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The trade-off behavior of capital structure in firms within politically unstable emerging countries

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Abstract

Purpose – This study investigates the capital structure behavior of nonfinancial firms in Jordan and Palestine, with a focus on the validity of the trade-off theory under institutional fragility, particularly the role of political instability in shaping financing decisions.

Design/methodology/approach – Drawing on an unbalanced panel of 166 non-financial firms (1,609 firm-year observations) from 2011 to 2021, the study examines the effects of firm-level factors (size, profitability, tangibility, growth, liquidity and non-debt tax shields) and country-level factors (GDP growth, inflation and political instability) on leverage. Both static and dynamic panel estimations are employed, including fixed effects and system GMM models, alongside robustness checks using two-stage least squares (2SLS) and sub-period analysis.

Findings – The results support the trade-off theory, showing that firms gradually adjust toward target leverage ratios. Political instability significantly reduces leverage, particularly long-term debt, highlighting the institutional constraints in fragile environments. However, the negative effect of profitability and the relatively slow speed of adjustment point to a dual influence of trade-off and pecking order theories in politically volatile contexts.

Research limitations/implications – The geographic scope may limit generalizability. Future research should include a broader set of politically unstable emerging economies and consider meta-analytic or mixed-method approaches to deepen understanding of capital structure behavior under institutional fragility.

Practical implications – The findings offer practical guidance for financial managers, investors and regulators operating in fragile institutional contexts. By revealing how political instability drives firms toward short-term debt and hampers capital structure optimization, the study emphasizes the importance of improving institutional stability to foster long-term financing and investment. These insights are particularly relevant for policymakers aiming to enhance financial resilience and investment capacity in politically unstable economies.

Social implications – By linking political conditions to corporate financing behavior, the study underscores how institutional stability can reduce borrowing costs, enhance capital formation and support sustainable economic development through greater private sector participation and job creation.

Originality/value – This study contributes to the literature by integrating political instability into capital structure modeling under static and dynamic versions of tradeoff theory, offering novel empirical insights from under-researched fragile emerging markets. By comparing two politically divergent but institutionally similar economies, it offers novel insights into how instability alters leverage behavior and highlights the importance of contextualizing traditional theories in environments characterized by political risk and institutional volatility.

Keywords Capital structure, Dynamic trade-off theory, Political instability, Jordan, Palestine

Paper type Research article

1. Introduction

Understanding how firms decide between debt and equity remains central to corporate finance research. The trade-off theory provides a widely accepted framework, positing that firms balance the tax advantages of debt against the potential costs of financial distress and agency conflicts to reach an optimal capital structure (Rajan and Zingales, 1995; Titman and Wessels, 1988). Firms are expected to adjust toward this target leverage ratio in response to internal and external shocks (Leary and Roberts, 2005; Abdeljawad and Nor, 2017), and evidence from developed markets confirms such behavior (Fama and French, 2002).

However, the extent to which this theory holds in politically unstable emerging economies remains underexplored. In such environments, institutional weaknesses, elevated uncertainty, and reliance on bank financing may distort traditional capital structure decisions. Political instability, in particular, increases perceived bankruptcy risk (Jeutang *et al.*, 2025), discouraging debt issuance and potentially weakening the predictive power of the trade-off

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model (Touil and Mamoghli, 2020). From an agency perspective, instability can also exacerbate conflicts between shareholders and creditors, further raising the cost of debt and incentivizing firms to deleverage. Conversely, in more politically stable settings, reduced risk premiums and lower borrowing costs may promote the use of long-term debt and allow firms to align more closely with theoretical predictions. Political stability can also foster more predictable legal enforcement and investor confidence, enhancing firms' ability to access capital markets and pursue optimal financing strategies (Çam and Özer, 2022).

Although alternative theories such as the pecking order model suggest that firms may prioritize internal financing due to information asymmetry, our study is grounded in the trade-off theory framework. We focus on how political instability alters the balance of benefits and costs in debt decisions, rather than exploring the hierarchy of financing sources. Alternative theories are referenced solely to provide a contrast and contextualize our findings.

Despite growing attention to institutional influences, the literature offers limited and sometimes inconsistent evidence on the specific mechanisms linking political risk to leverage. Existing research finds that firms in volatile industries or with erratic cash flows tend to maintain lower leverage ratios (Titman and Wessels, 1988). Similarly, Cashman *et al*. (2016) observe that firms operating in politically unstable environments generally avoid high debt levels. Çam and Özer (2022) find that firms in more stable countries often rely on long-term financing and display more balanced capital structures.

One underexplored dimension is how political instability affects corporate debt decisions based on maturity. In uncertain environments, firms may prefer short-term borrowing to maintain operational flexibility and avoid locking into long-term obligations. Gyimah *et al*. (2022), in a study on U.S. firms, demonstrate that heightened firm-specific political risk reduces both total and long-term leverage, leading firms to favor short-term debt structures. Similarly, Eldomiaty *et al*. (2025) provide evidence from G8 and MENA countries showing that political stability, when measured stochastically, negatively affects debt financing, especially in developing regions, where institutional fragility constrains long-term lending. This strategic shift reflects a risk management approach in which firms actively modify their financing behavior in response to macro-political uncertainty.

Building on this insight, the paper extends the analysis to emerging economies by posing two key questions: How does trade-off theory operate in fragile emerging markets? And does political instability distort the trade-off dynamics of capital structure? To address these questions, we analyze a panel of firms from Jordan and Palestine, two neighboring countries that share regulatory and institutional similarities but differ markedly in their political conditions. While Jordan has maintained relative stability compared to its regional peers, with functioning institutions, consistent regulatory enforcement, and moderate economic reform, Palestine, under Jordanian governance prior to 1967, has faced ongoing occupation, recurrent conflicts, and severe governance volatility ever since. This contrast is further exacerbated by limitations in fiscal sovereignty, restricted mobility of goods and labor, and fragmented administrative control across Palestinian territories. Despite broadly comparable financial and institutional environments, these divergent political realities create distinct operating conditions for firms. As such, this stark contrast in political stability offers a compelling and underexplored context to investigate how varying levels of political instability shape corporate capital structure decisions in otherwise similar institutional settings.

This study examines the capital structure of 166 non-financial firms in Jordan and Palestine over the period 2011–2021, based on 1,609 firm-year observations. It explores the influence of firm-specific and macroeconomic factors on leverage using static, OLS, and dynamic, system GMM, estimations, with robustness checks through two-stage least squares (2SLS) and sub-period analysis.

This study makes three main contributions. First, it provides novel evidence from an underexplored context, demonstrating how political instability alters the debt–equity trade-off in emerging markets, both in terms of overall leverage levels and debt maturity structure. Second, it examines the long-term equilibrium and short-term dynamic behavior of capital

structure under varying institutional conditions, offering insights into how firms adjust toward target leverage in fragile environments. Third, the study introduces a temporal robustness check by dividing the sample into sub-periods, capturing how recent political and economic turbulence further influences capital structure decisions in politically unstable settings.

The remainder of the paper is structured as follows. Section 2 reviews the relevant literature and presents the conceptual framework. Section 3 describes the data, variables, and methodology. Section 4 discusses the results. Section 5 concludes with key findings, policy implications, and future research directions.

