Firm Valuation Under Economic Policy Uncertainty

The Moderating Role of Financial Flexibility

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Abstract

This thesis examines how economic policy uncertainty (EPU) is associated with firm valuation in Europe and how this association is moderated by firms' financial flexibility, proxied by cash holdings and financial leverage. Using a panel of 104,197 firm-month observations over the period 2005 to 2025, we estimate fixed-effects regressions identified from within-firm, within-country-year variation in country-specific Baker et al. (2016) EPU indices. We document a robust negative association between EPU and Tobin's Q, find partial support for a positive moderation through cash holdings, and maturity-specific support for a negative moderation through financial leverage. The positive cash-based moderation is concentrated at intermediate levels and diminishes at the extremes of the distribution, though the statistical support is partial. Leverage-based moderation operates differentially across maturity components: firms with very low short-term leverage exhibit attenuated EPU sensitivity, while firms with high long-term leverage display the most negative sensitivity. The quantitative findings are complemented by qualitative evidence from eight semi-structured interviews with equity analysts and financial managers, who identify discount-rate premia as the main channel through which EPU depresses firm valuation, and point to liquidity buffers, agency costs, refinancing-risk exposure, and strategic preservation of debt capacity as the primary mechanisms through which financial flexibility can shape EPU exposure in practice.

Keywords: Economic Policy Uncertainty, Financial Flexibility, Firm Valuation, Cash Holdings, Financial Leverage

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TABLE OF CONTENTS

LIST OF ABBREVIATIONS

AI	Artificial Intelligence
CAPM	Capital Asset Pricing Model
CapEx	Capital Expenditures
CD	Cross-sectional Dependence
CFO	Chief Financial Officer
DE	Germany
DTR	Disclosure Guidance and Transparency Rules
EEPUI	European Economic Policy Uncertainty Index
EPU	Economic Policy Uncertainty
ES	Spain
EU	European Union
FCA	Financial Conduct Authority
FE	Fixed Effects
FR	France
GDP	Gross Domestic Product
H1, H2, H3	Hypothesis 1, Hypothesis 2, Hypothesis 3
ICAPM	Intertemporal Capital Asset Pricing Model
IFRS	International Financial Reporting Standards
IT	Italy
ln	Natural Logarithm
LT	Long-Term (Leverage Maturity Decomposition)
n.a.	Not Applicable
NPV	Net Present Value
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
P25	25th Percentile
P75	75th Percentile
Q1–Q4	Quartiles 1 through 4
R&D	Research and Development
SD	Standard Deviation
SE	Standard Errors

SIC	Standard Industrial Classification
ST	Short-Term (Leverage Maturity Decomposition)
STD	Standard Deviation
Tot	Total (Leverage Maturity Decomposition)
U.S.	United States
UK	United Kingdom
VIF	Variance Inflation Factor

1. INTRODUCTION

Tariff disputes, inflation-driven policy dilemmas, coalition breakdowns: across Europe, economic policy uncertainty (EPU) has been on the rise in recent years. The 2016 UK referendum on European Union membership opened a four-year negotiation over the country's trade and regulatory regime, the 2018 Italian budget standoff raised the prospect of formal sanctions for fiscal-rule violations, the spring 2020 lockdown ordinances and emergency fiscal packages were repeatedly revised across countries over the following months, and the 2024 government crises in France and Germany initiated extended periods of fiscal-rule and energy-policy debate. Finally, after two decades of rising and volatile EPU levels, the Baker et al. (2016) EPU indices for core European economies reached record levels in early 2025 (Appendix A), largely driven by the U.S. tariff announcements.

Heightened EPU can have a detrimental effect on firm valuation (Brogaard & Detzel, 2015; Fütterer et al., 2026; Pástor & Veronesi, 2012). Prior literature explains the EPU–valuation association through two distinct channels. First, through the discount-rate channel, EPU raises equity risk premia and the liquidity component of required returns by widening information asymmetry between managers and investors (Brogaard & Detzel, 2015; Nagar et al., 2019; Pástor & Veronesi, 2012). Second, through the cash-flow channel, EPU is associated with delayed corporate investment (Bernanke, 1983; Bloom, 2009; Gulen & Ion, 2016) and with elevated borrowing costs that compress the cash flow available for distribution (Kaviani et al., 2020; Tran, 2021). Prior empirical studies document a robust negative association between EPU and firm value in the U.S. equity market (Brogaard & Detzel, 2015) and, more recently, in cross-country European panels (Fütterer et al., 2026).

What remains less well understood is whether and how this association is conditioned by firm-level financial characteristics. One financial characteristic that can be expected to moderate the EPU–valuation association is financial flexibility, often defined as a firm's financial ability to dynamically fund operations, withstand threats, and capture opportunities. Common proxies for firms' financial flexibility are cash holdings and financial leverage. Direct evidence on whether financial flexibility moderates the EPU–valuation association is scarce, but adjacent literature on the valuation of cash holdings and leverage points to ambiguous implications on both sides of the balance sheet. On the one hand, firms with greater financial flexibility may be more resilient under heightened EPU, as cash holdings carry precautionary value in times of uncertainty (Fahlenbrach et al., 2021; Opler et al., 1999), spare debt capacity preserves the option value of future borrowing (DeAngelo & DeAngelo, 2007; Gamba & Triantis, 2008), and both together enable firms to uphold investment continuity (Gulen & Ion, 2016; Kang et al., 2014). Furthermore, maintaining low leverage insulates companies from heightened costs of capital and refinancing risks under heightened EPU (Amihud & Mendelson, 1986; Kaviani et al., 2020; Pástor & Stambaugh, 2003; Pástor & Veronesi, 2012; Tran & Phan, 2021; Tran, 2021). On the other hand, prior evidence suggests that excess liquidity may invite agency costs of free cash flow (Dittmar & Mahrt-Smith, 2007; Jensen, 1986). How and if financial flexibility moderates the negative association between EPU and firm valuation is therefore an empirical question, and one that, to our knowledge, has not been tested directly in a long-term European setting not restricted to a specific crisis window. Thus, we arrive at our central research question:

How is economic policy uncertainty associated with firm valuation, and how is this association moderated by firms' financial flexibility?

