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Corporate Financial Resilience Under Incomplete Markets: A Theoretical Framework for Derivative-Constrained Emerging Markets

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Abstract

This paper develops a theoretical framework for corporate financial resilience under incomplete-market conditions, in which firm-specific equity derivatives are structurally unavailable or only weakly developed. Using the Romanian capital market and the Bucharest Stock Exchange (BSE) as a focal context rather than as the paper's sole relevance, the study links Tobin's q , liquidity policy, capital structure, ESG governance, and the domestic quasi-risk-free benchmark (R_f^{ROM}) to explain how firms may partly support financial flexibility when direct hedging instruments are missing. This is a conceptual framework paper: it does not provide empirical tests or validated firm-level results but instead formulates empirically testable propositions (P1–P4) and a future empirical research agenda. Building on selective hedging theory, Tobin's q investment theory ESG finance and organisational resilience research, the framework identifies six assumptions of the classical model that are violated and four limitations affecting q measurement on the BSE. Within thin and illiquid markets, Tobin's q is treated as a noisy, imperfect valuation signal rather than as a precise decision threshold. The paper contributes by delimiting the scope conditions under which classical q -based and selective-hedging assumptions weaken in derivative-constrained markets by reframing financial flexibility as a conditional resilience mechanism rather than a hedge substitute and by specifying falsifiable propositions for future empirical testing in the Romanian capital-market context.

Keywords: incomplete markets; conceptual framework; financial flexibility; corporate resilience; Tobin's q ; derivative-constrained markets; ESG governance; quasi-risk-free rate; emerging markets; Bucharest Stock Exchange



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1. Introduction

Corporate financial policy is typically analysed under the assumption of complete or near-complete markets, in which firms can hedge exposure-specific risks through traded derivative instruments. In many emerging and frontier economies, however, markets are materially incomplete: firm-specific equity derivatives are unavailable or only weakly developed, market liquidity is limited, and the domestic quasi-risk-free benchmark is

itself elevated and volatile. Under such conditions, the classical question of how much to hedge gives way to a more basic one—how firms build financial resilience when direct hedges are missing. This paper develops a theoretical framework for corporate financial resilience under incomplete-market conditions and uses the Romanian capital market as a focal setting, because firm-specific equity derivatives are unavailable or only weakly developed there, market liquidity is limited, and listed firms face a domestic quasi-risk-free benchmark that affects financing and investment decisions.

Firms listed on the Bucharest Stock Exchange (BSE) operate within a structural institutional environment rarely examined in mainstream corporate finance, namely the absence of individual equity derivatives. While selective hedging theory, from Smith and Stulz (1985) to Bartram et al. (2011), assumes the availability of exposure-specific hedging instruments, the BSE offers derivatives only on the BET index and provides no exchange-traded mechanism capable of hedging firm-specific equity exposure. Unlike the voluntary non-hedging behaviour documented by Brown et al. (2006) or the selective hedging practices analysed by Géczy et al. (2007), this limitation represents a systemic institutional constraint. Consequently, the central question shifts from determining the optimal level of hedging to understanding how firms can develop financial resilience when conventional hedging mechanisms are structurally unavailable.

Existing selective hedging literature generally assumes that firms operate in markets where derivative instruments exist, even if their use varies across firms because of cost, strategic choice, governance quality, or managerial incentives. This assumption is problematic in emerging markets where individual equity derivatives are structurally absent or only weakly developed. In such settings, firms cannot simply decide whether to hedge through standard instruments; instead, they must rely on alternative mechanisms of financial flexibility, liquidity preservation, capital-structure adjustment, and credible market signalling. This institutional condition remains insufficiently addressed in the corporate finance literature, and this is the gap this paper seeks to fill.

This study addresses this issue in the context of entrepreneurial firms listed on the BSE, defined as firms in which the founding shareholder retains at least 20% of voting rights while maintaining an active managerial role. The paper develops three principal contributions. The first contribution (C1) identifies six violated assumptions (A1–A6) of Tobin's separation theorem together with four limitations affecting the measurement of q (QL1–QL4) in the Romanian market and argues that Romania's quasi-risk-free benchmark R_f^{ROM} should be treated as a strategically consequential and volatile variable rather than as the passive and stable parameter assumed in classical financial models. The second contribution (C2) proposes a three-channel framework, including precautionary liquidity management, capital structure optimisation, and credible informational signalling, through which q -guided corporate market operations may partly support financial flexibility without substituting for derivative hedging. The third contribution (C3) integrates R_f^{ROM} volatility, ESG governance quality, and organisational resilience into a unified panel specification from which four falsifiable propositions (P1–P4) are derived for BSE-listed firms during the 2022–2025 period.

In summary, the paper makes the following contributions. It (i) clarifies why classical selective-hedging assumptions are weakened when individual equity derivatives are structurally unavailable rather than merely costly or strategically avoided; (ii) identifies the limitations that affect the measurement of Tobin's q under Romanian capital-market conditions; (iii) frames financial flexibility as a conditional mechanism that may partly support resilience when derivative hedging is unavailable; (iv) integrates Tobin's q , the Romanian quasi-risk-free benchmark R_f^{ROM} , ESG governance quality, and organisational

financial resilience into a unified theoretical architecture; and (v) develops empirically testable propositions together with a roadmap for their future empirical implementation.

The paper does not claim that liquidity buffers, capital-structure adjustment, equity issuance, repurchases, or signalling replace derivative hedging. Rather, these tools may partly support financial flexibility when exposure-specific hedges are unavailable: financial flexibility can buffer balance-sheet risk and financing constraints, but it does not remove exposure-specific risks in the same way as direct hedging instruments.

This paper is conceptual in nature. It develops an integrated framework and a set of falsifiable propositions (P1–P4) rather than reporting empirical tests, which are reserved for subsequent work. All directional expectations stated throughout, including the signs of λ and β_1 through β_7 , are theoretical priors to be evaluated by future empirical work, not estimated results; the illustrative firm and ESG figures reported in Section 3 describe the institutional setting and the prospective sampling universe rather than analysed evidence.

The remainder of the paper is organised as follows. Section 2 reviews the literature on selective hedging, Tobin's q , ESG governance, and organisational resilience, and identifies the theoretical gap. Section 3 describes the institutional context of the Romanian capital market. Section 4 develops the conceptual framework and the assumptions of classical corporate finance that are violated in the BSE setting. Section 5 formulates the testable propositions. Section 6 specifies the variables and the proposed empirical models. Section 7 outlines an empirical implementation roadmap. Section 8 discusses the theoretical, managerial, and policy implications. Section 9 sets out the limitations, and Section 10 concludes.

2. Literature Review and Gap

This section reviews the theoretical foundations of corporate risk management and selective hedging while identifying the institutional limitations that distinguish derivative-constrained emerging markets from the environments assumed in mainstream corporate finance literature.