2. Theoretical background

Capital structure theories are generally divided into two broad categories: those that assume firms aim for an optimal level of debt, and those that do not. The first group includes the trade-off theory (Kraus and Litzenberger, 1973), agency theory (Jensen and Meckling, 1976), and the free cash flow theory (Jensen, 1986). These frameworks posit that firms weigh the benefits of debt, such as tax shields and discipline on management, against its costs, including bankruptcy risk and agency problems, to determine an optimal capital structure. In contrast, theories such as the pecking order theory (Myers and Majluf, 1984) and equity market timing theory (Baker and Wurgler, 2002) suggest that capital structure evolves opportunistically without aiming for a specific target.

Although the latter theories offer valuable perspectives, they differ fundamentally from the trade-off framework. The pecking order theory emphasizes financing hierarchies shaped by information asymmetry, while the market timing theory posits that firms issue equity when market valuations are high. However, these theories do not assume a target leverage ratio or predict systematic adjustment behavior. Since our study aims to test the presence and dynamics of such target adjustment, particularly under political instability, we focus on the trade-off theory as the most appropriate conceptual lens. The other theories are acknowledged but not formally tested here to maintain analytical focus.

Tradeoff theory can be assessed through either static or dynamic models. Static models assume that firms operate around a fixed optimal leverage ratio, treating observed capital structures as reflections of long-run equilibrium conditions. Dynamic models, however, recognize that firms continuously adjust their capital structure in response to internal and external changes. These models capture the gradual correction process that occurs as firms deviate from and return toward their target leverage. Dynamic trade-off theory argues that firms possess a value-maximizing leverage target and incur costs when diverging from it. The process of correcting this divergence is measured by the speed of adjustment (SOA), which quantifies how much of the gap is closed in each period. A high SOA implies quick convergence to the target, while a low SOA suggests the presence of significant adjustment frictions, such as market volatility, regulatory constraints, or political instability (Leary and Roberts, 2005; Jeutang *et al*., 2025; Naser *et al*., 2024). Theories that do not assume an optimal leverage level typically yield weak or even negative SOA estimates, indicating that firms' financing decisions may be driven by short-term considerations or opportunistic behavior rather than by convergence to a fixed target.

2.1 Determinants of the target leverage

Empirical research has consistently highlighted a set of firm-specific and macroeconomic determinants that influence capital structure decisions. Among the most prominent are firm size, asset tangibility, profitability, growth opportunities, liquidity, and the availability of non-debt tax shields, which collectively capture a firm's financing capacity, risk profile, and tax planning behavior (Rajan and Zingales, 1995; Titman and Wessels, 1988; Fama and French, 2002). These variables are standard in capital structure models and remain relevant across both developed and emerging markets. In addition, recent studies emphasize the importance of

contextualizing these determinants within institutional settings, particularly in politically unstable or institutionally fragile environments, where legal enforcement is weak and access to long-term financing remains constrained (Alexeeva-Alexeev, 2023). Accordingly, our model includes both traditional firm-level factors and country-level institutional variables, such as political instability, to reflect the compounded effects of internal financial choices and external systemic risks on leverage behavior.

(1) Firm size

Within the trade-off theory framework, larger firms tend to carry more debt due to their greater diversification, more stable cash flows, and lower perceived bankruptcy risk (Rajan and Zingales, 1995; Titman and Wessels, 1988). These characteristics reduce the cost of financial distress and make creditors more willing to lend, resulting in higher leverage ratios. Additionally, larger firms typically have better access to capital markets and benefit from economies of scale in issuing debt.

From a dynamic perspective, firm size also influences the maturity structure of debt and the speed at which firms adjust toward their target leverage. Cotei and Farhat (2009) observed that among firms operating below their target leverage, larger firms were more likely to use long-term debt, whereas smaller firms relied more on short-term debt. Size had less effect on short-term debt adjustments for over-leveraged firms but remained significant for long-term leverage, indicating that larger firms adjust toward long-term targets more effectively (Cotei and Farhat, 2009).

Recent empirical evidence presents mixed results. Some studies confirm a positive relationship between firm size and leverage (Czerwonka and Jaworski, 2022; Gyimah *et al*., 2022), and others link firm size to faster speed of adjustment toward the target leverage (Iyoha *et al*., 2022). Conversely, Matemilola *et al*. (2024) report a negative correlation between size and leverage, and Alexeeva-Alexeev (2023) finds inconclusive evidence.

Given the theoretical expectations and empirical findings, this study tests the following hypothesis in the context of politically unstable emerging economies:

H1. Firm size is positively associated with leverage in non-financial firms in developing countries.

(2) Profitability

According to trade-off theory, profitable firms are expected to borrow more to benefit from the tax deductibility of interest and their reduced likelihood of financial distress. However, empirical evidence often contradicts this expectation. The pecking order theory (Myers and Majluf, 1984) offers a competing explanation, suggesting that firms prefer internal financing due to information asymmetry, resulting in a negative relationship between profitability and leverage.

This inverse relationship has been widely documented. Titman and Wessels (1988) and Rajan and Zingales (1995) found that more profitable firms tend to carry less debt, a finding also emphasized by Fama and French (2002) as inconsistent with the trade-off model. Nenu *et al*. (2018) similarly reported that profitability is negatively associated with both short- and long-term leverage, particularly in emerging and transition economies where information asymmetry remains high. Comparable findings in Spain (López-Gracia and Sogorb-Mira, 2008) and more recent studies (Alexeeva-Alexeev, 2023; Zandi *et al*., 2023) reaffirm that higher profitability often translates into lower leverage. Notably, Choi *et al*. (2024) showed that profitability's influence on capital structure is more pronounced in stable periods, while macroeconomic shocks can override this effect. Ghani *et al*. (2023) even identified profitability as the most influential determinant of leverage among several firm-level factors. Based on these insights, we test the following hypothesis:

H2. Profitability is negatively associated with leverage in non-financial firms in developing countries.

(3) Liquidity

From a trade-off perspective, higher liquidity lowers the probability of bankruptcy and may encourage firms to increase leverage. However, under the pecking order theory, firms with ample liquidity are more likely to rely on internal funds, reducing the need for external debt.

Empirical evidence tends to support the pecking order view. Studies in various contexts, including Italy (D'Amato, 2020), Pakistan (Sheikh and Wang, 2011), China (Liang *et al*., 2014), and Poland (Czerwonka and Jaworski, 2022), have consistently found a negative association between liquidity and leverage. Almustafa and Kalash (2025) investigated the dynamic interplay between cash holdings and leverage in MENA economies, supporting the pecking order theory and emphasizing that firms treat leverage as a substitute for internal cash buffers—particularly under financing constraints. These findings suggest that firms with strong liquidity positions often avoid borrowing, choosing instead to finance operations internally.

Nevertheless, the relationship is not universally robust. Chandra *et al*. (2019), examining Indonesian firms, reported no significant correlation between liquidity and capital structure. In some cases, liquid firms may prioritize short-term debt repayment or hoard cash for precautionary motives, rather than using liquidity to finance long-term growth. Additionally, excess liquidity may be interpreted by investors as a sign of inefficiency, prompting firms to limit external borrowing to preserve their reputation.

