palestinian firms turn first to debt rather than equity. In a context where equity markets are shallow, investor protections are weak, and equity issuance carries high costs of dilution and undervaluation, debt naturally becomes the primary external financing option.

Decomposing the financial deficit into its key components (Model 3) offers further insight into firm behavior. The negative association between dividend payouts and debt issuance suggests that firms first conserve internal resources by reducing dividends before resorting to external borrowing, consistent with Frank and Goyal's (2003) observations. By contrast, investment expenditures and increases in working capital both show strong positive associations with debt issuance, indicating that expansionary activities are key triggers for borrowing. This pattern aligns with Singh et al. (2025) and Chatzinas and Papadopoulos (2018) who argue that firms in emerging markets rely on debt to support growth while avoiding equity issuance that risks ownership dilution, an especially relevant concern in Palestine's family-dominated corporate sector.

The results also reveal a negative and statistically significant relationship between internal cash flow (after tax and interest) and debt issuance, underscoring the central tenet of POT that firms prioritize internal funds over external borrowing whenever possible. In Palestine, where retained earnings are often the primary source of financing and public equity access remains limited, this relationship is particularly pronounced. The evidence highlights the importance of internal cash generation in shaping debt dependence under conditions of political instability, weak governance, and underdeveloped capital markets.

In sum, the results in Table 4 provide robust support for Hypothesis 1. Financial deficits are the primary determinant of debt issuance among Palestinian firms, confirming that the financing hierarchy outlined by POT is not merely theoretical but deeply embedded in practice. Firms consistently prioritize internal funds, resort to

**Table 4** The relationship between net debt issued and the financing deficit

| Variable | Dependent Variable: $\Delta D$ | | | |
| --- | --- | --- | --- | --- |
| | Model 2 | | Model 3 | |
| | Pooled* | RE** | Pooled* | RE** |
| | (1) | (2) | (3) | (4) |
| DEF | 0.363*** | 0.363*** | | |
| | (0.052) | (0.031) | | |
| DIV | | | −0.884 | −0.884* |
| | | | (0.583) | (0.531) |
| INV | | | 0.449*** | 0.449*** |
| | | | (0.055) | (0.034) |
| $\Delta$W | | | 0.257*** | 0.257*** |
| | | | (0.057) | (0.042) |
| CF | | | −0.314*** | −0.314*** |
| | | | (0.057) | (0.044) |
| Constant | 0.004 | 0.004 | 0.0001 | 0.0001 |
| | (0.003) | (0.003) | 0.004 | (0.004) |
| R-squared | 0.278 | 0.278 | 0.338 | 0.338 |
| Adjusted R-squared | 0.276 | 0.276 | 0.331 | 0.331 |
| F-statistic | 136.416*** | 136.416*** | 45.013*** | 45.013*** |
| Durbin-Watson stat | 2.165 | | 2.194 | |
| Total panel (unbalanced) observations | 357 | 357 | 357 | 357 |

Standard errors in parentheses; ***$p<0.01$, **$p<0.05$, *$p<0.10$

DEF, deficit-to-assets; DIV, dividends-to-assets; INV, investment-to-assets; $\Delta$W, change in working capital-to-assets; CF, cash flow-to-assets

*Pooled models used Panel Least Squares with Cross-section weights (PCSE) standard errors and covariance (d.f. corrected)

**RE models used Panel EGLS (Cross-section random effects) with Swamy and Arora estimator of component variances

Model 2:
$\Delta D_{it} = a + b_{po}DEF_{it} + e_i$

Model 3:
$\Delta D_{it} = b_{DIV}DIV_{it} + bINV_{it} + b_W\Delta W_{it} - b_C CF_{it} + e$

debt when deficits arise, and largely avoid equity issuance. This pattern reflects both the structural constraints of the Palestinian market and broader evidence from financially constrained economies, reinforcing the relevance of POT in explaining capital structure decisions in emerging, high-risk environments.