To quantify EPU, this thesis relies on the Baker et al. (2016) index, which is commonly used in prior literature and proxies for EPU by measuring the relative frequency of newspaper articles jointly mentioning economic, policy, and uncertainty terms in leading national newspapers. The empirical analysis is conducted on a panel of 104,197 firm-month observations covering listed firms in France, Germany, Italy, Spain, and the United Kingdom over the period January 2005 to December 2025. These panel specifications were chosen due to the availability of the country-specific Baker et al. (2016) EPU indices and to ensure between-firm financial data comparability under the IFRS reporting mandate, which has applied in the EU since 2005. After testing for a negative EPU–valuation association, the moderating roles of cash and leverage are examined through linear, quadratic, and group-based (low, medium, and high levels of cash or leverage) interaction specifications. The quadratic and group-based specifications are motivated by the theoretical mechanisms outlined above, which do not necessarily operate symmetrically across the cash and leverage distributions: financial distress, investment continuity issues and refinancing concerns are likely largest when financial flexibility is low, while agency-cost concerns intensify only once cash accumulates or debt capacity is left substantially unused. To better understand the transmission channels outlined before, the quantitative analysis is complemented by insights from eight interviews with different equity analysts and financial managers, which provide a qualitative perspective on the quantitative moderation patterns and potential moderation channels.

Our findings confirm a negative and statistically significant association between EPU and firm valuation. Specifically, the results imply that a one-standard-deviation increase in ln(*EPU*) is associated with an approximate 4.4% decline in Tobin's Q. Evidence for cash-holding moderation is partial and specification-dependent: while the linear interaction is statistically insignificant, quadratic and group-based decompositions reveal underlying heterogeneity. Medium-cash firms exhibit a significantly less negative EPU sensitivity than low-cash firms, whereas the contrast between high- and low-cash firms remains statistically insignificant. Leverage-based moderation is similarly nuanced and depends on debt maturity. While total leverage yields no robust moderation, short-term and long-term leverage show divergent patterns. Firms in the lowest quartile of short-term leverage display a significantly attenuated valuation sensitivity compared to the rest of the sample. Conversely, firms in the highest quartile of long-term leverage exhibit the most pronounced negative EPU sensitivity. Overall, our findings indicate that while EPU is robustly associated with lower firm valuations, the strength of this association varies systematically with the firm's cash holdings and maturity-specific financial leverage. The qualitative evidence broadly corroborates these patterns: practitioners described EPU as operating predominantly through the discount-rate channel, characterised the value of cash holdings under EPU as an inverted-U-shape, and framed the role of leverage for valuation under EPU as a trade-off between refinancing-risk exposure on the short-term side and the preservation of spare debt capacity on the long-term side.

This thesis makes three main contributions. First, it brings the financial-flexibility and EPU literatures into direct dialogue by testing whether cash holdings and financial leverage moderate the EPU–valuation association in a long-horizon European panel, thereby complementing crisis-window evidence (Fahlenbrach et al., 2021) and previous work on the valuation implications of financial flexibility estimated outside an EPU setting (e.g., DeAngelo & DeAngelo, 2007; Denis & Sibilkov, 2010; Marchica & Mura, 2010; Opler et al., 1999). Second, it triangulates the quantitative findings with qualitative evidence from eight interviews with equity analysts and financial managers, offering a practitioner perspective rarely seen in this literature. This thesis therefore goes beyond reporting a statistical association by grounding the estimated patterns in the practical mechanisms through which EPU and financial flexibility translate into firm valuation. Third, it sharpens the EPU–valuation evidence for European firms by extending the panel timeline to a longer horizon and by replacing the aggregate composite index used in prior cross-country work with country-specific indices (Fütterer et al., 2026).

Beyond these academic contributions, our analysis carries practical implications for equity analysts and financial managers. For equity analysts, the documented association supports treating EPU as a valuation-relevant factor, for example through a dedicated discount-rate premium, while recognising that EPU sensitivity is not uniform across firms but varies with financial flexibility. For financial managers, a crucial takeaway from our thesis is that the moderating role of financial flexibility in the EPU–valuation association does not scale linearly with cash holdings or financial leverage but varies non-uniformly along dimensions that, per the interview evidence, include refinancing risk in short-term leverage, debt capacity concerns in long-term leverage, and precautionary motives and agency costs in cash. Financial flexibility under EPU should therefore be carefully calibrated to a firm's specific business setting.

2. LITERATURE REVIEW AND THEORETICAL BACKGROUND

In this section, we first review existing literature on the interplay between EPU and firm valuation. Secondly, we introduce the concept of financial flexibility by explaining its different definitions and measurements. Building on this, we then explain how financial flexibility, proxied by cash holdings and financial leverage, relates to firm valuation by shedding light on the fundamental tensions that define this relationship.

2.1. Firm Valuation and Economic Policy Uncertainty

2.1.1. Introduction to Economic Policy Uncertainty

One of the most widely cited definitions of economic uncertainty is provided by Bloom (2014), who describes it as a fundamental yet amorphous concept that can be characterised as the inability of consumers, managers, and policymakers to accurately foresee the future. Bloom (2014) notes that economic uncertainty is typically countercyclical, spiking during economic contractions and easing during booms, and emphasises that it is not confined to macroeconomic conditions but also arises at the industry, firm, and even individual product price levels. Accordingly, prior literature frequently divides economic uncertainty into two categories: systematic economic uncertainty, encompassing for example macroeconomic, geopolitical, and policy uncertainty (Baker et al., 2016; Jurado et al., 2015), and firm-specific economic uncertainty, encompassing operational execution risk as well as technology, product, and other firm-specific uncertainties (Campbell et al., 2001). This thesis, however, will focus on a distinct subset of systematic economic uncertainty: economic policy uncertainty.

To understand and quantify the magnitude of EPU, this thesis utilises the EPU Index developed by Baker et al. (2016). The authors define EPU as the uncertainty regarding who will make economic policy decisions, which policy actions will be taken and when, and what the economic effects of those actions (or inactions) will be. The index methodology is based on newspaper coverage of uncertainty topics, and the index itself is well-established in economic literature and has demonstrated relevance at both macro- and microeconomic levels (Baker et al., 2016).

2.1.2. The Association Between Economic Policy Uncertainty and Firm Valuation

In previous academic literature, higher EPU is consistently associated with lower firm valuation (Brogaard & Detzel, 2015; Fütterer et al., 2026; Jory et al., 2020; Pástor & Veronesi, 2012) and, based on financial theory, assumed to affect firm value through two channels: the cash-flow (dividends) and the discount-rate channel (Brogaard & Detzel, 2015). Accordingly, this paper draws on Campbell's (1991) return variance decomposition framework to systematically categorise how EPU can affect firm valuation. Campbell (1991) suggests that unexpected returns can be decomposed into two components: "news about future dividends" (the cash-flow channel) and "news about future returns" (the discount-rate channel) (p. 1). Notably, these two channels are not independent, as increases in expected future cash flows often covary negatively with future expected returns (Campbell, 1991).