Despite such contextual variation, the dominant empirical pattern points toward a negative relationship between liquidity and leverage, particularly in emerging economies. Thus, we propose:

H3. Liquidity is negatively associated with capital structure in developing countries.

(4) Tangibility

Under both the trade-off and pecking order theories, asset tangibility plays a key role in capital structure decisions. Tangible assets, such as property, plant, and equipment, serve as collateral, reducing information asymmetry and lowering the perceived risk for lenders. This enhances a firm's ability to obtain debt financing, suggesting a positive relationship between tangibility and leverage (Rajan and Zingales, 1995; Abdeljawad *et al*., 2024a).

Empirical evidence generally supports this theoretical link. For instance, Cotei and Farhat (2009) showed that firms with higher tangible assets in the U.S. tend to carry more debt, as their increased collateral capacity makes borrowing less risky for creditors. Nonetheless, findings are not entirely consistent across contexts. Some studies, such as Czerwonka and Jaworski (2022) and Sheikh and Wang (2011), found a negative association between tangibility and leverage, while Chandra *et al*. (2019) observed no significant effect in Indonesia. These variations may reflect country-specific factors, such as the legal environment, financial market development, or differences in asset valuation and enforcement mechanisms.

Despite the mixed evidence, the theoretical expectation remains that greater tangibility supports higher leverage by reducing lenders' exposure to default risk. Based on this rationale, we propose:

H4. Tangibility is positively associated with capital structure in developing countries.

(5) Non-debt tax shield (NDTS)

Non-debt tax shields (NDTS), such as depreciation and investment tax credits, reduce firms' taxable income without the need to incur debt. According to trade-off theory, these tax-saving alternatives may serve as substitutes for interest tax shields, thereby weakening the incentive to use debt financing. In this context, firms with higher NDTS are expected to rely less on debt, leading to a negative association between NDTS and leverage.

Empirical studies generally support this substitution effect. For instance, Alexeeva-Alexeev (2023) and Moradi and Paulet (2019) found that higher NDTS are associated with lower leverage levels, consistent with the idea that firms use internal tax advantages to reduce their reliance on debt. Similarly, López-Gracia and Sogorb-Mira (2008) reported a negative relationship between NDTS and capital structure across non-financial firms.

However, the evidence is not entirely conclusive. Some researchers argue that NDTS do not always act as effective substitutes. Cotei and Farhat (2009) and Abdeljawad and Abed-Rabu (2019), for example, found a positive relationship between NDTS and leverage, suggesting that certain firms may use both types of tax shields in tandem. Furthermore, Zandi *et al*. (2023) reported an insignificant relationship, indicating that the impact of NDTS may depend on other firm-specific or country-level factors.

Despite these mixed findings, the dominant theoretical and empirical literature supports a negative relationship. Therefore, we hypothesize:

H5. NDTS are negatively related to capital structure in developing countries.

(6) Growth prospects

Growth opportunities, often considered intangible assets, enhance firm value but are typically non-collateralizable and do not generate immediate cash flows. As such, they may complicate debt financing decisions. According to Myers (1977), firms with high leverage face agency problems like asset substitution and underinvestment, where managers may pass up valuable growth projects to avoid increasing default risk. Consequently, firms with substantial growth prospects may avoid debt to minimize these agency conflicts and preserve flexibility.

Jensen's (1986) free cash flow theory further supports this view by suggesting that high-growth firms, which tend to generate less excess cash, require less debt discipline. Moreover, because growth assets cannot be easily used as collateral, lenders may perceive these firms as riskier, prompting greater reliance on equity financing.

In contrast, pecking order theory suggests a positive link between growth and leverage. When internal funds are insufficient to finance investment, firms with strong growth prospects may resort to debt before issuing equity, especially in information-asymmetric environments.

Empirical findings reflect this theoretical tension. While Rajan and Zingales (1995), Fama and French (2002), and Moradi and Paulet (2019) document a negative relationship between growth and leverage, particularly during periods of credit constraints, other studies find opposite or inconclusive results. For instance, Booth *et al*. (2001) report a positive relationship in developing countries, while Abdeljawad and Nor (2017), D'Amato (2020), and Czerwonka and Jaworski (2022) also observe positive effects. In contrast, Chandra *et al*. (2019) and Iyoha *et al*. (2022) find no significant relationship.

Given the mixed empirical evidence, we adopt the mainstream prediction of the trade-off theory and hypothesize:

H6. Asset growth is negatively related to capital structure in developing countries.

(7) Political Instability

Political instability can influence capital structure decisions through several interrelated channels. First, it raises the risk premium required by lenders and investors (Jeutang *et al*., 2025; Hillier and Loncan, 2019), thereby reducing firms' access to debt financing (Cashman *et al*., 2016). This constraint often limits capital accumulation and leads to lower leverage ratios. In such high-risk environments, firms may also exhibit a preference for equity over debt to minimize exposure to default risk and financial distress (Touil and Mamoghli, 2020), relying instead on retained earnings or equity issuance to fund operations (Cashman *et al*., 2016). Second, political instability generates regulatory uncertainty and weakens legal enforcement, which discourages long-term borrowing (Pacces, 2010; Gyimah *et al*., 2022). In response, firms may shift toward short-term debt to preserve financial flexibility and avoid

long-term commitments in unpredictable institutional environments (Çam and Özer, 2022). Eldomiaty *et al*. (2025) introduced the concept of stochastic institutional quality and found that political stability exerts a negative influence on debt financing in MENA firms, highlighting the importance of institutional volatility in shaping capital structure decisions. Third, political instability can strain the banking system, resulting in tighter credit conditions. As lenders become more risk-averse, firms encounter greater obstacles in securing external financing (Cashman *et al*., 2016), further constraining their ability to use debt. Finally, political instability and policy uncertainty undermine investor confidence by weakening the protection of property rights and diminishing expectations of stable returns. This discourages private investment (Feng, 2001) and reinforces firms' reliance on internal funding sources, thereby contributing to lower overall leverage.

These mechanisms are consistent with the trade-off theory, which asserts that firms determine their capital structure by balancing the benefits of debt, such as interest tax shields, against the risks of financial distress. In politically unstable environments, the heightened risk of bankruptcy discourages debt usage. From an agency theory perspective, political instability can also raise agency costs by increasing uncertainty and intensifying conflicts between equity holders and debt providers, further reducing firms' willingness to assume debt.

By contrast, the pecking order theory offers a more conservative interpretation. In politically stable economies, where firms typically have greater access to retained earnings and efficient capital markets, internal financing is often preferred. These firms tend to adopt conservative financial policies to preserve long-term sustainability and avoid distress, leading to lower leverage despite favorable borrowing conditions.

Empirical studies generally support these contrasting predictions. Titman and Wessels (1988) observed that firms with unstable operations or unpredictable cash flows tend to reduce debt exposure to mitigate financial risk. Cashman *et al*. (2016) found that firms operating in politically volatile countries typically maintain lower leverage ratios than those in stable environments. Complementing this, Çam and Özer (2022) noted that firms in politically stable countries with strong governance frameworks tend to rely more on long-term financing, moving away from short-term debt dependence.