2.1. Risk Management and Selective Hedging

Value-enhancing hedging reduces expected taxation, financial distress costs, and underinvestment incentives (Smith and Stulz 1985). Stulz (1996) demonstrated that firms engage in selective hedging when managers possess superior informational advantages regarding future market conditions. Empirical evidence further indicates that derivative usage is concentrated among larger firms characterised by higher financial sophistication and broader market access (Allayannis and Ofek 2001; Graham and Rogers 2002; Mian 1996). However, the literature implicitly assumes the availability of derivative instruments. Consequently, the dominant research question concerns whether firms should hedge and the optimal extent of hedging activity, rather than how firms respond when derivative-based risk management is institutionally inaccessible.

This limitation becomes particularly important in emerging markets characterised by incomplete financial infrastructures. Opler and Titman (1994) show that highly leveraged firms experience substantial market-share losses during economic downturns, while Purnanandam (2008) demonstrates that financially constrained firms prioritise investment continuity under conditions of heightened uncertainty. Collectively, these findings establish a direct connection between corporate risk management and financial flexibility, especially in environments where firms cannot rely on conventional derivative-based hedging mechanisms.

2.2. Investment Theory: Tobin's q

This subsection reviews the evolution of investment theory from portfolio optimisation to liquidity-constrained corporate finance, highlighting the role of q as a strategic investment signal under uncertainty and financial frictions.

Markowitz (1952) established the foundations of mean-variance portfolio selection, while Tobin (1958) extended this framework through the separation theorem. Subsequently, Tobin (1969) introduced q , defined as the ratio between a firm's market value and the replacement cost of its assets, proposing it as a central investment signal. Under this framework, $q > 1$ indicates that investment is expected to create value, whereas $q < 1$ suggests that returning capital to shareholders may be economically preferable.

Hayashi (1982) later formalised the equivalence between marginal and average q under conditions of competitive markets and convex adjustment costs. Abel and Eberly (1994) further extended the framework by incorporating uncertainty into investment dynamics. More recently, Bolton et al. (2011) integrated q , corporate investment, financing decisions, and risk management into a unified model characterised by liquidity constraints. Their framework demonstrates that financially constrained firms treat cash holdings as strategically valuable assets, thereby providing the theoretical foundation for Channel I within the present study.

Throughout, q is operationalised as an approximate Tobin's q (a market-to-book proxy) rather than the theoretical construct of Tobin (1969). Because firm-level replacement-cost data are unavailable for BSE-listed firms, the book value of total assets is substituted for replacement cost, so q is a market-to-book ratio that departs from true Tobin's q whenever book assets diverge from replacement cost—notably under conservative IFRS intangible recognition (QL2). Accordingly, q is interpreted only as a directional valuation signal (the sign of $q - 1$), and the threshold $q = 1$ delimits a fuzzy q -neutral band rather than an exact structural cut-off.

In thin and illiquid markets, q should be read as a persistent valuation signal rather than as a precise decision threshold: low trading frequency, price noise, ownership concentration, and limited analyst coverage may all weaken the informational content of market prices. Future empirical tests should therefore rely on persistent or smoothed valuation indicators—lagged q , industry-adjusted q , market-to-book alternatives, and accounting-based valuation proxies—as robustness checks. Relatedly, issuance and repurchase decisions need not be mechanically symmetric: equity issuance is typically associated with high-valuation signals, financing needs, and market access, whereas repurchases are associated with undervaluation signals, excess liquidity, and signalling incentives. The framework therefore treats q as informing, rather than mechanically determining, corporate market operations.

2.3. ESG Finance and Organisational Resilience

This subsection examines the relationship between ESG quality, financing conditions, and organisational resilience, with particular emphasis on emerging markets characterised by limited financial infrastructure and restricted external monitoring mechanisms.

El Ghoul et al. (2011) show that higher ESG scores reduce the cost of equity for U.S.-listed firms through lower idiosyncratic risk and a broader investor base. Friede et al. (2015), synthesising approximately two thousand studies report that nearly 90% of ESG-financial performance relationships are non-negative. However, these findings are concentrated primarily in developed markets characterised by mature ESG infrastructures.

For the BSE, where Sustainalytics coverage began only in February 2022 and includes approximately 12–15 firms, the relationship between ESG quality and cost of capital should

be treated as an empirically testable proposition. Accordingly, the null condition $\lambda = 0$ is maintained alongside the directional expectation $\lambda < 0$, following [Berg et al. \(2022\)](#), who document substantial divergence across ESG rating methodologies.

In derivative-constrained markets, ESG additionally functions as a governance credibility signal. In developed financial systems, derivative participation generates external monitoring through counterparty due diligence and market discipline. By contrast, for BSE-listed firms, ESG ratings represent one of the few externally validated indicators of governance quality available to outside investors, thereby establishing a direct theoretical connection between ESG quality and constraint A1 (Table 2, Section 4.1).

[Bruneau et al. \(2003\)](#) propose a resilience taxonomy composed of robustness, rapidity, resourcefulness, and redundancy, later adapted to corporate finance by [Conz and Magnani \(2020\)](#). The present study focuses primarily on the robustness dimension of organisational financial resilience, operationalised in the proposed empirical framework through EBIT/TA as the primary operating-resilience proxy, with the interest coverage ratio retained only as a diagnostic outcome because of its mechanical relation to debt-servicing and financing-structure changes.

2.4. Theoretical Gap

The selective hedging literature primarily addresses two situations, namely firms that voluntarily choose not to hedge ([Graham and Rogers 2002](#); [Mian 1996](#)) and firms constrained by the costs associated with derivative usage ([Adam et al. 2007](#); [Faulkender 2005](#)). Neither perspective examines firms operating in markets where individual equity derivatives are categorically absent as a financial instrument class. This institutional absence generates a fundamentally different challenge because financial flexibility, defined as the capacity to access, preserve, and restructure financing under favourable conditions ([Denis 2011](#); [Gamba and Triantis 2008](#)), becomes the central mechanism of corporate risk management. To our knowledge, prior literature has not yet developed an integrated conceptual framework explaining how firms construct financial resilience under the categorical absence of individual equity derivatives. We therefore frame the contribution as a context-specific theoretical extension rather than as established empirical evidence.

Taken together, these literature streams suggest that corporate financial resilience in emerging markets cannot be fully explained by models developed for liquid markets with mature derivative infrastructures. The missing link is a framework explaining how firms adjust when hedging is not merely costly or strategically avoided, but structurally unavailable as an instrument class—the condition this paper formalises.

Recent evidence on crisis-period corporate behaviour reinforces this positioning along four axes. Financial flexibility becomes especially valuable when revenues collapse or external financing becomes constrained ([Fahlenbrach et al. 2021](#)); ESG-related characteristics have likewise been linked to resilience during market-wide shocks, although the relationship is better read as conditional rather than automatic ([Albuquerque et al. 2020](#)); for entrepreneurial firms, founder-manager characteristics may shape investment decisions and market outcomes ([Fahlenbrach 2009](#)); and regulatory design and incentives can alter financial behaviour, underscoring that local market architecture matters for corporate finance decisions ([Hamdani et al. 2017](#)). Collectively, these studies are consistent with treating the Romanian setting not as a purely country-specific background but as a theoretically informative incomplete-market environment, in which the categorical absence of firm-specific equity derivatives motivates examining how financial flexibility, governance signals, and balance-sheet structure may partly support balance-sheet resilience when direct hedging instruments are unavailable. This framing is developed as a conceptual extension and a set of testable propositions rather than as validated empirical evidence.