The Cash-Flow Channel

Prior research usually categorises the association between EPU and firms' cash flows, and thereby their capacity to pay dividends, into two channels: (i) the impact on companies' investment activities (Gulen & Ion, 2016; Kang et al., 2014), and (ii) the impact on financing costs (Kaviani et al., 2020; Tran, 2021; Tran & Phan, 2021).

First, prior empirical studies find that high EPU is associated with a significant decrease in corporate investment rates as firms adopt a "wait-and-see" attitude (Gulen & Ion, 2016; Kang et al., 2014). These investment delays can lead to an operational slowdown which weakens real activity and productivity growth (Bloom, 2009). As a result, the reduction in long-run growth prospects reduces investor expectations for future dividend growth which, provided the intertemporal elasticity of substitution is greater than one, contemporaneously depresses current valuation (Bansal & Yaron, 2004). The theoretical background of the "wait-and-see" attitude is rooted in the real options literature (Bernanke, 1983; Dixit & Pindyck, 1994; McDonald & Siegel, 1986). When investment projects are irreversible, higher uncertainty increases the value of the option to wait (Bernanke, 1983; Bloom et al., 2007; Dixit & Pindyck, 1994). The higher wait-option value induces firms to become more cautious and postpone investment and hiring decisions until uncertainty is resolved (Bloom, 2009; Bloom et al., 2007).

Second, EPU is empirically associated with higher corporate borrowing costs, for example reflected in wider corporate credit spreads (Kaviani et al., 2020; Tran, 2021; Tran & Phan, 2021). For firms that issue or refinance debt during such periods (Froot et al., 1993; Tran & Phan, 2021), the resulting higher interest burden can reduce free cash flow to equity (i.e. the cash available for dividends) (Damodaran, 2012) and, together with dividend-restricting covenants that may tighten under heightened EPU (Smith & Warner, 1979; Tran & Phan, 2021), can constrain payout capacity. EPU is associated with higher financing costs through two reinforcing channels: it is linked to greater uncertainty about future cash flows, which raises perceived default risk and the likelihood of debt-payment shortfalls (Tran, 2021; Tran & Phan, 2021), and it is associated with greater information asymmetry about the firm's exposure to future policy actions, making the default risk harder to assess for lenders (Tran, 2021). As a result, lenders demand higher risk premia and interest rates to compensate for both higher perceived risk and greater informational uncertainty (Kaviani et al., 2020; Tran, 2021; Tran & Phan, 2021).

The Discount-Rate Channel

The second channel relates to changes in the discount rate (i.e. the required rate of return). Campbell (1991) defines this as "news about future returns". EPU increases the volatility of the stochastic discount factor, which in turn raises equity risk premia (Pástor & Veronesi, 2012) as investors demand higher compensation for bearing non-diversifiable risk (Bansal & Yaron, 2004). In addition, previous research suggests that EPU can elevate required returns by affecting information asymmetry between managers and investors, reflected in wider bid-ask spreads, increased Amihud illiquidity and reduced stock turnover (Chen et al., 2018; Nagar et al., 2019). This heightened asymmetry increases the cost of trading (Glosten & Milgrom, 1985), which investors price as a liquidity risk premium (Pástor & Stambaugh, 2003), effectively raising the required rate of return (Amihud & Mendelson, 1986; Pástor & Stambaugh, 2003). Consequently, asset prices are depressed because expected cash flows are discounted at a higher rate.

Prior empirical research has shown that the discount rate channel is often the primary mechanism through which EPU affects firm valuation (Brogaard & Detzel, 2015; Pástor & Veronesi, 2012). Brogaard and Detzel (2015) report that (i) higher EPU is negatively correlated with market returns in the short term (an immediate increase of one standard deviation in EPU is associated with a 1.31% contemporaneous decrease in market returns) and (ii) higher EPU has no statistically significant relationship with dividend growth over horizons of up to two years. This suggests that the decrease in firm valuation associated with rising EPU is primarily driven by variation in expected returns rather than deteriorating cash-flow expectations.

As the discount-rate channel appears to be empirically more prominent, we develop a theoretical understanding of how uncertainty, including EPU, may affect firm valuation through this channel, drawing on the work of Markowitz (1952), who established the mean-variance criterion for portfolio selection.[1] Through his work, Markowitz showed that, given mean-variance preferences, investors seek to maximise expected returns for a given level of risk and can reduce firm-level risk through diversification, but they cannot eliminate the systematic risk inherent in the broader economy (Markowitz, 1952). Building upon this theory, the CAPM later provided a framework for asset choice under risk (Lintner, 1965; Mossin, 1966; Sharpe, 1964). A central tenet of the CAPM is that systematic risk, as the component of risk that moves with the aggregate economy, is the only risk relevant for determining expected returns, as idiosyncratic risk can be eliminated through diversification (Sharpe, 1964). This implies that, in equilibrium, there is a linear relationship between the expected return and the systematic risk of an asset. Merton's intertemporal CAPM (ICAPM) extends this framework by showing that investors require compensation not only for systematic market risk but also for exposure to adverse shifts in the investment opportunity set (Merton, 1973).[2] Consequently, under standard discounted-cash-flow logic in which equity value equals the present value of expected

[1] It is important to note that Knight (1921) established a formal distinction between risk (known probabilities for different future outcomes) and uncertainty (unknown probabilities for different future outcomes). However, prior academic research finds that because the ubiquity of government policy makes its associated uncertainty nearly impossible for investors to diversify away, time-varying policy uncertainty may be priced in equity markets, suggesting that exposure to policy uncertainty or EPU can be a source of systematic risk for investors (Brogaard & Detzel, 2015; Pástor & Veronesi, 2012).

[2] A substantial body of research shows that economic uncertainty is a key state variable shaping future investment conditions (Bloom, 2009; Bloom et al., 2007; Pástor & Veronesi, 2012, 2013).

future cash flows (Gordon, 1962; Williams, 1938), heightened uncertainty raises systematic risk premia and induces adverse shifts in the investment opportunity set, both of which raise required returns and, holding cash-flow expectations constant, mechanically depress firm valuations.