Given the dual role of political instability, both as a source of risk and a signal of weak governance, we hypothesize a negative association with leverage. This study focuses on Jordan and Palestine, two emerging economies with broadly similar regulatory and institutional frameworks but starkly different political conditions. Palestine, under prolonged occupation and recurrent unrest, represents a high-risk political setting, while Jordan offers a comparatively stable environment. This contrast presents a unique opportunity to examine how political conditions shape capital structure decisions in otherwise comparable emerging markets. This study hypothesizes that:

H7. Political instability is negatively associated with leverage in developing countries.

(8). GDP Growth

Macroeconomic conditions, particularly GDP growth, play a critical role in shaping firms' capital structure decisions. In economies experiencing sustained growth, firms are more likely to encounter new investment opportunities that require long-term financing. From a trade-off theory perspective, robust economic growth improves cash flow predictability and reduces the perceived risk of bankruptcy. These favorable conditions enhance firms' ability to service debt and make them more attractive to lenders.

Empirical studies support this view. Higher GDP growth is often associated with increased investor confidence, lower default risk, and broader access to credit markets. In such environments, firms are better positioned to take on leverage to fund expansion without significantly increasing financial risk. Abdeljawad *et al*. (2024a), Hanousek and Shamshur (2011), and Mokhova and Zinecker (2014) all found a positive relationship between GDP

growth and leverage in emerging markets, confirming that macroeconomic stability supports a more debt-intensive capital structure. The hypothesis is:

H8. GDP growth is positively associated with corporate leverage in developing countries.

(9). Inflation

Inflation influences capital structure decisions in complex and often conflicting ways. On one hand, high inflation typically leads to increased interest rates, raising the cost of debt and prompting firms to rely more heavily on internal financing. This substitution effect suggests a negative relationship between inflation and leverage, particularly in markets where borrowing costs are highly sensitive to inflationary trends (Akinsola and Odhiambo, 2017).

On the other hand, inflation may also encourage borrowing in certain contexts. Debt repayment in nominal terms becomes cheaper over time as inflation erodes the real value of liabilities. Additionally, firms may increase debt usage as a strategy to benefit from the tax-deductibility of interest expenses during inflationary periods. This effect has been particularly relevant in emerging markets where financial reporting and taxation systems are less responsive to inflation adjustments.

Empirical research generally supports the latter view. Studies by Abdeljawad *et al*. (2024a), Hanousek and Shamshur (2011), and Mokhova and Zinecker (2014) report a positive correlation between inflation and leverage, especially when firms use debt strategically to reduce tax burdens or preserve liquidity amid rising costs. The hypothesis is:

H9. Inflation is positively associated with corporate leverage in developing countries.

2.2 Leverage dynamism

One of the most compelling arguments in favor of the trade-off theory lies in its dynamic perspective, namely, the idea that firms do not passively hold a certain capital structure but actively adjust toward a target leverage over time. According to this view, any deviation from the target leverage incurs costs, including financial distress, agency problems, and missed tax advantages. Firms, therefore, have an incentive to minimize such deviations through active rebalancing strategies.

However, adjustment is not costless. Realigning with the target leverage involves transaction and issuance costs, such as underwriting fees and administrative burdens, that can deter frequent changes. As a result, firms tend to adjust only when the cost of deviation outweighs the cost of capital structure adjustment (Leary and Roberts, 2005). This behavior reflects a partial adjustment mechanism, where leverage is gradually realigned to an optimal level.

Unlike pecking order or market timing theories, which do not predict systematic reversion to a target capital structure, the trade-off theory explicitly anticipates a measurable speed of adjustment (SOA). A higher SOA indicates more aggressive efforts by firms to correct leverage imbalances, thereby validating the presence of an optimal capital structure (Fama and French, 2002).

In this study, we empirically test whether firms exhibit such adjustment behavior by estimating the SOA within a dynamic partial adjustment model. Establishing the existence and magnitude of this adjustment will provide further evidence on whether firms in politically unstable contexts, such as Palestine and Jordan, still attempt to optimize their capital structure decisions in line with the trade-off theory. We tested the following hypothesis:

H10. Firms that deviate from their target leverage actively adjust their capital structure to reduce the deviation over time.

3. Research methodology

This section outlines the dataset, variable definitions, model specification, and estimation techniques used to assess how political instability and firm-level factors influence capital structure.

3.1 Data

The study draws on panel data from 166 non-financial firms listed in Palestine and Jordan, comprising 32 Palestinian and 134 Jordanian firms. Financial data were manually collected from publicly available annual reports retrieved from the official websites of the Palestine Exchange (PEX) and the Amman Stock Exchange (ASE). The sample covers the period from 2011 to 2021, resulting in 1,609 firm-year observations, 315 from Palestine and 1,294 from Jordan. The relatively small sample from Palestine reflects the limited number of listed firms, a common feature in empirical studies focused on the Palestinian market (Talalwa *et al*., 2024; Abdeljawad *et al*., 2024c; Abdeljawad and Abed-Rabu, 2019). The analysis focuses on non-financial firms to avoid distortions associated with the unique regulatory capital requirements of financial institutions. The inclusion of both countries offers a natural comparative setting: while Jordan and Palestine share similar regulatory, economic, and institutional frameworks, they differ markedly in political stability. This contrast enables a more precise assessment of how political conditions influence corporate leverage decisions.

3.2 Measurement of variables

The dependent variable is firm leverage, captured through three standard measures: Total leverage, Long-term leverage, and Short-term leverage. The explanatory variables include both firm-level factors (e.g. profitability, size, tangibility, growth, liquidity, and NDTS) and macroeconomic indicators (political instability, GDP growth, and inflation). These variables are operationalized following established literature, and detailed definitions along with data sources are provided in Table 1. Political Stability and Absence of Violence Index, from the Worldwide Governance Indicators, is used because it directly captures the likelihood of politically motivated unrest, terrorism, or government instability, factors that pose immediate threats to firms' operations and capital structures. Prior studies (e.g. Çam and Özer, 2022; Gyimah *et al*., 2022) show that such risks increase the cost of external financing and discourage long-term borrowing. Compared to other governance indicators like rule of law or regulatory quality, this variable more effectively reflects exogenous shocks that elevate bankruptcy risk, disrupt credit markets, and raise risk premiums, making it particularly relevant in the trade-off theory framework. Finally, all firm level characteristics are winsorized at the bottom and upper 1% to overcome the effect of outliers on results.

3.3 Research model

The static trade-off theory assumes that firms operate around a target (equilibrium) leverage ratio determined by firm-specific characteristics that proxy for the unobservable optimal capital structure (Fama and French, 2002; Flannery and Rangan, 2006). This target varies across firms and over time due to changing internal and external conditions. We begin with a static model (Model 1) to estimate the determinants of target leverage:

$$\begin{aligned}\text{Model 1 (Static Model)}: Lev^{*}_{i,t} &= \beta_1 + \beta_2 Growth_{it} + \beta_3 Profit_{it} + \beta_4 Tang_{it} + \beta_5 Size_{it} + \beta_6 Liq_{it} \\ &\quad + \beta_7 NDTS_{it} + \beta_6 Political\ instability_t + \beta_7 Inflation_t \\ &\quad + \beta_8 GDP\ Growth_t + \gamma_t + \varepsilon_{i,t} \qquad (1)\end{aligned}$$

where γ_t is year-fixed effects and other variables are self-explanatory as in Table 1.