## 4.4 What determines the net debt issued: conventional determinants or deficit?

The second hypothesis tests whether the financial deficit remains the dominant explanatory factor for debt issuance when traditional determinants are included in the model. When only standard variables, such as changes in tangibility, market-to-book ratios, firm size, and profitability, are considered, several display the expected relationships with debt. However, once the financial deficit is introduced, its coefficient becomes both highly significant and substantially larger than those of the other variables, while the influence of most traditional determinants diminishes or disappears altogether. Notably, profitability becomes negatively associated with debt issuance, reinforcing the core POT prediction that firms with stronger internal cash flows are less reliant on external borrowing. The marked increase in explanatory power after adding the financial deficit underscores its central role in explaining financing

behavior in Palestine. These results are consistent with evidence from other MENA economies (Abdeljawad et al. 2024), where the pecking order pattern persists despite institutional variation.

Several factors can influence a firm's decision to issue debt, including changes in asset tangibility, growth opportunities, firm size, and profitability (Rajan and Zingales 1995; Dommes et al. 2019). Understanding how these drivers interact with financial deficits is crucial for assessing capital structure choices, especially in contexts with limited equity access such as Palestine.

Model 4 in Table 5 examines the traditional determinants of debt issuance without including the financial deficit. The results show that changes in asset tangibility ($\Delta$T), market-to-book ratio ($\Delta$MTB), and firm size ($\Delta$LS) all have positive and statistically significant effects on net debt issuance. These findings are consistent with prior studies showing that firms with greater tangibility can pledge collateral, thereby reducing information asymmetry and improving access to debt markets (Rajan and Zingales 1995; Kayo and Kimura 2011; Nhung et al. 2017). Likewise, firms with stronger growth prospects ($\Delta$MTB) and larger size ($\Delta$LS) are more likely to issue debt to capi-

| Table 5 Testing whether the financing deficit dominates traditional determinants of net debt | Variable | Dependent variable: $\Delta$D | | | |
|---|---|---|---|---|---|
| | | Conventional determinants | | Deficit is added | |
| | | Pooled* | RE** | Pooled* | RE** |
| | | (1) | (2) | (3) | (4) |
| | $\Delta$T | 0.168** | 0.168*** | 0.115** | 0.115** |
| | | (0.072) | (0.057) | (0.057) | (0.052) |
| | $\Delta$MTB | 0.012** | 0.012** | 0.014*** | 0.014*** |
| | | (0.005) | (0.005) | (0.004) | (0.004) |
| | $\Delta$LS | 0.257*** | 0.258*** | 0.041 | 0.041 |
| | | (0.064) | (0.028) | (0.058) | (0.035) |
| | $\Delta$P | −0.077 | −0.077 | −0.150*** | −0.150*** |
| Standard errors in parentheses; ***$p<0.01$, **$p<0.05$, *$p<0.10$ | | (0.066) | (0.056) | (0.053) | (0.051) |
| | DEF | – | – | 0.454*** | 0.454*** |
| $\Delta$T, change in tangibility; $\Delta$MTB, change in market-to-book; $\Delta$LS, change in log sales; $\Delta$P=Change in profitability; DEF=Deficit-to-assets | | – | – | (0.081) | (0.052) |
| | C | 0.003 | 0.003 | 0.006 | 0.006 |
| | | (0.004) | (0.004) | (0.004) | (0.004) |
| | R-squared | 0.256 | 0.256 | 0.412 | 0.412 |
| *Pooled models used Panel Least Squares with Cross-section weights (PCSE) standard errors and covariance (d.f. corrected) | Adjusted R-squared | 0.245 | 0.246 | 0.402 | 0.402 |
| | F-statistic | 24.465*** | 24.515 | 39.794 | 39.794 |
| | Durbin-Watson stat | 1.896 | | 2.111 | |
| **RE models used Panel EGLS (Cross-section random effects) with Swamy and Arora estimator of component variances | Total panel (unbalanced) observations | 290 | 290 | 290 | 290 |
| Durbin–Watson statistic reported only for pooled OLS | | *Model 4* $\Delta D_{it}=\alpha+\beta_t \Delta T_{it}+\beta_{mtb}\Delta TB_{it}+\beta_{ls}\Delta LS_{it}+\beta_p\Delta P_{it}+e$ | | *Model 5:* $\Delta D_{it}=\alpha+\beta_t \Delta T_{it}+\beta_{mtb}\Delta MTB_{it}+\beta_{ls}\Delta LS_{it}+\beta_p\Delta P_{it}+DEF_{it}+e$ | |

talize on expansion opportunities and to leverage easier access to financing channels (Rossi 2014; Abdeljawad and Mat Nor 2017).