2.2. Firm Valuation and Financial Flexibility

2.2.1. Introduction to Financial Flexibility

Within existing finance and accounting literature, financial flexibility is recognised as a multifaceted construct with no single, universally accepted definition. However, many definitions converge towards one central idea: that financial flexibility is a firm's financial ability to dynamically fund operations, withstand threats, and capture opportunities. For instance, Denis (2011) states that financial flexibility is "the ability of a firm to respond in a timely and value-maximising manner to unexpected changes in the firm's cash flows or investment opportunity set" (p. 667), and Ang and Smedema (2011) define financial flexibility as "the ability of a firm to handle negative income shocks and to take advantage of positive shocks to their investment opportunity set" (p. 774). Gamba and Triantis (2008), who are frequently cited in relevant literature, focus more on the source of financial flexibility, stating that "financial flexibility represents the ability of a firm to access and restructure its financing at a low cost" (p. 2263), while also recognising that "financially flexible firms are able to avoid financial distress in the face of negative shocks, and to readily fund investment when profitable opportunities arise" (p. 2263).

Given that financial flexibility has varying conceptual definitions, the metrics used to quantify the concept vary as well. However, prior literature mostly revolves around a recurring set of metrics that are commonly used to quantify the financial flexibility of a firm. This section aims to introduce two central strands of metrics, which are the debt- and liquidity related measures, and give an overview of the further metrics landscape.

The first key approach to measuring financial flexibility focuses on debt-related metrics, often aiming to quantify a firm's unused borrowing power. In that, researchers frequently use low realised leverage ratios as a direct proxy for the preservation of debt capacity. For example, DeAngelo et al. (2018) argue that firms proactively delever to near-zero debt not to avoid distress, but to restore the option to borrow in the future. In this view, low leverage is a tool that allows firms to fund future investment spikes. Similarly, Friedrich and Zator (2023) use financial leverage (liabilities to assets ratio) to demonstrate that low-leverage firms possess the financial slack necessary to pivot operationally, for example by entering new export markets, when faced with negative demand shocks. To capture companies' unused debt capacity more accurately, Denis and McKeon (2012) and Blomkvist et al. (2022) measure flexibility as the negative deviation between a firm's actual leverage and its estimated target leverage. The logic is that firms intentionally maintain leverage below their target to preserve a reservoir of potential funding that can be tapped quickly for acquisitions or other strategic investments. Expanding on the importance of debt capacity in maintaining financial flexibility, researchers argue that firms' ability to secure new and low-cost debt is dependent on the quality and availability of collateral. For example, Benmelech et al. (2024) focus on the ratio of unencumbered assets to gross assets and argue that high-quality borrowers preserve flexibility by borrowing unsecured during calmer times, thereby keeping their collateral untapped and available to secure rescue financing during periods of distress. Li et al. (2016) similarly estimate a collateral parameter representing the fraction of assets that can be pledged, quantifying the value of preserving this capacity against the tax benefits of debt.

The second key strand of metrics focuses on the immediate availability of liquidity. In this domain, cash holdings are a central recurring metric. For instance, Fahlenbrach et al. (2021) use the cash-to-assets ratio to proxy for a firm's ability to fund revenue shortfalls without engaging in value-destroying asset sales or liquidation. This reliance on cash is supported by DeAngelo et al. (2018), who argue that cash accumulations are a fundamental mechanism for rebuilding flexibility because cash balances provide greater assured access to capital than unused debt capacity. Furthermore, Gamba and Triantis (2008) posit that firms may simultaneously hold cash and debt to avoid the future transaction costs of external financing, treating cash as a buffer against negative shocks and a resource for future investment. Concerning further liquidity metrics, authors like Nikolov et al. (2019) and Lockhart (2014) measure flexibility through the availability of undrawn credit lines. Unlike cash, which Nikolov et al. (2019) classify as non-contingent liquidity (available in all states), credit lines provide contingent liquidity that allows firms to transfer funds to specific future states where funding needs are high. While credit lines are efficient because firms avoid the carry costs associated with holding cash (e.g., tax disadvantages), their availability is often conditional on compliance with financial covenants. Consequently, Lockhart (2014) finds that firms with a low correlation between cash flows and investment opportunities rely less on credit lines and more on cash, as the risk that covenant violations will revoke credit access exactly when liquidity is needed makes cash a superior source of flexibility.

While debt and liquidity ratios remain the most widely used measures of financial flexibility in prior research, less common metrics are used as well. For instance, another strand of literature measures flexibility through the composition of shareholder payouts, focusing on the discretion managers have to retract capital returns during downturns. Focusing on the repurchase-to-payout ratio, Bonaimé et al. (2014) and Kumar and Vergara-Alert (2020) quantify payout flexibility as the ratio of share repurchases to total payouts (dividends plus repurchases). The underlying logic is that dividends are sticky and costly to cut due to negative signalling, whereas repurchases are discretionary. Therefore, a payout policy skewed toward repurchases allows managers to preserve cash during shocks simply by reducing buybacks, without the market penalty associated with dividend cuts. Furthermore, some researchers rely on financial constraint indices as the inverse to financial flexibility. For example, Choi et al. (2021) explicitly posit that the degree of financial constraints represents the reverse of financial flexibility, and they utilise the Kaplan and Zingales (1997) index and the Hadlock and Pierce (2010) index to measure this construct. Similarly, Bindal et al. (2025) employ the Whited and Wu (2006) index and the Hadlock and Pierce (2010) index as alternative measures for financial flexibility to test whether flexible firms shut down faster during the pandemic.

2.2.2. The Association Between Financial Flexibility and Firm Valuation

This section examines the existing literature surrounding the relationship between financial flexibility and firm valuation and contrasts the theoretical frameworks and inherent tensions that define this connection. Since our thesis adopts a definition of financial flexibility that is centered on cash holdings and financial leverage, we focus specifically on how these two dimensions relate to valuation.

The Relationship Between Cash Holdings and Firm Valuation

On the one hand, holding cash can be seen as value creating. The precautionary motive, rooted in the work of Keynes (1936), posits that firms hold cash to insulate themselves against adverse cash flow shocks and to fund valuable investment opportunities when external financing is costly or unavailable (Opler et al., 1999). The protective value of cash holdings in times of cash flow shocks is, for example, empirically supported by the work of Fahlenbrach et al. (2021), who find that firms with high cash holdings experienced significantly lower stock-price drops during the COVID-19 market crash than their low-cash peers. Furthermore, the importance of cash holdings for investment purposes has also been widely recognised. For instance, Denis and Sibilkov (2010) have shown that holding cash enables financially constrained firms to avoid underinvestment and observed a corresponding positive effect on firm value, consistent with the theoretical predictions regarding external financing introduced by Myers and Majluf (1984).