3. Institutional Context

This section outlines the institutional characteristics of the Romanian capital market, focusing on the structural absence of individual equity derivatives and the operational definition of entrepreneurial firms used throughout the study.

3.1. BSE Structure, Derivative Absence, and Entrepreneurial Firm Definition

The Bucharest Stock Exchange (BSE) includes a main regulated market, represented by BET constituents, a premium tier, and the AeRO alternative market, comprising approximately 85–110 non-financial listed firms supervised under ASF and MiFID II regulations. Individual equity derivatives are absent from the Romanian market structure. According to the ASF Annual Capital Market Report (ASF 2023, pp. 47–52), BSE derivative products are limited exclusively to BET index futures and options. This absence reflects the limited economic viability of market-making activities on thinly traded underlying assets rather than explicit regulatory restrictions.

An entrepreneurial firm is operationally defined as a firm in which the founding shareholder retains at least 20% of voting rights while simultaneously exercising an active managerial role, including positions such as CEO, CFO, or executive member of the Supervisory Board. Ownership thresholds are verifiable through mandatory ASF disclosures, while managerial involvement is identified from ASF and BSE corporate filings.

The 20% threshold is adopted for three reasons. First, Romanian Companies Law (Legea nr. 31/1990) grants practical blocking power at this ownership level for major corporate decisions requiring a two-thirds supermajority. Second, IAS 28 recognises significant influence at ownership levels of at least 20%. Third, holdings exceeding 20% are subject to mandatory disclosure under the Transparency Directive. Additional thresholds of 15% and 30% are retained as robustness checks within the empirical analysis.

3.2. Romania's Quasi-Risk-Free Benchmark (R_f^{ROM})

This subsection defines the Romanian quasi-risk-free benchmark and explains the transmission channels through which its volatility influences corporate valuation, financing conditions, and organisational resilience in derivative-constrained markets.

Definition 1. R_f^{ROM} represents the Romanian domestic quasi-risk-free benchmark, operationalised through the yield of Romanian government bonds denominated in RON with maturities between one and three years, while ROBOR 3M is retained as a short-maturity alternative. Unlike the theoretical risk-free rate proposed by Tobin (1958), R_f^{ROM} is not free from sovereign or macroeconomic risk and may be approximated as

$$R_f^{ROM} \approx R_f^{EUR} + CDS_{Romania} + \pi_{excess}^e + LP_{domestic}$$

where R_f^{EUR} denotes the ECB deposit facility rate, $CDS_{Romania}$ represents Romania's sovereign credit default swap spread, π_{excess}^e captures excess Romanian inflation expectations relative to the euro area, and $LP_{domestic}$ reflects the liquidity premium embedded in the domestic RON-denominated bond market.

Four transmission mechanisms emerge from elevated and volatile R_f^{ROM} . First, rising benchmark rates may compress equity risk premia when stock returns fail to adjust proportionally. Second, higher discount rates reduce the present value of expected cash flows, particularly for high-growth firms. Third, financing costs increase through the cost-of-capital channel formalised in Equation (4). Fourth, elevated R_f^{ROM} generates differentiated resilience effects across firms. Cash-rich firms obtain higher returns on precautionary reserves, thereby benefiting from a growing carry advantage, whereas highly leveraged firms

experience amplified debt-servicing pressures. This fourth mechanism (M4) constitutes the theoretical foundation underlying Proposition P4.

3.3. ESG Infrastructure and Constructs

This subsection turns to the limited development of ESG reporting infrastructure on the BSE and to the distinct ESG constructs that the framework employs.

ESG disclosure on the BSE was structurally limited before 2022. Approximately 30% of listed firms reported the existence of an ESG strategy, while nearly 50% used no recognised sustainability reporting standard (PwC Romania 2022). Standardised ESG coverage emerged only in February 2022, when the BSE and Sustainalytics introduced ESG risk ratings for eight issuers (BVB/Sustainalytics 2022). By 2025, approximately 27 listed firms present verifiable ESG-related disclosures or ratings.

Following Christensen et al. (2022), the study distinguishes four operationally separate ESG constructs. The first construct, $ESG_{disclosure}$, is specified as a binary variable capturing the existence of any sustainability-related communication. Due to its limited construct validity, it is employed only as a control variable. The second construct, ESG_{score} , represents the Sustainalytics ESG risk rating (Sustainalytics 2025) and constitutes the primary variable used in testing Proposition P3, although coverage remains limited to approximately 12–15 firms. The third construct, ESG_{ESRS} , is defined as a binary indicator identifying firms publishing CSRD- or ESRS-compliant sustainability statements, covering approximately 10–12 firms and serving as an alternative specification for Proposition P3.

ESG governance should not be treated as a single homogeneous construct unless a defensible composite measure is available. Future empirical implementation should distinguish ESG disclosure, third-party ESG ratings, reporting-standard adoption, assurance practices, and governance quality, because each may capture a different mechanism through which outside stakeholders assess resilience and credibility; in the variable definitions of Section 6, the ESG construct is accordingly to be operationalised depending on data availability.

To avoid sign ambiguity, all continuous ESG specifications use a quality-increasing transformation of the Sustainalytics risk score S (where lower S denotes lower ESG risk), defined as $ESGq = 50 - S$, so that higher $ESGq$ unambiguously denotes higher ESG quality; the binary indicator $ESG = 1 [S \leq 25 \cup ESRS = 1]$ is retained as the primary low-dimensional measure. This binary indicator is not intended to collapse the underlying ESG constructs conceptually; it is retained as a pragmatic, low-dimensional proxy for future empirical implementation in a setting where Sustainalytics coverage and ESRS-compliant reporting remain sparse. The measure, therefore, reflects data availability constraints rather than a theoretical claim that third-party ESG ratings and the adoption of reporting standards capture the same mechanism. Where sample size permits, future empirical work should accordingly report the Sustainalytics-based score and the ESRS-reporting indicator as separate alternative specifications rather than only as the combined binary measure. The empirical framework distinguishes three nested populations that should not be conflated: (S1) BSE-listed issuers with verifiable ESG evidence, which provide descriptive institutional context (Table 1); (S2) non-financial operating firms, which form the prospective empirical base; and (S3) entrepreneurial firms in which a founder retains at least 20% of voting rights together with an active managerial role, which constitute the theoretical unit of analysis.

Table 1 should be read only as descriptive institutional context on the emerging ESG-information environment of the BSE: it is not the empirical sample for the proposed future tests and does not define the final entrepreneurial-firm population. Several issuers it lists, including state-controlled firms, banks, and investment funds, appear solely to illustrate the broader ESG-disclosure landscape and would be excluded from the entrepreneurial-firm

sample unless they satisfy the separate non-financial, founder-ownership, and active-managerial-role criteria.

Table 1. Illustrative BSE issuers with verifiable ESG evidence: descriptive institutional context, not the entrepreneurial study sample.