In contrast, changes in profitability ($\Delta P$) are not significantly associated with debt issuance in Model 4. Under POT (Myers 1984), profitable firms are expected to rely more heavily on internal resources and less on external borrowing. The lack of significance here may indicate that limited credit access or liquidity constraints weaken the theoretical relationship in the Palestinian setting.

When the financial deficit (DEF) is added in Model 5, the results change notably. The coefficient on DEF is positive and highly significant, confirming that the financing deficit is the dominant factor driving debt issuance. This finding echoes Frank and Goyal (2003), Shyam-Sunder and Myers (1999), and Chirinko and Singha (2000), who demonstrate that financial deficits consistently outperform traditional variables in explaining net debt issuance. By contrast, Pinillos et al. (2025) report that in parts of Latin America, financial deficits explained only a modest share of debt variation, highlighting that institutional settings and market maturity can moderate POT's explanatory power.

Moreover, the inclusion of DEF reduces both the magnitude and significance of other predictors. The coefficient on firm size ($\Delta LS$) becomes insignificant, while the effect of tangibility ($\Delta T$) weakens. This suggests that much of the explanatory power previously attributed to firm size and tangibility is actually subsumed by the financing deficit itself. In essence, once the need for external finance is explicitly measured, conventional proxies for financing constraints lose relevance.

Importantly, profitability ($\Delta P$) becomes statistically significant and negatively associated with net debt issuance once the deficit is controlled for, in line with POT predictions. This shift indicates that profitability reduces financing pressure, reaffirming the hierarchy proposed by Myers and Majluf (1984): internal funds first, followed by debt, and equity only as a last resort.

The increase in explanatory power from Model 4 ($R^2 = 0.256$) to Model 5 ($R^2 = 0.412$) further demonstrates the superior predictive strength of the financing deficit. These findings provide strong support for Hypothesis 2, showing that the financial deficit dominates traditional determinants of debt issuance in Palestine.

Overall, the evidence reinforces the central logic of the pecking order theory in emerging markets with underdeveloped capital markets. Firms first prioritize internal resources, and when a financing gap emerges, they respond primarily by issuing debt, particularly given the lack of viable equity alternatives. The financial deficit therefore serves not only as a proxy for financing pressure but as the central explanatory variable in capital structure decisions in financially constrained environments.

## 4.5 Determinants of leverage ratio

Turning to leverage determinants (Hypothesis 3), we estimated three specifications, pooled, fixed effects, and random effects, using both total debt and total liabilities ratios. The Hausman tests indicate that the fixed-effects estimators in columns 2 and 5 are the most appropriate. These models capture the long-term drivers of leverage, reflecting how structural firm characteristics shape debt ratios and liabilities-to-assets ratios.

The regression results in Table 6, columns 2 and 5, reveal a consistent pattern: firms with higher asset tangibility and larger size carry more debt, while more profitable firms maintain lower leverage levels. The positive effects of tangibility and size highlight their role in enhancing borrowing capacity: tangible assets provide collateral, and size signals stability to creditors. Firms with substantial tangible assets, such as real estate, can secure debt more easily by pledging them as collateral (Frank and Goyal 2003). Abdeljawad and Abed-Rabu (2019) corroborate this finding, showing that high tangibility increases borrowing capacity in emerging economies by lowering lenders' risk perceptions. Conversely, profitability exerts a negative effect on leverage, contradicting the trade-off theory but fully consistent with POT, which emphasizes reliance on internal financing to minimize information asymmetry costs (Myers 1984; Jarallah et al. 2019). The positive effect of the market-to-book ratio on total liabilities further suggests that growth opportunities influence broader liability structures, though not necessarily debt-specific financing decisions (Chatzinas and Papadopoulos 2018).