On the other hand, holding cash can be seen as value destructive. Specifically, agency theory suggests that high cash holdings can be detrimental to firm value, as excess liquidity, or free cash flow, provides entrenched managers with the discretion to invest in negative net present value (NPV) projects, engage in "empire building" or consume perquisites rather than distributing funds to shareholders (Jensen, 1986). Further empirical evidence supports this view, indicating that cash-rich firms are more likely to make value-destroying acquisitions, leading markets to discount the value of their cash reserves (Harford, 1999). On top of that, holding cash involves opportunity costs due to the tax disadvantage of corporate interest income compared to personal interest income and low returns on liquid assets (Faulkender & Wang, 2006).

However, beyond this fundamental tension, the valuation of cash holdings is moderated by a firm's degree of financial constraint and corporate governance. Regarding financial constraints, Faulkender and Wang (2006) report that the marginal value of cash is significantly higher for firms with limited access to capital markets compared to unconstrained firms. These findings are in line with the work of Denis and Sibilkov (2010), who find that higher cash holdings are associated with higher firm value, especially in financially constrained companies. The key reason for this is that financially constrained firms face a larger cost advantage of using internal funds over costly external financing (Denis & Sibilkov, 2010). Furthermore, the quality of corporate governance acts as a filter for how the market values cash by addressing agency cost concerns. For example, Dittmar and Mahrt-Smith (2007) find that $1.00 of cash in a poorly governed firm is valued at only $0.42 to $0.88, whereas good governance approximately doubles this value by preventing the dissipation of cash on value-destroying projects. Pinkowitz et al. (2006) find similar results internationally, where cash holdings are generally worth less in countries with poor investor protection.

The Relationship Between Financial Leverage and Firm Valuation

The relationship between financial leverage and firm valuation can also be defined by a theoretical tension: the trade-off between the tax advantages of debt and financial distress as well as agency costs. In this regard, Modigliani and Miller (1963) argue that because interest payments are tax-deductible, firm value should theoretically increase with leverage, implying that firms should maximise debt to fully utilise these tax shields. However, the trade-off theory (Kraus & Litzenberger, 1973) refines this idea by explicitly positing that firms seek an optimal capital structure by balancing these tax benefits against the bankruptcy risk and costs of financial distress. Under this framework, value maximisation occurs at the point where the marginal benefit of the tax shield equals the marginal cost of distress.

However, empirical observations reveal that many firms maintain leverage ratios well below the predicted optimum and thereby forgo value by not exhausting their ability to capture tax savings (Graham, 2000). One explanation for this phenomenon might be the presence of agency costs, which occur when a firm has excess debt capacity (Jensen, 1986). Another one might be the strategic value of maintaining spare debt capacity. For example, DeAngelo and DeAngelo (2007) and Ferrão et al. (2016) argue that firms deliberately maintain low leverage to retain borrowing power to fund future investment opportunities or weather adverse shocks. Research on such exogenous shocks, like the 2008 financial crisis and the COVID-19 pandemic, suggests that this behaviour can create value, indicating that firms with higher pre-crisis leverage experienced sharper declines in stock prices and performance (Arslan-Ayaydin et al., 2014; Fahlenbrach et al., 2021).

3. HYPOTHESES DEVELOPMENT

This section develops our three hypotheses by integrating the literature on EPU and firm valuation with that on financial flexibility and firm valuation. First, we hypothesise that higher EPU is negatively associated with firm valuation.

Prior literature has empirically established a negative EPU–valuation association and points to two key transmission channels. First, through the discount-rate channel, EPU operates as a non-diversifiable risk factor that investors cannot hedge away through portfolio diversification, raising required returns and, all else equal, depressing valuations (Brogaard & Detzel, 2015; Pástor & Veronesi, 2012). Second, through the cash-flow channel, heightened EPU is associated with postponed corporate investment that dampens growth prospects and, in turn, expected dividend growth (Bernanke, 1983; Bloom, 2009; Gulen & Ion, 2016), as well as with tighter financing conditions that compress free cash flow available for distribution (Kaviani et al., 2020; Tran, 2021; Tran & Phan, 2021). Both channels push firm valuations in the same direction: holding discount rates constant, lower expected cash flows reduce valuations, and holding cash flows constant, higher required returns do the same. While their relative magnitudes may differ across settings, with prior U.S. evidence suggesting the discount-rate channel may dominate (Brogaard & Detzel, 2015), both channels directionally imply a negative EPU–valuation association.

Furthermore, prior empirical work already documents a negative EPU–valuation association in U.S. samples (Brogaard & Detzel, 2015; Jory et al., 2020) and in European panels (Fütterer et al., 2026). Although our setting and certain econometric design choices differ from these studies, which may affect the estimated magnitude, we do not expect the sign of the association to change. We therefore arrive at our first hypothesis:

> **H1:** Higher economic policy uncertainty is negatively associated with firm valuation.

Building on H1, we next hypothesise that maintaining financial flexibility can attenuate the negative association between EPU and firm valuation. We generally arrive at this hypothesis as we anticipate financially flexible firms to have a larger survival buffer, better insulation from increasing cost of capital, and greater ability to maintain operations. Simultaneously, we expect an agency-cost-related bound to this moderating role.

For our second hypothesis, we therefore anticipate that higher cash holdings, as a measure of financial flexibility, can attenuate the negative EPU–firm valuation association.

The first mechanism through which cash holdings should moderate this association is their potential defensive function as EPU rises. Heightened EPU often correlates with income disruptions and restricted credit availability, creating a landscape where internal liquidity helps withstand adverse shocks (Bindal et al., 2025; Fahlenbrach et al., 2021). In such environments, cash holdings allow firms to meet immediate obligations without resorting to value-destroying measures, such as the fire-sale of assets (Fahlenbrach et al., 2021). Crisis-window evidence is broadly consistent with this defensive role: Fahlenbrach et al. (2021) find that during the 2020 market crash, a one-standard-deviation decrease in cash-to-assets was associated with a 3.5% lower stock return, although this setting is not fully comparable to regular EPU variation.

Beyond the direct defensive role, we expect that high cash holdings can attenuate the negative EPU–valuation association by reducing firms' dependence on external financing. On the one hand, cash holdings reduce firms' dependence on the equity capital market, which insulates firms from the EPU-driven inflation of risk premia (Amihud & Mendelson, 1986; Pástor & Stambaugh, 2003; Pástor & Veronesi, 2012). On the other hand, high cash reserves reduce reliance on debt capital, which insulates firms from the rising cost of debt and the tightening credit markets associated with EPU (Kaviani et al., 2020; Tran, 2021; Tran & Phan, 2021).