Ticker	Company	Sector	Key ESG Evidence	ESG_Score [AV]	ESG_ESRS	ESG_Assurance
SNP	OMV Petrom	Oil & Gas	IAR; GRI; TCFD; ESRS-partial; EU Taxonomy	31.4	1	1
SNG	Romgaz	Gas Production	SR; GRI Standards	34.8	0	0
TGN	Transgaz	Gas Transmission	SR; GRI; EU Taxonomy	27.2	1	1
TEL	Transelectrica	Electricity TSO	SR; GRI Standards	22.6	0	0
EL	Electrica	Electricity DSO	SR; GRI; EU Taxonomy	20.1	1	0
H2O	Hidroelectrica	Hydropower	SR; GRI; ESRS-voluntary (since IPO 2023)	14.3	1	0
SNN	Nuclearelectrica	Nuclear Energy	IAR; GRI Standards	21.5	1	0
BRD	BRD-GSG	Banking	SR; SG Group ESRS-aligned; GRI	22.8	1	1
TLV	Banca Transilvania	Banking	SR; GRI; ESRS-partial	19.4	1	1
FP	Fondul Proprietatea	Investment Fund	AR with ESG section; GRI partial	16.8	0	0
DIGI	Digi Communications	Telecom	SR; GRI Standards	24.1	1	0
ONE	One United Properties	Real Estate	SR; GRI; ESRS-voluntary	28.6	1	0
M	MedLife	Healthcare	SR; GRI Standards; ESRS-partial	22.3	1	0
SFG	Sphera Franchise Group	Food & Beverage	SR; GRI Standards	19.2	0	0
ATB	Antibiotice	Pharmaceuticals	SR; GRI Standards	18.7	0	0
TRP	Teraplast	Building Materials	ESG disclosure; GRI partial	25.4	0	0
AQ	Aquila	Logistics	ESG disclosure; GRI partial	23.7	0	0
COTE	Conpet	Oil Transport	SR; GRI Standards	26.8	0	0
ALR	Alro	Aluminium	SR; GRI; EU Taxonomy	29.3	1	1
WINE	Purcari Wineries	Beverages	SR; GRI partial	20.5	0	0
BVB	Bursa de Valori București	Financial Services	SR; GRI partial	18.1	0	0
IMP	Impact Developer	Real Estate	ESG disclosure; sustainability section in AR	30.2	0	0

Note: Table 1 is used as a descriptive institutional mapping of BSE-listed companies with publicly verifiable ESG-related disclosure or ESG evidence. It does not constitute the final empirical sample and should not be interpreted as confirmation that all listed companies meet the entrepreneurial-firm criterion. Founder ownership and active managerial involvement are treated as separate sample-construction conditions to be verified in subsequent empirical implementation.

4. Conceptual Framework

This section develops the theoretical architecture of the study, linking derivative constraints, Tobin's q , ESG governance, the Romanian quasi-risk-free benchmark R_f^{ROM} , and organisational financial resilience into a single conceptual model. Section 4.1 isolates the classical assumptions that this institutional setting weakens or violates; Section 4.2 develops the three-channel financial-flexibility mechanism; and Section 4.3 differentiates the framework from the market-timing account. The integrated logic of the proposed framework is summarised in Figure 1, which links the derivative-constrained BSE environment, the violated assumptions of the classical model, q -guided corporate market operations, conditional financial flexibility mechanisms, and financial resilience outcomes.

4.1. Violated Conditions of the Classical Model

This subsection identifies the specific assumptions of classical corporate finance that are weakened or violated in the Romanian emerging-market context. Table 2 enumerates the six violated assumptions (A1–A6) and the four approximate- q measurement limitations (QL1–QL4) that jointly delimit where classical corporate finance logic ceases to apply on the BSE.

Table 2. Scope Conditions: Violated Assumptions and q -Measurement Limitations.

ID	Assumption/Limitation	Violation in BSE Context
A1	Market Completeness	Individual equity derivatives absent (ASF 2023, pp. 47–52).
A2	Liquidity	Thin trading outside BET-20; episodic price discovery; wide bid–ask spreads
A3	Risk-Free Asset Access	R_f^{ROM} contaminated: sovereign risk, inflation expectations, liquidity premium (Definition 1)
A4	Diversification Feasibility	Small listed universe; BET concentrated in energy, utilities, financials
A5	Information Symmetry	Founder-manager information advantage over outside investors (Myers and Majluf 1984)
A6	Governance Neutrality	Overconfidence (Malmendier and Tate 2005; Roll 1986) and entrenchment risk (Morck et al. 1988)
QL1	Thin-Trading Distortions	Price noise in q numerator; 20-day trailing average mitigates but does not eliminate
QL2	Intangible Understatement	Romanian IFRS conservative intangible treatment biases q denominator downward
QL3	Hayashi Equivalence Fails	Shadow financing cost (Fazzari et al. 1988) creates wedge between marginal and average q ; only directional signal ($q > 1/q < 1$) is valid
QL4	Single-Metric Reduction	q aggregates multi-dimensional firm value into scalar; directional signal preserved, precision lost

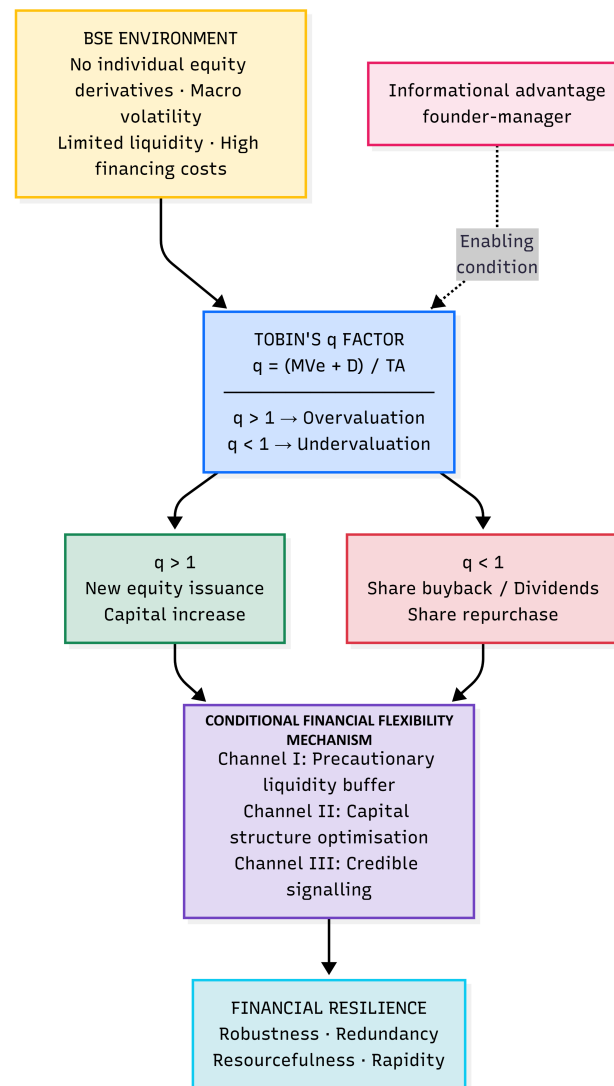


Figure 1. Integrated conceptual framework linking volatile R_f^{ROM} , violated assumptions (A1–A6), q -guided corporate market operations, ESG governance quality, and organisational financial resilience (*RESIL*), generating the empirical propositions P1–P4. Arrows indicate hypothesised directional links from market conditions to q -based decisions, flexibility mechanisms, and resilience outcomes. Source: authors’ own elaboration.