These findings gain greater meaning in the Palestinian business environment. The economy is constrained by political instability, trade restrictions, and a highly bank-dependent financial system (Abdeljawad and Farhood 2025). Equity markets remain thin and illiquid, with little institutional investor participation. Under such condi-

**Table 6** The determinants of leverage ratio

| Variable | Dependent variable: TD | | | Dependent variable: TL | | |
|---|---|---|---|---|---|---|
| | Pooled | FE | RE | Pooled | FE | Re |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| T | 0.167*** | 0.319*** | 0.245*** | −0.078 | 0.372*** | 0.239*** |
| | (0.020) | (0.057) | (0.036) | (0.049) | (0.104) | (0.066) |
| MTB | −0.002 | 0.000 | −0.001 | 0.007 | 0.010** | 0.008 |
| | (0.002) | (0.002) | (0.004) | (0.006) | (0.004) | (0.006) |
| LS | 0.034*** | 0.015** | 0.027*** | 0.038*** | 0.019 | 0.029*** |
| | (0.002) | (0.006) | (0.004) | (0.006) | (0.016) | (0.008) |
| P | −0.403*** | −0.274*** | −0.319*** | −0.845*** | −0.412*** | −0.475*** |
| | (0.069) | (0.084) | (0.068) | (0.134) | (0.132) | (0.113) |
| Constant | −0.526*** | −0.336*** | −0.465*** | −0.238** | −0.230 | −0.273* |
| | (0.038) | (0.107) | (0.076) | (0.108) | (0.273) | (0.146) |
| R-squared | 0.378 | 0.629 | 0.208 | 0.211 | 0.702 | 0.101 |
| Adjusted R-squared | 0.370 | 0.586 | 0.198 | 0.201 | 0.668 | 0.089 |
| F-statistic | 46.859*** | 14.859*** | 20.335*** | 20.717*** | 20.661*** | 8.647 |
| Total panel (unbalanced) observations | 314 | 314 | 314 | 314 | 314 | 314 |

*Model 6:*

$$Y_{it} = \alpha + \beta_t T_{it} + \beta_{mtb} MTB_{it} + \beta_{ls} LS_{it} + \beta_p P_{it} + e$$

Models (1) & (4): Pooled OLS with cross-section weights (PCSE) standard errors & covariance (d.f. corrected)

Models (2) & (5): Fixed Effects (within) estimator with cross-section weights (PCSE)

Models (3) & (6): Random Effects GLS using Swamy–Arora estimator of variance components

Standard errors in parentheses; ***$p<0.01$, **$p<0.05$, *$p<0.10$

Hausman test for RE vs FE strongly rejects RE ($p=0.000$)

tions, the financing sequence outlined by the pecking order theory, internal funds first, debt second, and equity last, is not only observed but reinforced by structural constraints. The strong empirical alignment with POT suggests that, in Palestine, the theory reflects not merely a financing preference but a necessity dictated by institutional realities.

Comparisons with recent emerging-market evidence further contextualize the results. Many researchers find that during periods of macroeconomic uncertainty, firms in several developing economies shifted more decisively toward POT-consistent behavior (Hassen-Ali et al. 2022; Homapour et al. 2022; Jaworski and Czerwonka 2019), echoing the Palestinian experience amid recurring economic and political shocks. In Palestine, where market frictions are acute and investor confidence is fragile, POT appears to operate in its purest form.

The evidence consistently supports all three hypotheses. The financial deficit is a powerful predictor of debt issuance, dominating traditional determinants when included in the model. Firms adjust their financing strategies in a way that conserves internal resources and relies on debt to meet residual needs, with profitability acting as a brake on borrowing. Leverage patterns further reinforce the theory, showing positive associations with size and tangibility and a negative link with profitability. Taken together, these findings reveal a financing landscape in which the pecking order is not merely a theoretical framework but a lived reality, shaped by the interplay of firm characteristics, market constraints, and the broader institutional environment of Palestine.