The dynamic trade-off theory, by contrast, recognizes that adjusting to the target leverage is costly and occurs gradually. This adjustment process is captured using a partial adjustment model (Model 2):

Table 1. Summary of the measurement

Variables	Name	Measurement	References
Dependent variables			
Total Leverage	TotalLEV	Total liability/total assets	D'Amato (2020), Moradi and Paulet (2019), Nenu *et al*. (2018)
Short-term debt ratio	STLev	Current liabilities/total assets	Nenu *et al*. (2018)
Long-term debt ratio	LTLev	Long-term liabilities/total assets	Nenu *et al*. (2018)
Independent variables			
Firm size	SIZE	Logarithm total asset	Chandra *et al*. (2019), Cotei and Farhat (2009)
Profitability	ROA	Net income/total assets	López-Gracia and Sogorb-Mira (2008), Nenu *et al*. (2018)
Liquidity	LIQ	Current assets/current liability	Chandra *et al*. (2019), D'Amato (2020)
Tangibility	TAN	(Fixed assets- intangible assets)/Total assets	Cotei and Farhat (2009)
Non-debt tax shield	NDTS	annual depreciation expense/total assets	López-Gracia and Sogorb-Mira (2008), Moradi and Paulet (2019)
Growth on assets	GROW	$(assets_{(t)} - assets_{(t-1)})/assets_{(t-1)}$	Moradi and Paulet (2019)
Political Instability	Political Instability	Index of Perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism, which spans from −2.5 to 2.5 (World Bank)	Çam and Özer (2022)
GDP growth	GDP growth	Annual percentage growth rate of GDP (World Bank)	Abdeljawad *et al*. (2024a)
Inflation	Inflation	The annual percentage change in the average consumer's cost of purchasing a basket of goods and services (World Bank)	Abdeljawad *et al*. (2024a)

Source(s): Authors' own work

$$\text{Model 2 (Partial Adjustment)} : Lev_{i,t} - Lev_{i,t-1} = \delta\left(Lev^{*}_{i,t} - Lev_{i,t-1}\right) + \varepsilon_{i,t} \qquad (2)$$

where $Lev^{*}_{i,t}$ is the target leverage and δ is the average SOA to the target for each period for all firms. $Lev_{i,t}$ and $Lev_{i,t-1}$ represent the respective leverage ratios for the current and previous periods. The target leverage will be the fit value for model 1. The model suggests that each period's intended adjustment in leverage is only partially achieved. The SOA represents the fraction of adjustment completed in each period, where an SOA of 0 indicates no adjustment, and an SOA of 1 implies full adjustment within one period. Partial adjustment behavior is indicated when the SOA lies between 0 and 1.

By substituting the static model's fitted target into Model 2, we derive our main empirical specification (Model 3):

$$\text{Model 3 (Empirical Dynamic Model)} : Lev_{i,t} = \delta\beta X_{i,t} + (1-\delta)Lev_{i,t-1} + \varepsilon_{i,t} \qquad (3)$$

where the coefficient of the lag leverage is subtracted from one to get the SOA. $X_{i,t}$ refers to a set of variables used as exogenous regressors to estimate the target from Model 1 (Flannery and Rangan, 2006).

However, estimating Model 3 involves potential endogeneity concerns, particularly due to the inclusion of lagged dependent variables. To address this, the System GMM estimator is

recommended (Arellano and Bover, 1995; Blundell and Bond, 1998), which efficiently handles endogeneity, unobserved heterogeneity, and small time dimensions by combining equations in differences and in levels. We use lagged levels and differences of regressors as instruments and apply the robust two-step GMM estimator with Windmeijer's (2005) correction to ensure valid standard errors.

System GMM is particularly appropriate for our short unbalanced panel dataset. By exploiting the panel's time-series variation and avoiding reliance on potentially weak external instruments, it ensures estimator consistency and reliability in dynamic settings. Although Two-Stage Least Squares (2SLS) is a commonly applied method to address endogeneity in static panel regressions, it does not capture the dynamic adjustment processes associated with lagged leverage, which are central to the trade-off framework. Therefore, while 2SLS is employed in this study as a robustness check for the static models, System GMM is our primary method for estimating the dynamic model and evaluating the speed of adjustment toward target leverage.

To further test the temporal robustness of our findings, we conduct a sub-period analysis by splitting the sample into before 2018 and 2018–2021. This allows us to examine whether the determinants of leverage and the speed of adjustment vary across different phases, particularly in response to increased political instability in Palestine since 2018.

4. Findings

4.1 Descriptive statistics

The average leverage remained relatively stable for Jordanian firms but increased significantly for Palestinian firms over the study period, particularly after 2019, as shown in Table 2. This rise was largely driven by short-term debt as expected during instability periods (Gyimah *et al*., 2022; Çam and Özer, 2022), though it represents an unsustainable financing strategy. In contrast, Jordanian firms maintained a more stable leverage profile, suggesting a consistent financing approach. Across both countries, short-term liabilities dominate the debt structure, reflecting either a preference or a necessity for short-term borrowing, which may be linked to underdeveloped bond markets, cautious lending practices, or uncertainty in the investment climate.

Table 3 presents the descriptive statistics for the study's variables, providing insights into their central tendencies, dispersion, and distribution. For instance, the average total leverage among the sampled firms is 29.6%, with a short-term debt ratio of 20.6% and a long-term debt ratio of 8.9%. The liquidity ratio exhibits substantial variation across firms, with some holding excessive cash reserves. This suggests heterogeneous strategies: while some firms may rely on liquidity to reduce leverage, others may hoard cash due to uncertainty or limited investment opportunities. Additionally, the low and widely dispersed return on assets (ROA) points to the presence of many low-profit or loss-making firms, likely reinforcing dependence on internal financing. Finally, the broad range in political instability scores supports its inclusion as a key macro-level determinant in the regression analysis, capturing institutional and environmental differences that may affect capital structure decisions.

4.2 Correlation analysis

The correlation coefficients presented in Table 4 illustrate the bivariate relationships among the variables used in this study. The dependent variables, total leverage, short-term debt ratio, and long-term debt ratio, are strongly and positively correlated with each other, confirming the internal consistency of the leverage measures.

Total leverage is positively correlated with non-debt tax shields (NDTS), growth, and firm size, while showing negative correlations with return on assets (ROA), liquidity (LIQ), and tangibility (TAN). Among the macroeconomic variables, leverage is negatively correlated with GDP growth and political instability, and positively correlated with the inflation rate.