C1 converts the commonly acknowledged observation that “emerging markets differ” into an enumerable, bounded set of failure conditions. A6 generates within-sample testable heterogeneity: firms in the alignment ownership zone (20–33%) face incentives reinforcing q congruence (Jensen and Meckling 1976); firms in the entrenchment zone (>50%) may pursue q -incongruent buybacks for control consolidation (Morck et al. 1988).

4.2. The Three-Channel Financial Flexibility Mechanism (C2)

The mechanism operates through q -guided corporate market operations—issuances when $q > 1$, buybacks when $q < 1$ —as mechanisms that may partly support financial flexibility. The foundational intertemporal relationships are

$$FV = PV \times (1 + R_f)^t \quad (1)$$

$$PV = \frac{FV}{(1 + R_f)^t} \quad (2)$$

$$RP_i = R_i - R_f^{ROM} \quad (3)$$

Channel I—Precautionary Liquidity: When $q > 1$, equity issuance proceeds at premium to replacement cost, if partially retained as a deliberate precautionary reserve, may partly support the liquidity-assurance role otherwise served by derivative hedging. Bolton et al. (2011) establish the formal rationale: under costly external financing, retained cash has option value exceeding its book value for constrained firms. Almeida et al. (2004) document the operating cash flow sensitivity of precautionary saving; Channel I specifically concerns retention of issuance proceeds—a mechanistically distinct phenomenon requiring separate empirical identification.

Channel II—Capital Structure Optimization: When $q < 1$, buybacks at a discount to replacement cost reduce the equity base cost-efficiently, widening financial distress distance (Opler and Titman 1994; Purnanandam 2008). A governance qualification is necessary: in entrepreneurial firms with $\geq 20\%$ founding ownership, buybacks mechanically increase the founder's proportional stake—activating the Jensen (1986) free cash flow agency problem and potential Morck et al. (1988) entrenchment. Future empirical tests must include a governance moderator distinguishing buybacks below versus above Romanian legal control thresholds (33%, 50%, 75%).

Channel III—Credible Informational Signalling: The channel operates through two pathways differentiated by institutional development. The creditor signalling pathway is currently operative on the BSE: q -congruent operations signal financial health to bankers and trade creditors in private negotiations, reducing credit spreads and covenant stringency without requiring equity market institutional infrastructure. The equity investor base widening pathway (El Ghoul et al. 2011) is prospective: it activates as Pillar II pension fund ESG mandates develop (projected for 2025–2027), enabling equity risk premium reductions in response to governance quality signals. Empirical tests in 2022–2025 should focus on the creditor pathway.

The three channels are complementary: a $q > 1$ issuance simultaneously builds liquidity (I), moderates leverage pressure (II), and signals value recognition (III), with the combined effect exceeding any single channel in isolation.

Scope condition: The three channels address general financial flexibility. They can buffer balance-sheet risk and financing constraints, but they do not eliminate exposure-specific risks (foreign-exchange, interest-rate, commodity) in the way that direct derivative hedges do. The claim is that these operations may partly support financial flexibility, not that they are equivalent to, or substitutes for, exposure-specific hedging.

4.3. Differentiation from Market Timing

Unlike the market-timing interpretation of Baker and Wurgler (2002), the present framework does not treat q -guided operations solely as attempts to exploit transient mispricing. It predicts q -congruent corporate actions as resilience-preserving mechanisms under derivative constraints, including cases in which firms act within the q -neutral interval because liquidity, leverage, or creditor-signalling conditions deteriorate. This resilience-contingent prediction—operations inside the q -neutral band when organisational robustness declines—is the testable feature that distinguishes the framework from pure market timing, under which operations are predicted to be silent inside that band. The complementarity of the three channels and the scope condition limiting them to general financial flexibility are stated in Section 4.2 and are not repeated here.

5. Testable Propositions

The proposed framework generates four falsifiable propositions (P1–P4) that collectively define the empirical research agenda. None of these propositions has yet been

empirically tested; consequently, all statements should be interpreted as theoretical predictions rather than established findings.

5.1. Proposition P1: *q*-Congruence of Corporate Market Operations

Entrepreneurial firms listed on the BSE are expected to execute equity issuances when $q > 1$ and share repurchases when $q < 1$. Additionally, firms exhibiting *q*-congruent behaviour may continue to implement corporate market operations within the *q*-neutral interval when organisational resilience indicators deteriorate. This mechanism differentiates the framework from the market-timing interpretation proposed by Baker and Wurgler (2002). The theoretical justification derives from the combined logic of Channels I–III, according to which resilience preservation motivates corporate operations even under conditions where pure market-timing logic would predict inaction. To render this prediction falsifiable, the *q*-neutral interval is defined by explicit thresholds $q_L = 0.9$ and $q_U = 1.1$, and resilience deterioration is defined as a year-on-year decline in the primary resilience measure.

The 0.9–1.1 band is used as a pragmatic tolerance interval around the theoretical $q = 1$ benchmark: it reflects the measurement noise affecting approximate *q* in thin and illiquid markets (cf. QL1–QL4) and is consistent with the inaction region that arises, under costly external financing, from the wedge between marginal and average *q* (Bolton et al. 2011). Its purpose is to avoid treating small deviations from unity as economically meaningful valuation signals when observed prices may embed trading frictions and liquidity noise. Future empirical work should examine alternative neutral bands, such as 0.85–1.15 or 0.95–1.05, as robustness checks. P1 is falsified if corporate market operations exhibit no statistically or descriptively meaningful association with the *q*-regime and if deteriorating resilience indicators do not increase the probability of operations inside the $[q_L, q_U]$ interval.

5.2. Proposition P2: Precautionary Liquidity and Channel I

Among BSE-listed firms conducting *q*-congruent equity issuances, post-issuance cash-to-assets ratios are expected to remain systematically high relative to non-issuing firms characterised by similar *q* levels. This pattern would be consistent with deliberate precautionary liquidity retention. By contrast, incongruent issuances executed under $q \leq 1$ are not expected to generate the same effect, thereby providing an embedded falsification condition specific to Channel I.

5.3. Proposition P3 (Exploratory): ESG Governance Channel Under Limited Rating Coverage

Proposition P3 is treated as exploratory. The theoretically motivated expectation predicts $\lambda < 0$, implying that higher ESG quality reduces the cost of equity, consistent with El Ghouli et al. (2011). However, the null condition $\lambda = 0$ remains empirically plausible within the BSE context because of the still-limited ESG investor base and the small number of Sustainalytics-rated firms, approximately 12–15 observations. Consequently, the contribution of P3 concerns identifying the empirical sign and relevance of λ within the Romanian market rather than imposing a strong a priori prediction.