### 4.6 Robustness test: dynamic modeling

To further validate the empirical results, we estimated dynamic panel models using the system GMM estimator (Arellano and Bover 1995; Blundell and Bond 1998), which controls for potential endogeneity, unobserved heterogeneity, and dynamic adjustments in leverage. Table 7 reports the results for both debt-to-assets and liabilities-to-assets ratios.

The coefficients on the lagged dependent variables are positive and highly significant, indicating strong persistence in capital structure and slow adjustment toward target leverage. While the existence of adjustment behavior is consistent with the trade-off theory, the slow speed of adjustment suggests that it is not the primary determinant of capital structure (Abdeljawad and Mat Nor 2017). Instead, factors consistent with the pecking order theory, such as the financing deficit, play a more dominant role. POT also anticipates persistent leverage ratios, which is supported by our findings.

Across both specifications, profitability remains negatively and significantly associated with leverage, consistent with POT predictions. By contrast, traditional determinants such as tangibility, market-to-book ratio, and firm size exhibit weaker or statistically insignificant effects once leverage persistence is accounted for, indicating that their explanatory power diminishes in dynamic settings.

The diagnostic statistics confirm the validity of the instruments. The Hansen test fails to reject the null of instrument exogeneity ($p = 0.418$ and $0.202$), while the AR(2) test supports the absence of second-order serial correlation. As expected, AR(1)

**Table 7** GMM system estimation results

| Variables | (1) | (2) |
|---|---|---|
| | TD | TL |
| L.TD | 0.840*** | |
| | (0.099) | |
| L.TL | | 0.764*** |
| | | (0.108) |
| T | 0.038 | −0.045 |
| | (0.027) | (0.048) |
| MTB | −0.001 | 0.007 |
| | (0.002) | (0.021) |
| LS | 0.006* | 0.011 |
| | (0.003) | (0.007) |
| P | −0.097* | −0.463** |
| | (0.051) | (0.176) |
| Constant | −0.101* | −0.061 |
| | (0.057) | (0.110) |
| Observations | 300 | 300 |
| Number of Instruments | 18 | 18 |
| Number of firm | 29 | 29 |
| AR1 p | 0.00454 | 0.0341 |
| AR2 p | 0.354 | 0.299 |
| Hansen p | 0.418 | 0.202 |

results are significant. Collectively, these results demonstrate that the main findings are robust to alternative estimation techniques, mitigating concerns related to simultaneity and reverse causality.

## 4.7  Robustness test: lagged independent variables

As an additional robustness check, we re-estimated the leverage models using one-year lagged independent variables to mitigate concerns over simultaneity and reverse causality (Abdeljawad and Mat Nor 2017). The results, presented in Table 8, are largely consistent with the main findings, reinforcing the empirical validity of the pecking order framework in the Palestinian context.

Lagged profitability remains negative and statistically significant in both specifications, aligning with the POT prediction that more profitable firms rely less on external debt. Lagged tangibility retains a strong positive effect on leverage, suggesting that asset-backed collateral continues to facilitate debt financing even when measured with a temporal lag. Firm size, as proxied by lagged sales, also exerts a positive and significant effect, indicating that larger firms maintain better access to debt markets. In contrast, the lagged market-to-book ratio remains insignificant, consistent with earlier results showing limited sensitivity of leverage to growth opportunities in this setting.