Table 2. Average short-term, long-term, and total leverage by country and year

	Palestine			Jordan			Both countries		
Year	Average of total leverage	Average of short term leverage	Average of long-term leverage	Average of total leverage	Average of short term leverage	Average of long-term leverage	Average of total leverage	Average of short term leverage	Average of long-term leverage
2012	0.308	0.202	0.105	0.287	0.195	0.087	0.291	0.196	0.091
2013	0.300	0.213	0.086	0.284	0.197	0.084	0.287	0.200	0.085
2014	0.311	0.218	0.093	0.279	0.195	0.081	0.285	0.200	0.083
2015	0.311	0.218	0.092	0.278	0.199	0.075	0.284	0.203	0.078
2016	0.316	0.217	0.099	0.276	0.197	0.076	0.284	0.201	0.080
2017	0.345	0.228	0.116	0.277	0.194	0.080	0.290	0.201	0.087
2018	0.354	0.237	0.117	0.285	0.200	0.081	0.299	0.207	0.089
2019	0.382	0.250	0.132	0.289	0.200	0.086	0.307	0.210	0.095
2020	0.381	0.259	0.122	0.298	0.201	0.093	0.314	0.212	0.099
2021	0.398	0.267	0.128	0.311	0.212	0.095	0.328	0.223	0.101
Average	*0.341*	*0.231*	*0.109*	*0.287*	*0.199*	*0.084*	*0.296*	*0.206*	*0.089*

Source(s): Authors' own work

Table 3. Descriptive statistics

Variable	Obs	Mean	Std. dev	Min	Max
TOTALLEV	1,609	0.296	0.227	0.004	0.942
LTLEV	1,609	0.089	0.135	0	0.682
STLEV	1,609	0.206	0.164	0.003	0.722
SIZE	1,609	17.012	1.477	13.561	20.851
ROA	1,609	0.013	0.073	−0.295	0.245
TAN	1,609	0.539	0.297	0	0.997
LIQ	1,609	5.158	12.203	0.025	89.892
NDTS	1,609	0.021	0.024	0	0.116
GROW	1,609	0.017	0.148	−0.391	0.727
Political instability	1,609	25.973	10.849	4.245	37.264
GDP growth	1,609	2.009	2.627	−11.318	8.865
Inflation	1,609	2.408	2.177	−3.707	8.954

Source(s): Authors' own work

The low correlations among the independent variables suggest that multicollinearity is unlikely to pose a problem in the regression analysis. To confirm this, we computed the Variance Inflation Factors (VIFs) for all independent variables included in the main regressions. The mean VIF was 1.16, with all individual VIFs well below the standard threshold of 5, indicating no serious multicollinearity concerns.

4.3 Estimation results

Table 5 presents the estimation results for six model specifications. Models 1–3 are static, while Models 4–6 are dynamic, analyzing total leverage, long-term leverage, and short-term leverage, respectively. For the dynamic models, the study reports both first-order and second-order autocorrelation. As expected, first-order autocorrelation is present, while second-order autocorrelation is negligible, satisfying a key requirement for the consistency of GMM estimators. To assess instrument validity, the Hansen test was applied to evaluate the null hypothesis that "all instruments are valid." The results indicate no rejection of the null hypothesis, confirming the appropriateness of the instrument set. The Two-Step System GMM estimator is employed following Roodman's (2009) recommendation, as it effectively addresses endogeneity, unobserved heterogeneity, and dynamic panel bias.

Firm size shows a consistently positive and significant effect on leverage across all models indicating that larger firms tend to carry higher debt levels. This result aligns with previous studies (Czerwonka and Jaworski, 2022; Cotei and Farhat, 2009) and supports the trade-off theory, which suggests that larger firms benefit from diversification and lower bankruptcy risk (Rajan and Zingales, 1995; Titman and Wessels, 1988). These firms also enjoy lower agency costs and economies of scale, making them more attractive to creditors.

Profitability, proxied by ROA, is negatively associated with leverage in all specifications, consistent with the pecking order theory (Myers and Majluf, 1984). More profitable firms prefer internal financing, reducing their reliance on external debt. This finding echoes the earlier empirical work (Nenu *et al*., 2018; López-Gracia and Sogorb-Mira, 2008) and is reinforced by more recent studies, such as Alexeeva-Alexeev (2023) and Zandi *et al*. (2023). This inverse relationship has been used by Myers (1984) and Fama and French (2002) to challenge the trade-off theory.

Asset tangibility (TAN) has a mixed effect. It is negatively significant in four models and positive in the other two, which contradicts the traditional trade-off theory that assumes tangible assets increase leverage by serving as collateral. These mixed results reflect prior evidence (Czerwonka and Jaworski, 2022; Sheikh and Wang, 2011; Chandra *et al*., 2019),

Table 4. Correlation coefficients

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) TOTALLEV	1.000											
(2) LTLEV	0.684	1.000										
(3) STLEV	0.766	0.067	1.000									
(4) SIZE	0.420	0.439	0.188	1.000								
(5) ROA	−0.127	−0.061	−0.119	0.242	1.000							
(6) TAN	−0.137	0.116	−0.281	−0.058	−0.224	1.000						
(7) LIQ	−0.291	−0.075	−0.346	−0.195	0.008	−0.170	1.000					
(8) NDTS	0.202	0.061	0.237	0.157	0.001	0.021	−0.201	1.000				
(9) GROW	0.145	0.156	0.054	0.148	0.419	−0.118	0.029	−0.070	1.000			
(10)Political Instability	−0.072	−0.057	−0.061	−0.055	−0.156	−0.104	0.065	−0.064	−0.118	1.000		
(11) GDP Growth	−0.023	−0.011	−0.022	−0.004	0.073	0.004	0.006	0.015	0.081	−0.217	1.000	
(12) Inflation	0.006	0.009	0.001	0.013	0.064	−0.004	−0.014	0.016	0.110	−0.218	0.337	1.000

Source(s): Authors' own work

Table 5. Estimation Results for main static and dynamic models

	Static models			Dynamic models		
	(1)	(2)	(3)	(4)	(5)	(6)
Variables	Totallev	LTLEV	STLEV	Totallev	LTLEV	STLEV
SIZE	0.0610***	0.0442***	0.0128***	0.009*	0.018***	0.005*
	(0.00407)	(0.00251)	(0.00304)	(0.005)	(0.004)	(0.003)
ROA	−1.133***	−0.421***	−0.657***	−0.473***	−0.219***	−0.381***
	(0.0895)	(0.0491)	(0.0631)	(0.062)	(0.040)	(0.054)
TAN	−0.167***	0.0537***	−0.221***	−0.024*	0.019*	−0.066***
	(0.0179)	(0.0118)	(0.0132)	(0.012)	(0.010)	(0.022)
GROW	0.337***	0.173***	0.137***	0.243***	0.108***	0.148***
	(0.0438)	(0.0320)	(0.0316)	(0.038)	(0.022)	(0.034)
NDTS	1.058***	0.0236	1.094***	0.161*	0.024	0.304**
	(0.204)	(0.118)	(0.154)	(0.094)	(0.091)	(0.134)
LIQ	−0.00411***	0.000517	−0.00478***	−0.001**	0.000	−0.002***
	(0.000512)	(0.000325)	(0.000393)	(0.000)	(0.000)	(0.001)
GDP Growth	0.000357	0.000482	−0.000175	−0.001	−0.000	−0.001
	(0.00244)	(0.00128)	(0.00187)	(0.000)	(0.000)	(0.001)
Inflation	0.00285	0.000671	0.00182	−0.001	−0.0001	0.0001
	(0.00331)	(0.00172)	(0.00245)	(0.001)	(0.000)	(0.001)
Political Instability	−0.00228***	−0.000646***	−0.00178***	−0.0001	−0.0001	−0.001**
	(0.000425)	(0.000247)	(0.000317)	(0.000)	(0.000)	(0.000)
L.TOTALLEV				0.886***		
				(0.075)		
L.LTLEV					0.627***	
					(0.080)	
L.STLEV						0.712***
						(0.097)
Constant	−0.611***	−0.681***	0.139**	−0.091	−0.269***	0.038
	(0.0757)	(0.0466)	(0.0558)	(0.056)	(0.067)	(0.045)
Speed of adjustments	–	–	–	11.4%	37.3%	28.8%
Year dummy	yes	yes	yes			
Observations	1,609	1,609	1,609	1,608	1,608	1,608
R-squared	0.373	0.275	0.344			
Number of firm				166	166	166
ar1 *p*				0.0001	0.0001	0.00009
ar2 *p*				0.645	0.586	0.892
Hansen p				0.200	0.726	0.222