5.4. Proposition P4: R_f^{ROM} and Differentiated Organisational Resilience

The effect of the Romanian quasi-risk-free benchmark on financial resilience is expected to be conditional on firms' balance-sheet structure. Elevated and volatile R_f^{ROM} should therefore generate heterogeneous resilience outcomes across firms: higher benchmark rates are expected to be less adverse for cash-rich firms, implying a positive interaction between CASH and R_f^{ROM} , and more adverse for leverage-heavy firms, implying a negative interaction between LEV and R_f^{ROM} . This prediction differs from the standard assumption that rising benchmark rates uniformly weaken all firms because it explicitly focuses on

cross-sectional heterogeneity effects derived from transmission mechanism (M4) introduced in Section 3.2.

5.5. Framework-Level Falsification Criterion

The conceptual framework is considered falsified under either of two conditions. First, if P1 fails entirely and no statistically identifiable pattern of q -congruent corporate operations emerges, the behavioural foundation supporting all three channels collapses simultaneously, rendering the framework theoretically invalid. Second, falsification may also occur if both P2 and the leverage component of P4 fail concurrently while q demonstrates no predictive relevance across outcome variables, reflected by near-zero partial R^2 values in all empirical specifications. Isolated failures of P2, P3, or P4 independently would narrow the framework's scope conditions without fully invalidating the underlying theoretical structure. Future empirical implementations are encouraged to pre-register these falsification criteria through the Open Science Framework before data collection begins.

6. Model Specification and Variable Operationalisation

This section formalises the empirical specifications used to evaluate the theoretical propositions developed in the conceptual framework.

6.1. Cost-of-Capital Equation (P3)

The proposed cost-of-equity specification is

$$k_{e,i} = R_f^{ROM} + \beta_i \times ERP_m + \lambda \times ESG_i \quad (4)$$

where $k_{e,i}$ denotes the cost of equity for firm i , R_f^{ROM} represents the Romanian quasi-risk-free benchmark defined previously, β_i would be estimated using a 52-week rolling window of weekly BSE returns against the BET index, ERP_m denotes the BSE equity risk premium derived from historical excess BET returns, and λ captures the ESG-related adjustment to the cost of capital. The parameter λ would be evaluated under a two-sided null hypothesis $H_0 : \lambda = 0$.

Equation (4) represents an empirical extension of the CAPM framework rather than a formally derived multi-factor equilibrium model. Three methodological qualifications therefore constrain its interpretation. First, ESG-related information may already be partially embedded within β_i , creating potential double-counting effects that future estimations should address through orthogonalisation procedures. Second, the historical- β specification is operationally simpler than implied-cost-of-capital approaches such as El Ghoul et al. (2011), although it partially conflates expected and realised returns. Third, empirical implementation requires additional controls for firm size, leverage, and profitability to prevent ESG indicators from proxying correlated firm fundamentals. Fourth, because R_f^{ROM} is a common national series, Equation (4) is to be estimated with sector fixed effects but without year fixed effects so that the benchmark level is not collinear with year dummies.

6.2. Corrected Resilience Equation (P1, P2, P4)

The proposed organisational-resilience specification is

$$\begin{aligned} RESIL_{i,t} = & \alpha_i + \gamma_t + \beta_1 \cdot q_{i,t-1} + \beta_2 \cdot CMA_{i,t-1} + \beta_3 \cdot CASH_{i,t-1} + \beta_4 \cdot LEV_{i,t-1} + \beta_5 \cdot ESG_{i,t} \\ & + \beta_6 \cdot (CASH_{i,t-1} \times R_f^{ROM}_t) + \beta_7 \cdot (LEV_{i,t-1} \times R_f^{ROM}_t) + \epsilon_{i,t} \end{aligned} \quad (5)$$

The variable *HEDGE* is excluded from Equation (5) because individual equity derivatives are absent for all BSE firms across all sample periods (ASF 2023); *HEDGE* therefore

exhibits zero variance, and its inclusion would generate a singular $X'X$ matrix. By the same logic, the level R_f^{ROM} and its volatility $\sigma(R_f^{ROM})$ are omitted as stand-alone regressors: both are common macroeconomic series taking a single value across all firms in a given year and are therefore perfectly collinear with the year fixed effects γ_t . Their common effect is absorbed by γ_t , and the influence of R_f^{ROM} is identified only through the firm-by-time interactions $CASH \times R_f^{ROM}$ ($\beta_6 > 0$) and $LEV \times R_f^{ROM}$ ($\beta_7 < 0$); the level and volatility of R_f^{ROM} can be recovered only in specifications without year fixed effects (for example, with a parametric time trend). Firm fixed effects α_i absorb time-invariant heterogeneity, year fixed effects γ_t absorb common macroeconomic shocks, and standard errors are clustered at the firm level. Equation (5) is a proposed specification for future estimation; no coefficients are estimated in the present paper. The variables included in Equation (5), together with their operational definitions, data sources, lag structure, and expected coefficient signs, are summarised in Table 3.

Table 3. Variable Definitions.

Variable	Definition	Source	Lag	Expected β
$RESIL_{i,t} = EBIT_{i,t} / TA_{i,t}$	Operating resilience (primary DV); not mechanically tied to the financing mix. Robustness: Altman Z-score. Diagnostic only: interest coverage ratio $ICR = EBIT / \text{Interest Expense}$, which is mechanically correlated with debt-reducing operations and is therefore not used as the primary outcome. Winsorise first–99th pct.	ASF quarterly filings	-	-
$q_{i,t-1} = \frac{\overline{MktCap}_{i,t-1} + D_{i,t-1}}{TA_{i,t-1}}$	Twenty-day average market cap mitigates thin-trading noise. Test binary $q > 1$ indicator alongside continuous specification.	BVB prices; ASF annual reports	$t - 1$	Ambiguous
$CMA_{i,t-1} = \text{sgn}(q_{i,t-1} - 1) \cdot \frac{Op_{i,t-1}}{TA_{i,t-1}}$	Signed corporate market activity: Op = issuance proceeds if $q > 1$; Op = buyback expenditure if $q < 1$; zero otherwise. Mandatory decomposed robustness: ISSUE and BUYBACK entered separately.	ASF corporate action filings	$t - 1$	$\beta_2 > 0$
$CASH_{i,t-1} = \frac{\text{Cash}_{i,t-1} + STI_{i,t-1}}{TA_{i,t-1}}$	Cash plus short-term investments with maturity ≤ 90 days, scaled by total assets. Per Almeida et al. (2004).	ASF quarterly balance sheets	$t - 1$	$\beta_3 > 0$
$LEV_{i,t-1} = \frac{D_{i,t-1}}{TA_{i,t-1}}$	Book leverage: total financial debt scaled by total assets. Preestimation VIF diagnostic against q : if VIF > 10 , switch to market leverage.	ASF quarterly balance sheets	$t - 1$	$\beta_4 < 0$
$ESG_{i,t} = 1[S_{i,t} \leq 25 \cup ESR_{i,t} = 1]$	Primary binary: 1 if Sustainability risk score $S \leq 25$ OR ESR-compliant report; else 0. Secondary continuous: $ESGq = 50 - S$ (increasing in quality) for the ~15-firm subsample.	BVB Research Platform; company reports	Contemporaneous	$\beta_5 > 0$ (exploratory)
$CASH_{i,t-1} \times R_f^{ROM}$	Cash buffer $\times$ quasi-risk-free benchmark. Primary P4 moderation term; identified within year fixed effects.	Constructed	Mixed	$\beta_6 > 0$
$LEV_{i,t-1} \times R_f^{ROM}$	Leverage $\times$ quasi-risk-free benchmark. Primary P4 moderation term.	Constructed	Mixed	$\beta_7 < 0$

The ESG component in Equation (5) additionally captures a distinct operational mechanism, denoted as Sub-channel D. Under this mechanism, higher ESG governance quality may directly improve operating resilience by reducing operational disruptions associated with regulatory sanctions, environmental remediation costs, labour conflicts, or reputational instability. This effect operates independently from the capital-market transmission channel formalised in Equation (4).