Third, we expect a positive moderating role of cash holdings through the preservation of firms' abilities to maintain investments. High uncertainty is associated with firms delaying or cutting investments under irreversibility of capital commitments and due to high cost of external finance (Gulen & Ion, 2016; Kang et al., 2014). However, firms with higher cash reserves have more readily available funds to maintain essential or high-adjustment-cost investments (Sheu & Lee, 2012), which leads us to hypothesise that they are better able to ensure continuous growth and therefore protect their valuation in times of high EPU.

While we generally expect high cash holdings to positively moderate the negative association between EPU and firm value, we also expect this effect to be bound by the agency costs of free cash flow (Jensen, 1986). This agency problem may become particularly pronounced under high EPU, as heightened uncertainty can increase information asymmetry between managers and outside investors (Nagar et al., 2019), thereby reducing the market's ability to assess whether excess cash is deployed efficiently. Consequently, investors may discount the value of high cash reserves especially in times of high EPU.

Taking these mechanisms together, we arrive at our second hypothesis:

H2: Higher cash holdings attenuate the negative association between economic policy uncertainty and firm valuation.

Next, we hypothesise that companies with lower leverage exhibit a less negative association between EPU and their valuation.

Similar to high cash holdings, low leverage may attenuate the negative EPU–valuation association through its function as a survival buffer that partially mitigates financial distress costs. By maintaining spare debt capacity, firms preserve the ability to borrow against their balance sheet to bridge periods of hardship. Gamba and Triantis (2008) argue that financially flexible firms are better positioned to avoid financial distress when negative shocks materialise and DeAngelo et al. (2011) emphasise the importance of firms' ability to issue transitory debt when internal funds dry up. Evidence from the COVID-19 crisis provided by Fahlenbrach et al. (2021) again underpins our hypothesis, as they find that firms with low leverage were better able to fund cash-flow shortfalls and avoid elevated financial distress risks.

Furthermore, low leverage generally insulates firms from the rise in cost of debt that typically characterises periods of high EPU. As discussed before, during such periods, lenders demand higher credit spreads to compensate for elevated default risk and information asymmetry, making debt roll-overs or new issuances more expensive (Kaviani et al., 2020; Tran, 2021; Tran & Phan, 2021). By maintaining conservative debt levels, firms minimise their dependence on capital markets when the cost of debt is highest, thereby avoiding the value destruction associated with financing frictions and distress costs.

Finally, spare debt capacity also protects valuation by enabling firms to maintain essential real activities like research and development (R&D), employment, and capital expenditures (CapEx) that might otherwise be sacrificed due to funding shortfalls. Campello et al. (2010) document that financially constrained firms, often characterised by exhausted debt capacity, are forced to bypass attractive investment opportunities and cut employment during crises, whereas unconstrained firms can sustain these value-creating activities. Denis and McKeon (2012) further demonstrate that firms actively utilise their spare debt capacity to fund operating needs and investments that exceed internal cash flows. Thus, keeping low leverage mitigates the "debt overhang" problem, thereby allowing firms to pursue positive NPV projects and potentially sustain growth under increased EPU (Marchica & Mura, 2010; Myers, 1977).

However, paralleling the cash-related mechanisms, the valuation-moderating role of low leverage is expected to be bounded by agency costs. Prior literature has shown that debt acts as a crucial disciplining mechanism that reduces the agency costs of free cash flow by legally obligating managers to pay out future cash flows (Jensen, 1986). Given the increased information asymmetry under heightened EPU (Nagar et al., 2019), it can be expected that investor oversight on managerial discipline is obstructed in such an environment, potentially heightening agency-cost concerns and manifesting in a larger valuation discount for very low-leverage firms.

For these reasons, we arrive at our third hypothesis:

H3: Lower financial leverage levels attenuate the negative association between economic policy uncertainty and firm valuation.

4. DATA AND SAMPLE

This section describes the data foundation underlying our empirical analyses. Our empirical work is primarily quantitative, drawing on a panel of European listed firms to test our three hypotheses through panel regressions. The analysis is complemented by eight semi-structured expert interviews, which provide interpretive context where the regression analysis alone cannot fully explain observed patterns or distinguish between competing theoretical mechanisms. Importantly, the interviews are not intended as a separate test of the hypotheses. This section describes the construction, variable definitions, and treatment of the quantitative panel. Details on the design and conduct of the qualitative interviews are provided in Appendix B.

4.1. Sample Construction and Data Collection

To test our previously developed hypotheses, we construct a sample of 799 firms comprising 104,197 firm-month observations. Consistent with prior research (Fahlenbrach et al., 2021; Fütterer et al., 2026), we implement a two-stage sample selection and data-cleaning procedure. First, we apply firm-level selection criteria to exclude ineligible firms. Second, we apply observation-level screens to the panel to exclude non-informative observations. A detailed breakdown of the number of firms and firm-month observations excluded under each criterion is reported in Appendix C.

Our dataset is compiled from multiple sources and covers the period from January 2005 to December 2025. The start date was chosen to align with the mandatory adoption of IFRS in the EU in 2005, which improves the comparability of financial statement data and ensures greater reporting uniformity across firms. Firm characteristics, as well as monthly market data and annual firm-level financial statement data in reported currency, are obtained from S&P Capital IQ. Monthly EPU index data is retrieved from the official EPU Index website (www.policyuncertainty.com). For macroeconomic control variables, quarterly and seasonally adjusted data on GDP per capita (in U.S. dollars) and annualised GDP growth are sourced from the OECD Data Explorer.

We begin our sample selection with a set of firms that report a market capitalisation larger than zero in at least one year between January 2005 and December 2025. As a first step, we restrict the sample to firms whose primary listed security is common equity to improve the comparability of market-based valuation measures and to exclude securities (e.g., preferred or hybrid instruments) whose prices incorporate non-standard claims or embedded features (e.g., fixed dividend provisions) that can distort these measures. We further restrict the sample to firms with their headquarters and primary location in France, Germany, Italy, Spain, and the United Kingdom, as these are the only five European countries with continuous Baker et al. (2016) EPU index data between January 2005 and December 2025. Next, firms that are not currently classified as public or private companies (e.g., educational, investment, or governmental institutions) are excluded to maintain comparability. To mitigate survivorship bias, companies currently classified as private are retained if they exhibited a positive market capitalisation at any point between 2005 and 2025. Subsequently, firms in financial or utility industries (SIC codes 6000–6999 and 4900–4999) are excluded, as their materially differing balance sheet structures and regulatory environments could distort comparability.