Note(s): Robust standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Source(s): Authors' own work

suggesting that in the studied context, tangibility may not reliably reduce perceived risk or may not be sufficiently liquid to support borrowing.

Growth opportunities (GROW) exhibit a consistently positive effect across both static and dynamic specifications, contrasting with earlier findings of a negative relationship (Moradi and Paulet, 2019). Our results are more aligned with studies in emerging markets (Abdeljawad and Nor, 2017; Czerwonka and Jaworski, 2022; D'Amato, 2020), where growing firms often actively leverage external financing to fund expansion. This also implies that in financially constrained environments (Abdeljawad *et al*., 2024d), firms may turn to debt markets through banks to capitalize on growth opportunities, contradicting the pecking order theory's expectation that high-growth firms should prefer equity or internal funds.

Non-debt tax shields (NDTS) are significant only in the total and short-term leverage models, supporting the notion that firms may substitute debt with tax-deductible items such as

depreciation. However, the inconsistency across models echoes the findings of Zandi *et al*. (2023), who reported that NDTS had limited explanatory power in capital structure models.

Liquidity exhibits a negative effect in both the static and dynamic models, particularly in relation to total and short-term leverage, while its association with long-term leverage is statistically insignificant. This pattern suggests that firms with greater internal liquidity are more likely to avoid external borrowing, consistent with the predictions of the pecking order theory. As noted by Chandra *et al*. (2019), liquidity may either be underutilized or deliberately preserved to maintain operational flexibility, thereby reducing reliance on debt financing.

Macroeconomic indicators, namely GDP growth and inflation, are largely insignificant in our models. These findings are consistent with those of Abdeljawad *et al*. (2024b), who reported similar patterns for Jordanian and Palestinian firms.

Political instability has a significant negative impact on leverage in the static models and in one dynamic model focused on short-term leverage. This suggests that rising political instability discourages borrowing, likely due to heightened risk perceptions among lenders and greater uncertainty regarding future cash flows. This finding supports both trade-off and agency theories, as instability increases the risk of financial distress and raises borrowing costs (Cashman *et al*., 2016). Çam and Özer (2022) similarly found that firms operating in politically unstable environments tend to rely less on long-term finance, turning instead to short-term instruments or internal funds.

Lagged leverage variables in the dynamic models are strongly significant, indicating a high degree of persistence in firms' capital structure decisions. The estimated speed of adjustment (SOA), 14% for total leverage, 37.3% for long-term leverage, and 28.8% for short-term leverage, suggests that firms do not immediately revert to their target capital structures. Instead, they face frictions that slow the adjustment process. The relatively slow SOA for total leverage may reflect broader political and financial uncertainty, while the faster adjustment in long- and short-term debt points to selective rebalancing strategies based on debt maturity structure.

This behavior aligns with the predictions of the trade-off theory, which posits that firms gradually adjust toward an optimal leverage level. However, the slow pace of adjustment also reflects the presence of adjustment costs and institutional constraints, particularly in politically unstable environments, thereby reinforcing the core premise of the study. Moreover, the sluggish adjustment process may indicate that firms prioritize concerns related to information asymmetry, an explanation consistent with the pecking order theory (Abdeljawad and Nor, 2017).

Fama and French (2002) argued that slow adjustment speeds are insufficient to fully validate or dismiss the trade-off theory. In line with this view, our findings support the coexistence of both trade-off and pecking order theories in explaining capital structure decisions. Ultimately, the empirical evidence confirms that firm-specific characteristics, such as size, profitability, growth, and liquidity, play a central role, while institutional factors, particularly political instability, further shape financing behavior. This highlights the importance of incorporating contextual variables when applying capital structure theories in emerging and politically fragile markets like Palestine and Jordan.

4.4 Robustness check: addressing endogeneity of political instability

To ensure the reliability of our findings, we address potential endogeneity in the political instability variable by conducting a two-stage least squares (2SLS) regression, using the lagged value of political instability as an instrument. The chosen instrument passes all standard IV diagnostics. The Kleibergen-Paap LM statistic confirms that the model is identified ($p < 0.001$), while both the Cragg-Donald F-statistic and the Kleibergen-Paap Wald F-statistic far exceed the Stock-Yogo critical values, effectively ruling out weak instrument concerns. Given that the model is exactly identified, the Hansen J-test is irrelevant. Notably, since all three models employ the same instrument to address the endogeneity of the same regressor, the

IV diagnostic statistics are identical across specifications, regardless of the leverage measure used. Robust standard errors are employed throughout to address potential heteroskedasticity.

The results, reported in Table 6, are consistent with our baseline estimations: political instability continues to exert a significant negative impact on total, long-term, and short-term leverage. This reinforces our earlier conclusion that heightened political instability discourages corporate borrowing. The robustness of these results strengthens the validity of our inference regarding the role of institutional context in shaping capital structure decisions.

4.5 Robustness check: sensitivity to study period

To examine whether the results are sensitive to the chosen time frame, we re-estimated the models over two sub-periods: before 2018 and from 2018 to 2021. As shown in Table 7, the core findings remain consistent across both periods. Political instability continues to exert a significant negative influence on leverage, particularly on long-term debt, with its effect becoming more pronounced in the post-2018 period, highlighting firms' increasing sensitivity to institutional volatility. Likewise, firm-specific variables such as size, profitability, tangibility, and growth retain their expected signs and significance across both sub-samples. These results confirm that our main conclusions are robust and not driven by any particular segment of the overall study period.