The explanatory power of the models remains strong, with adjusted $R^2$ values of 0.562 and 0.674, and F-statistics significant at the 1% level. These findings indicate that the observed relationships are not driven by contemporaneous correlations and

| Table 8 Lagged independent variables | Variable | TD | TL |
|---|---|---|---|
| | L.T | 0.237*** | 0.325*** |
| | | (0.061) | (0.116) |
| | L.MTB | −0.002 | 0.006 |
| | | (0.002) | (0.004) |
| | L.LS | 0.016** | 0.011 |
| | | (0.006) | (0.017) |
| | L.P | −0.280*** | −0.319** |
| | | (0.090) | (0.134) |
| | Constant | −0.290** | −0.071 |
| | | (0.117) | (0.296) |
| | R-squared | 0.611 | 0.710 |
| Panel least squares with cross-section fixed (dummy variables) | Adjusted R-squared | 0.562 | 0.674 |
| | F-statistic | 12.420*** | 19.378*** |
| | Total panel (unbalanced) observations | 286 | 286 |

persist when allowing for a temporal gap between firm characteristics and capital structure decisions.

## 5 Conclusion

This study set out to revisit the pecking order theory (POT) in the context of an emerging economy characterized by chronic political instability, underdeveloped capital markets, and high dependence on bank financing. The findings affirm the enduring relevance of POT in explaining corporate financing decisions in emerging, high-risk environments. Using a comprehensive panel of Palestinian listed firms and robust estimation techniques, the study provides consistent and compelling support for the theory's central proposition: firms finance deficits primarily with debt, relying on equity only as a last resort. The financial deficit variable emerged as the dominant predictor of net debt issuance, overshadowing traditional determinants such as tangibility, profitability, and firm size when included in the model. Furthermore, the determinants of leverage levels were also consistent with POT predictions, reinforcing the view that in such environments the pecking order is not merely a preference but a necessity imposed by structural and institutional constraints.

From a theoretical perspective, the results extend the empirical scope of POT by demonstrating its robustness in a politically unstable, small-market setting. While much of the earlier literature tested POT in developed economies, this study shows that its predictions hold even when capital market infrastructure is weak and equity issuance is both costly and risky. The findings also highlight the value of integrating insights from agency theory and information asymmetry into POT testing, as financing choices in Palestine are shaped not only by cost hierarchies but also by the desire to preserve control and reduce information disadvantages. The dominance of the financial deficit variable underscores the importance of explicitly incorporating it into future capital structure models in emerging markets.

The practical and policy implications are equally significant. For policymakers, the reliance on debt highlights the urgent need to diversify financing channels available to Palestinian firms. Strengthening equity markets, enhancing investor protections, and reducing issuance costs could help rebalance the financing mix and lessen firms' dependence on bank lending, which remains costly and concentrated. Regulatory reforms to improve transparency and corporate governance would further reduce the information asymmetries that make equity unattractive. For managers, the evidence underscores the strategic importance of internal funds management: maintaining profitability and controlling dividend payouts can reduce reliance on debt, particularly in a volatile environment where debt servicing risks are heightened.

For financial institutions and investors, the study highlights systemic vulnerabilities. Banks remain the dominant source of external finance for Palestinian firms, but concentration in this channel exposes both lenders and borrowers to heightened risk during political or economic shocks. Expanding alternative debt instruments, and fostering venture capital and private equity ecosystems, could provide more resilient financing options and diversify systemic risk exposure.

This research is not without limitations. The analysis is based on a relatively small sample of 29 listed firms, which limits generalizability. The exclusion of post-2019 data, while necessary to avoid distortions from the COVID-19 pandemic and subsequent geopolitical crises, means that more recent financing behaviors under extreme uncertainty are not captured. Furthermore, the focus on listed firms omits potentially important financing dynamics among unlisted and family-owned businesses, which constitute a large share of the Palestinian economy.

These limitations suggest several directions for future research. Expanding the sample to include other politically unstable or conflict-affected economies would provide a more comprehensive view of financing behavior in high-risk contexts. Incorporating post-2019 data would allow examination of whether extreme crises amplify or weaken POT-consistent behavior. Comparative studies across MENA economies with differing levels of political risk and market development could also clarify the boundary conditions of the theory. Additionally, future work could explore the interaction between financing choices and governance structures, as well as the role of emerging alternative financing platforms in reshaping the hierarchy of funding sources.

**Author contributions**  Both authors wrote and reviewed the manuscript text.

## Declarations

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