To enhance data quality and the informativeness of the sample, we apply a series of observation-level screens analogous to Fütterer et al. (2026). First, we require positive, non-missing values for market capitalisation, total assets, total equity, and revenue (Fütterer et al., 2026). To mitigate the influence of extreme observations, we further exclude firm-months indicating a reorganisation, defined as year-on-year asset growth exceeding 100% (Chen & Chen, 2012), as well as those suggesting implausible values or financial distress, proxied by a total-debt-to-total-assets ratio above one (Baker & Wurgler, 2002) or a net-income-to-total-assets ratio below minus one (Bris et al., 2009). We then retain only firms with at least 60 consecutive year-month observations for which Tobin's Q, EPU, and all remaining regression variables, as defined in Section 4.2, are non-missing.[3] Finally, to ensure data validity, a large number of randomised crosschecks between panel data and firms' annual reports were conducted. As a result, no meaningful outliers were detected, providing further reassurance about the integrity of the panel.

4.2. Key Variables

4.2.1. Firm Value Proxy (Tobin's Q)

Consistent with prior academic research, we use Tobin's Q as the basis for our key dependent variable and proxy for firm value (e.g., Fütterer et al., 2026; Maury, 2006; Villalonga & Amit, 2006). Analogously to Fütterer et al. (2026), we define Tobin's Q in the following way, where *i* indexes firms and *t* indexes year-month observations[4]:

$$Tobin's\ Q_{i,t} = \frac{Market\ Capitalisation_{i,t} +\ Total\ Debt_{i,t}}{Total\ Debt_{i,t} +\ Total\ Equity_{i,t}}$$

The numerator approximates the market value of the firm's assets by summing market capitalisation and total debt, where market capitalisation is computed as the product of the last closing share price and the number of shares outstanding[5], and total debt captures all interest-bearing obligations. The denominator represents the book value of total invested capital, comprising total debt and total equity, where total equity includes total preferred equity, total common equity, and total minority interest.

Following Fütterer et al. (2026) and Gompers et al. (2010), we use the natural logarithm of Tobin's Q, ln(*Q*), as our dependent variable rather than the raw ratio. This

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[3] This requirement may reinforce survivorship bias, potentially weakening the estimated link between EPU and valuation (Shumway, 1997). The results should therefore be read as describing relatively durable listed firms rather than all firms at risk of exit.

[4] Index refers to the most recent available observation in year-month *t*.

[5] For companies with multiple share classes, the calculation is done at the security/class level and then aggregated for a company level market capitalisation.

transformation mitigates the typical right-skewness of raw Tobin's Q values (Scharfenaker & Santos, 2015) that is also mirrored in our sample (raw Tobin's Q mean: 2.209; median: 1.529), yielding a more symmetric distribution that better aligns with standard regression assumptions. In addition, because our key independent variable, EPU, is also log-transformed, the estimated coefficient can be directly interpreted as an elasticity: it captures the percentage change in Tobin's Q associated with a one-percent change in the EPU index. In line with Fütterer et al. (2026), we calculate monthly Tobin's Q to match the monthly frequency of the EPU index.

4.2.2. Economic Policy Uncertainty

To quantify EPU, we use the country-specific EPU indices developed by Baker et al. (2016), whose newspaper-based methodology has become one of the most widely used approaches to measuring economic policy-related uncertainty in the empirical finance and economics literature (Boumparis et al., 2017; Fütterer et al., 2026; Gulen & Ion, 2016). The construction of the index follows a four-step newspaper-based methodology.[6] First, for each country, the authors identify articles in leading national newspapers[7] that simultaneously contain terms related to the economy, uncertainty, and policy. Second, the monthly count of identified articles in each newspaper is normalised by the total number of articles published in that newspaper during the same month, thereby controlling for changes in overall publication volume. Third, each newspaper-level series is standardised to unit standard deviation over a reference period. Fourth, the standardised series are averaged across newspapers by month to produce a composite index, which is then normalised to a mean of 100 over a defined baseline period (Baker et al., 2016).

In contrast to prior academic studies that rely on the aggregate European EPU Index (EEPUI) as a composite measure (Boumparis et al., 2017; Fütterer et al., 2026), we deliberately use the individual country-level EPU indices as our key independent variable. This choice is motivated by two considerations. First, our sample includes firms from five specific European countries rather than the full set of countries underlying the EEPUI index, which would introduce measurement noise from policy environments not represented in our sample. Second, a country-specific measure more precisely captures the EPU environment that is most directly relevant to each firm's operating and regulatory context. Nevertheless, we employ the EEPUI index as an alternative measure in our robustness analyses to verify that our results are not driven by this methodological choice.

The monthly EPU data for all individual country indices as well as the EEPUI are obtained from the official EPU index website (www.policyuncertainty.com). We retrieve monthly values covering the period from January 2005 to December 2025 and take the

[6] As a news-based proxy, the EPU index is subject to measurement error. This limitation is discussed in greater detail in Section 6.
[7] For the five countries in our sample, the index draws on: Handelsblatt and Frankfurter Allgemeine Zeitung (Germany), Le Monde and Le Figaro (France), La Stampa and Corriere della Sera (Italy), El País and El Mundo (Spain), and The Times of London and the Financial Times (United Kingdom).

natural logarithm of the raw index values to reduce the influence of extreme spikes and to facilitate a percentage-change interpretation of the estimated coefficients (Baker et al., 2016). Appendix A broadly reveals an upward trend in EPU across the sample, with notable spikes coinciding with major economic and political events such as the global financial crisis (2008–2009), the European sovereign debt crisis (2010–2012), the Brexit referendum (2016), the onset of the COVID-19 pandemic (2020) and the 2025 tariff disputes between Europe and the U.S.

4.2.3. Financial Flexibility

As discussed in the literature review, financial flexibility is a multifaceted construct with no single universally accepted definition or measurement approach. Based on prior literature, this thesis focuses on two recurring dimensions of financial flexibility: liquidity, proxied by cash holdings, and capital structure, proxied by financial leverage.