To disentangle these mechanisms empirically, robustness estimations should implement two complementary specifications. First, $EBIT/TA$ should be estimated as the dependent variable with $ESG_{i,t}$ as the principal regressor, thereby isolating Sub-channel D. Second, $Interest Expense/TA$ should be estimated using k_e from Equation (4), thereby isolat-

ing the cost-of-capital transmission mechanism. Consequently, coefficient β_5 in Equation (5) is treated as exploratory and is not assigned a strong directional prior.

Interest coverage is too narrow to capture the full construct of organisational financial resilience. It is therefore retained only as one diagnostic outcome; future empirical work should consider broader outcomes—distress risk, financing costs, debt-rollover pressure, cash-flow shortfall risk, investment continuity, liquidity buffers, and a composite financial-flexibility index—operationalised as data availability permits, with *EBIT/TA* retained as the primary operating-resilience proxy.

7. Future Empirical Implementation Roadmap

This section presents a structured empirical research design rather than completed empirical evidence. The roadmap is prospective: it specifies how the theoretical propositions could be tested once firm-level data, ownership information, ESG indicators, market-liquidity measures, and macro-financial variables are assembled, and it should not be interpreted as evidence that the proposed relationships have already been validated. No proposition has yet been tested and no coefficient has been estimated.

7.1. Sample and Observation Period

The empirical sample consists of non-financial firms listed on the BSE satisfying two conditions. First, firms must report at least four consecutive years of audited IFRS financial statements during the 2022–2025 period. Second, firms must exhibit fewer than 20% zero-volume trading days, which serves as the thin-trading threshold required for reliable q estimation.

After applying the entrepreneurial-firm criterion, the expected sample includes approximately 40–55 firms for propositions P1, P2, and P4. The ESG-eligible subsample relevant for P3 is expected to include approximately 12–15 Sustainalytics-rated firms, with up to 27 firms presenting some form of verifiable ESG disclosure. The 2022–2025 interval is theoretically important because it represents the only period characterised simultaneously by standardised ESG coverage on the BSE, beginning in February 2022, and elevated, volatile R_f^{ROM} , including the BNR policy rate peak of 7.00%. These conditions are particularly relevant for evaluating the divergence mechanism underlying proposition P4.

Firms listed on the AeRO market face binding liquidity constraints; therefore, preliminary screening of BSE trading statistics should precede final sample selection.

7.2. Econometric Models

Model 1 would estimate Equation (5) using ordinary least squares with firm and year fixed effects together with clustered standard errors at the firm level.

Model 2 would evaluate proposition P1 through conditional logit estimation with fixed effects (Chamberlain 1980), separately estimating *ISSUE* and *BUYBACK* decisions to identify q -congruent behaviour.

Model 3 would estimate Equation (4) on the ESG-eligible subsample using ordinary least squares with sector fixed effects. A descriptive event-study design is additionally proposed around the February 2022 publication of BSE/Sustainalytics ESG ratings. Causal difference-in-differences identification would require a restricted eligible-firm control group, pre-trend validation for 2019–2021, and staggered estimators following Callaway and Sant’Anna (2021) or Sun and Abraham (2021).

7.3. Identification Challenges and Mitigation Strategy

Identification challenges are summarized in Table 4; primary mitigations include lagged q , PSM, Arellano–Bond GMM, and pre-registration of the falsification criterion.

At minimum, the empirical implementation should incorporate eleven robustness procedures designed to evaluate specification sensitivity and identification stability. These include (1) alternative q specifications using price-to-book and sector-adjusted q ; (2) Altman Z-score as an alternative dependent variable; (3) simultaneous estimation using three alternative R_f^{ROM} proxies; (4) restricting the sample to the BET main market; (5) pre- versus post-ESG implementation subsample analysis; (6) excluding energy and financial-sector firms; (7) adopting an alternative entrepreneurial-firm ownership threshold of 30%; (8) Arellano–Bond GMM estimation; (9) winsorisation at the first and 99th percentiles; (10) interaction estimation replacing $\sigma(R_f^{ROM}t)$ with $\sigma(R_f^{ROM}t) \times GPR_t$ (Caldara and Iacoviello 2022) in order to distinguish monetary-policy effects from geopolitical uncertainty effects within proposition P4; and (11) decomposed dependent-variable regressions using EBIT/TA and Interest Expense/TA separately to isolate ESG transmission mechanisms.

Table 4. Identification Challenges and Mitigations.

Proposition	Primary Threat	Mitigation	Residual Concern
P1	Reverse causality (issuance raises market cap $\rightarrow$ inflates q)	Lagged q_{t-1} ; IV: lagged sector-average q , lagged BET index	One-period lag may not fully break expectational endogeneity
P2	Omitted variable (pre-planned liquidity precedes both issuance and cash outcome)	PSM on pre-issuance CASH, SIZE, ROA, LEV; incongruent-issuance falsification	Unobservable strategic intent
P3	Selection bias (larger firms adopt ESG and independently have lower k_e)	PSM; event study; staggered DiD.	Matched sample ~ 8 treated firms—very small
P4	Simultaneity in CASH and LEV	Lagged $CASH_{t-1}$; R_f^{ROM} exogenous	Serial correlation means one-period lag may be insufficient
All	Survivorship bias	Document delistings 2022–2025; Heckman (1979) two-stage selection correction with inverse Mills ratio; IPW as alternative	Survivorship bias upward for $\beta_1 - \beta_7$; all estimates conditional on survival without correction

A specific identification question concerns how future empirical work might isolate the causal effect of financial flexibility (Channel C2) in the presence of mechanical measurement biases of resilience and low market liquidity. Such work should avoid relying exclusively on mechanically related resilience indicators such as the interest coverage ratio; operating-resilience proxies— $EBIT/TA$, cash-flow stability, investment continuity, or liquidity-adjusted performance measures—are preferable as primary outcomes. Low market liquidity should be addressed through liquidity controls, alternative q specifications, lagged market-valuation measures, and accounting-based robustness checks. Identification could be strengthened through firm fixed effects, year fixed effects, interaction terms, and, where institutional shocks permit, quasi-experimental designs. Any causal interpretation would nonetheless remain conditional on the availability of sufficiently granular firm-level data and on credible exogenous variation.

8. Discussion

Because the propositions are not empirically validated in this paper, the managerial and policy implications set out below should be interpreted as conditional implications derived from the theoretical framework rather than as evidence-based prescriptions. The implications are theoretical and conditional; they should not be read as empirical evidence that financial flexibility improves resilience in the Romanian market.