Table 6. The results of static models using two-stage least square

Variables	(1) Totallev	(2) LTLEV	(3) STLEV
Political Instability	−0.00226***	−0.000616**	−0.00178***
	(0.000423)	(0.000247)	(0.000314)
SIZE	0.0610***	0.0442***	0.0128***
	(0.00404)	(0.00250)	(0.00303)
ROA	−1.133***	−0.420***	−0.657***
	(0.0889)	(0.0488)	(0.0627)
TAN	−0.167***	0.0538***	−0.221***
	(0.0178)	(0.0117)	(0.0131)
GROW	0.337***	0.173***	0.137***
	(0.0435)	(0.0318)	(0.0314)
NDTS	1.059***	0.0243	1.094***
	(0.203)	(0.117)	(0.153)
LIQ	−0.00411***	0.000516	−0.00478***
	(0.000509)	(0.000323)	(0.000391)
GDP growth	0.000359	0.000484	−0.000175
	(0.00243)	(0.00127)	(0.00186)
Inflation	0.00290	0.000721	0.00182
	(0.00328)	(0.00171)	(0.00244)
Constant	−0.611***	−0.682***	0.139**
	(0.0751)	(0.0463)	(0.0553)
Year fixed effect	yes	yes	yes
Observations	1,609	1,609	1,609
R-squared	0.373	0.275	0.344
Underidentification test (K-P LM χ^2, *p*-value)	438.328 ($p = 0.000$)		
Weak instrument test (Cragg-Donald F)	130,000		
Weak instrument test (K-P Wald F)	45,000		
Stock-Yogo CV (10% maximal IV size)	16.38		
Overidentification test (Hansen J)	Exactly identified		

Note(s): Robust standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Source(s): Authors' own work

Table 7. Estimation results for two sub-periods

	Before 2018			2018–2021		
	(1)	(2)	(3)	(4)	(5)	(6)
Variables	TOTALLEV	LTLEV	STLEV	TOTALLEV	LTLEV	STLEV
SIZE	0.0587***	0.0428***	0.0126***	0.0632***	0.0454***	0.0133***
	(0.00522)	(0.00331)	(0.00392)	(0.00639)	(0.00381)	(0.00484)
ROA	−1.077***	−0.431***	−0.589***	−1.249***	−0.416***	−0.771***
	(0.114)	(0.0648)	(0.0763)	(0.144)	(0.0751)	(0.111)
TAN	−0.173***	0.0462***	−0.214***	−0.158***	0.0642***	−0.231***
	(0.0242)	(0.0159)	(0.0169)	(0.0263)	(0.0171)	(0.0212)
GROW	0.309***	0.144***	0.150***	0.411***	0.248***	0.106**
	(0.0516)	(0.0382)	(0.0385)	(0.0774)	(0.0538)	(0.0509)
NDTS	1.017***	−0.0987	1.154***	1.131***	0.244	0.983***
	(0.262)	(0.148)	(0.187)	(0.329)	(0.192)	(0.272)
LIQ	−0.00428***	0.000526	−0.00480***	−0.00386***	0.000469	−0.00470***
	(0.000738)	(0.000458)	(0.000534)	(0.000646)	(0.000423)	(0.000577)
GDP growth	0.00153	0.00119	0.000317	0.00127	0.00128	−0.000131
	(0.00406)	(0.00253)	(0.00284)	(0.00373)	(0.00179)	(0.00293)
Inflation	0.00181	0.00103	0.000672	0.000462	−0.00182	0.00204
	(0.00567)	(0.00350)	(0.00401)	(0.00557)	(0.00290)	(0.00433)
Political	−0.00187***	−0.000565	−0.00144***	−0.00281***	−0.000881*	−0.00208***
Instability	(0.000691)	(0.000443)	(0.000490)	(0.000857)	(0.000468)	(0.000661)
Constant	−0.575***	−0.654***	0.132*	−0.609***	−0.697***	0.170*
	(0.0992)	(0.0628)	(0.0717)	(0.118)	(0.0698)	(0.0885)
Year fixed effect	yes	yes	yes	yes	yes	yes
Observations	954	954	954	655	655	655
R-squared	0.348	0.229	0.349	0.407	0.351	0.340

Note(s): Robust standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Source(s): Authors' own work

5. Conclusions

This study contributes to the ongoing literature on capital structure by examining how firm-specific and institutional factors, particularly political instability, shape financing decisions in two emerging but fragile economies: Jordan and Palestine utilizing both static and dynamic versions of trade-off theory. Key firm-level determinants—including size, profitability, asset tangibility, growth, liquidity, and non-debt tax shields—were analyzed alongside macroeconomic and institutional variables such as inflation, GDP growth, and political instability.

The results support the trade-off theory, especially through the significant role of firm size and the observed adjustment toward target leverage. However, slow speeds of adjustment and strong negative effects of profitability suggest that pecking order behavior also plays a role, particularly in politically unstable environments. Political instability emerged as a critical institutional factor, consistently and negatively associated with leverage. These findings reflect a dual financing logic and illustrate how capital structure decisions are shaped by both firm fundamentals and contextual risks. Robustness checks, using two-stage least squares (2SLS) to address endogeneity, as well as sub-period analyses, confirmed the reliability of these findings. Moreover, leverage persistence observed in dynamic models reflects adjustment frictions likely arising from heightened uncertainty, risk exposure, and capital market constraints.

5.1 Theoretical contributions

This study contributes to the growing body of literature on capital structure in emerging and politically unstable markets by emphasizing the need to contextualize traditional theoretical

frameworks. While the trade-off and pecking order theories remain relevant, the findings point to a hybrid financing behavior shaped by institutional realities such as political instability and information asymmetry. The significant role of political instability in shaping leverage decisions extends existing theories by underscoring the importance of institutional context in corporate financial behavior. These insights suggest that capital structure determinants in developing economies cannot be fully understood without considering the broader political and economic environment in which firms operate.

5.2 Practical contributions

For financial managers operating in Jordan, Palestine, and similar emerging economies, the findings offer actionable insights. The significant role of firm size and liquidity suggests that enhancing operational scale and internal financial flexibility is essential for securing stable financing, particularly when external conditions are unstable. Moreover, the strong impact of political instability on leverage decisions indicates that firms should actively monitor institutional risks and incorporate contingency planning and adaptive capital structures into their strategies. For policymakers, the results emphasize the importance of improving governance and political stability to foster investor confidence, reduce borrowing costs, and promote access to long-term financing. Development finance institutions and multilateral agencies can play a pivotal role by expanding access to political risk insurance and credit enhancement tools, especially in environments where private lenders are deterred by political uncertainty. These mechanisms can mitigate risk exposure, reduce borrowing costs, and enable creditworthy firms to secure long-term financing even under fragile institutional conditions.

5.3 Social contributions

At a broader societal level, the research underscores how political instability can constrain private sector growth by discouraging long-term investment and increasing reliance on short-term or internal financing. Stabilizing the political environment and fostering a more transparent financial infrastructure can reduce information asymmetries and promote a healthier corporate debt market. In turn, this enables more inclusive economic growth through increased private sector activity, capital investment, and employment generation, particularly in markets with historically fragile governance.

5.4 Research limitations and future directions

This study is constrained by the relatively small number of listed firms in Palestine, which may limit the generalizability of the findings. Future research could address this limitation by broadening the geographic scope to include other politically unstable emerging economies. Meta-analytic approaches may also prove valuable in synthesizing findings across countries and datasets to validate common patterns in capital structure behavior under political risk. Furthermore, mixed-method designs could offer complementary insights by capturing the qualitative dimensions of financing decisions in fragile institutional environments. Expanding the sample to include multiple developing regions would help confirm the robustness of institutional effects on capital structure. Future studies might also investigate how firm-level governance mechanisms interact with institutional contexts to shape financing decisions.

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