8.1. Theoretical Implications (C1–C3)

For q -theory, C1 converts the qualitative observation that “emerging markets differ” into a structured, bounded taxonomy of failure conditions (A1–A6, QL1–QL4) that precisely

delimits where classical theory requires extension. For risk management theory, C2 extends [Stulz \(1996\)](#), who theorized risk management for firms with derivative access, to the institutional scope condition where derivatives are absent, proposing a mechanism grounded in the same q -theory literature that Stulz's framework implicitly assumes. For financial flexibility theory, C3 proposes a panel specification integrating [Denis \(2011\)](#) and [Gamba and Triantis \(2008\)](#) with the BSE-specific Rf^{ROM} environment, connecting precautionary liquidity to resilience through the $CASH \times Rf^{ROM}$ interaction that is the framework's most distinctive testable proposition.

8.2. Managerial Implications

Conditional on future empirical confirmation of P1–P4, the framework may provide a preliminary decision architecture based on public data: (1) track q quarterly from BVB prices and ASF book values; (2) time corporate market operations against the q signal; (3) invest in verified ESG quality (Sustainalytics coverage, ESRS alignment) to position the firm for the prospective equity investor base widening of Channel III; (4) maintain Rf^{ROM} cash buffers in short-duration Romanian government instruments, generating the resilience carry advantage of M4. These principles remain conditional hypotheses, not validated recommendations.

8.3. Policy Implications

Should P1 be empirically confirmed in future work, three conditional implications for policy could be explored: (1) streamlining ASF buyback authorization to lower the operational cost of q -congruent operations, without compromising existing investor protection safeguards; (2) expanding BVB/Sustainalytics coverage to all BET constituents and liquid AeRO names, resolving the P3 statistical power constraint; (3) developing standardized individual equity options or futures for the most liquid BET names as a medium-term priority, restoring the first-best risk management instrument and enabling direct empirical comparison of resilience under derivative access versus absence. These implications are research agenda items, not lobbying positions.

9. Limitations

For readability, the limitations are grouped into four categories.

9.1. Data and Sample Limitations

Two constraints concern the data and the sample. First, the framework is conceptual: no proposition has yet been empirically tested, and the four-dimensional resilience taxonomy of [Bruneau et al. \(2003\)](#) is applied analogically to corporate finance, with only the robustness dimension operationalised; future empirical work should treat this mapping as a construct-validation task. Second, the ESG-eligible subsample is small—approximately 12–15 Sustainalytics-rated BSE firms, yielding roughly 48–60 firm-year observations, below the level required for 80% power to detect a medium ESG effect (about 200 observations)—so Proposition P3 is exploratory rather than confirmatory.

9.2. Measurement Limitations

Three constraints concern measurement. First, thin trading, intangible understatement, and the failure of Hayashi equivalence introduce non-classical measurement error in q that 20-day averaging does not fully remove, so the direction of bias in β_1 is unknown for the least liquid names. Second, the quasi-risk-free benchmark can be proxied by ROBOR 3M, the BNR policy rate, or the 3-year government bond yield, and the interaction coefficients β_6 and β_7 are sensitive to this choice; robustness across all three proxies is a minimum publication threshold for any empirical implementation of Equation (5). Third, the interest

coverage ratio is mechanically correlated with debt-reducing operations; for this reason, $EBIT/TA$, which is not a deterministic function of the financing mix, is adopted as the primary resilience outcome, with the interest coverage ratio retained only as a secondary diagnostic and the Altman Z-score as a composite robustness measure.

9.3. Identification and Causality Limitations

Because the framework is not estimated here, no causal claim is made. As discussed in Section 7, isolating the causal effect of financial flexibility would require operating-resilience outcomes that are not mechanically tied to the financing mix, liquidity controls and accounting-based robustness checks for low-liquidity names, and identification through firm and year fixed effects, interaction terms, and—where institutional shocks permit—quasi-experimental designs. Any causal interpretation remains conditional on sufficiently granular firm-level data and on credible exogenous variation.

9.4. Generalisability and Theoretical Scope

The propositions are calibrated to BSE-specific parameters, so generalisation to other CEE markets (for example, Warsaw, Prague, or Budapest) requires market-specific empirical confirmation. A further feature is better understood as a scope condition than as a weakness: the three-channel mechanism addresses general financial flexibility rather than exposure-specific risks (foreign-exchange, interest-rate, or commodity), and the focus on derivative-constrained emerging markets is an intentional theoretical boundary, not a defect of the model. The framework is designed for institutional contexts in which standard hedging instruments are unavailable or weakly developed.

These limitations do not invalidate the theoretical framework; they delimit the conditions under which the proposed propositions can be empirically tested.

10. Conclusions

This paper addresses the following: Through what mechanisms do BSE-listed entrepreneurial firms build and maintain financial resilience when individual equity derivative hedging is institutionally unavailable? We propose, rather than demonstrate, a conceptual framework generating three contributions and four falsifiable propositions.

The central contribution is not an empirical demonstration of resilience effects but a theoretically bounded framework specifying when and how financial flexibility may matter under structurally incomplete markets.

C1 documents the six violated assumptions (A1–A6) and four approximate-q measurement limitations (QL1–QL4) under which the classical q-based investment framework of Tobin (1969), building on the portfolio-separation logic of Tobin (1958), ceases to apply directly to BSE-listed firms, establishing Rf^{ROM} as a strategically consequential variable whose contamination components (sovereign risk, inflation expectations, liquidity premium) systematically depart from the stable theoretical benchmark.

C2 proposes three channels, precautionary liquidity, capital structure optimization, and credible informational signalling, through which q-guided corporate market operations may partly support liquidity assurance under conditions in which derivative hedging is unavailable.

C3 integrates Rf^{ROM} volatility, ESG governance quality, and the robustness dimension of the resilience taxonomy proposed by Bruneau et al. (2003) into a unified panel specification with four falsifiable propositions (P1–P4). The most distinctive prediction is P4's cross-sectional divergence: a higher Rf^{ROM} is expected to be associated with stronger resilience among cash-rich firms ($CASH \times Rf^{ROM}$) and weaker resilience among leverage-heavy firms ($LEV \times Rf^{ROM}$), a heterogeneous prediction that, to our knowledge, is not

emphasised by standard homogeneous models of monetary-policy transmission and is offered here as a hypothesis for future empirical testing.

The principal task for future research is to operationalise these constructs and test the propositions on BSE-listed firms using the roadmap of Section 7, addressing the q -measurement limitations and examining whether financial flexibility can partly support balance-sheet resilience in emerging-market settings where direct hedging instruments are unavailable; promising extensions include a comparative CEE study under varying degrees of derivative access and re-estimation of λ and the interaction parameters as ESG coverage broadens. The paper does not claim empirical validation but provides a structured conceptual basis for such testing. It should therefore be read as a conceptual contribution to corporate finance under incomplete-market conditions: its value lies not in providing empirical validation but in clarifying what should be tested, how financial flexibility may operate when direct hedges are missing, and which measurement problems future empirical work must address.

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