Cash Holdings

Following Fahlenbrach et al. (2021), we measure a firm's liquidity position using the cash-to-total-assets ratio, which is defined as cash and cash equivalents divided by total assets (denoted *Cash*). Cash and cash equivalents include cash, readily convertible deposits, securities, and other instruments with maturities of less than three months at the time of purchase. The denominator, total assets, serves as a scaling factor to ensure comparability across firms of different sizes.

Financial Leverage

For the leverage dimension of financial flexibility, we again follow Fahlenbrach et al. (2021) and measure total leverage ($Leverage_{\mathrm{Tot}}$) as the total-debt-to-total-assets ratio, defined as total debt divided by total assets. Total debt aggregates all interest-bearing obligations of the firm, comprising short-term borrowings, current portion of long-term debt, current portion of leases, long-term debt and leases, and finance division debt.

Beyond the aggregate leverage measure, we decompose total debt into its short-term ($Leverage_{\mathrm{ST}}$) and long-term ($Leverage_{\mathrm{LT}}$) components to examine whether the maturity structure of debt differentially moderates the EPU–valuation association. $Leverage_{\mathrm{ST}}$ is defined as current debt divided by total assets and $Leverage_{\mathrm{LT}}$ as non-current debt divided by total assets. This decomposition is motivated by the distinct risk profiles associated with each maturity component. Short-term debt exposes firms to refinancing risk, as it must be rolled over at prevailing market rates that may spike during periods of high EPU (Kaviani et al., 2020; Tran & Phan, 2021). Long-term debt, by contrast, locks in financing costs for extended periods but reduces balance sheet flexibility by committing future cash flows to fixed interest obligations (Barclay & Smith, 1995).

4.2.4. Control Variables

To account for other correlates of Tobin's Q, we include a set of firm-level and country-level macroeconomic control variables that have demonstrated explanatory power in prior research (Bris et al., 2009; Fütterer et al., 2026).[8] A detailed description of the construction of each control variable is provided in Appendix D. At the firm level, we first control for fundamental firm characteristics. *Size* accounts for systematic size-related differences that may affect firm valuation through firms' risk profiles (Fama & French, 1992), growth opportunities (Berk et al., 1999), and access to capital (Hadlock & Pierce, 2010). *Age* controls for the tendency of younger firms to exhibit higher valuation levels due to greater uncertainty about their future profitability (Pástor & Veronesi, 2003). We further include several controls for operating performance and payout policy. *Profitability* captures cross-sectional differences in operating performance and cash-flow-generating ability that are often reflected in firm value (Gordon, 1962; Williams, 1938). *Sales Growth* captures recent revenue momentum that may affect current market valuations (Lakonishok et al., 1994). *Dividends* control for payout policy, as prior research documents an association with firm value (Kim et al., 2018). Finally, we account for differences in asset and investment structure. *Tangibility* captures differences in asset pledgeability and collateral value, which may affect firm value indirectly by easing access to external finance and reducing financing frictions (Almeida & Campello, 2007). *CapEx*[9] reflects differences in firms' investment activity and consequently expected growth opportunities (Titman & Wessels, 1988). *R&D* accounts for investment in intangible assets and innovation, which prior research links to higher market valuations (Hall et al., 2005). Beyond firm characteristics, we also control for country-level conditions that may shape valuations in our multi-country setting. Following Bris et al. (2009) and Fütterer et al. (2026), we include *GDP per Capita* and *GDP Growth* to account for cross-country differences in economic development and business-cycle conditions, and *Exchange Rate Change* to capture potential valuation differences associated with currency movements.

4.3. Panel Construction and Data Treatment

Following Fütterer et al. (2026), all explanatory variables based on annual financial statement data are lagged before they enter the monthly panel, so that the regressions use only information that could plausibly have been available to market participants at the time of observation. We assume that audited financial statements become publicly available four months after fiscal year-end and treat them as entering the market's information set from the following month. For example, figures from a December fiscal year-end are treated as available from May of the following year, and analogously for all other fiscal year-ends. This uniform four-month lag reflects the maximum publication deadline imposed by the EU Transparency Directive (European Parliament and Council of the European Union, 2004) for issuers on regulated markets and, for UK-listed firms, by the FCA Disclosure Guidance and Transparency Rules (Financial Conduct Authority, 2023). Rather than modelling firm-specific publication dates, we use this common

[8] Variable construction follows Fütterer et al. (2026). Citations in the text motivate the theoretical relevance of each variable, in some cases, the exact operationalisation differs across studies.

[9] CapEx as reported in S&P Capital IQ is a negative cash flow figure. We multiply the number by negative one to obtain a positive ratio, consistent with the other asset-scaled variables in our specification.

regulatory benchmark as a uniform harmonisation assumption that imposes a consistent rule on information availability across firms and countries. While this approach improves comparability and mitigates look-ahead bias, it may introduce measurement error in the timing of information availability, as actual reporting dates can vary across firms within the regulatory window. To the extent that this timing misalignment is non-systematic, it constitutes classical measurement error, which typically attenuates estimated coefficients toward zero. In multivariate settings and under potentially non-random reporting delays, the net bias is difficult to sign analytically. Nonetheless, the attenuation benchmark suggests that our estimates are, if anything, conservative. Macroeconomic controls, which are available at the quarterly frequency, are lagged by one quarter in line with Fütterer et al. (2026) and to similarly reflect the timing of public information availability. The resulting panel therefore combines three information frequencies: Tobin's Q and EPU vary monthly, macroeconomic controls vary quarterly, and firm-level explanatory variables vary annually. As a final data treatment step, all non-dichotomous firm-level variables are winsorised at the 1st and 99th percentiles on a monthly basis to reduce the influence of extreme observations while preserving the panel structure of the data.

4.4. Descriptive Statistics

Table 1 reports descriptive statistics for all variables used in the regression analysis. Raw Tobin's Q (*Q*) has a mean of 2.209 and a median of 1.529, consistent with a right-skewed distribution, which, as outlined above, supports the use of the log-transformed measure in the empirical analysis. The resulting dependent variable, ln(*Q*), has a mean of 0.503 and an interquartile range from 0.022 to 0.914, suggesting substantial variation in firm valuations across the sample. Turning to the key independent variable, ln(*EPU*) has a mean of 1.434 and a standard deviation of 0.637, reflecting considerable variation in EPU across the sample period. *Cash* averages at 0.125, with the median falling below the mean, consistent with a right-skewed distribution. $Leverage_{\mathrm{Tot}}$ averages at 0.221, whereas the $Leverage_{\mathrm{LT}}$ mean and median exceed that of $Leverage_{\mathrm{ST}}$, suggesting that the sample firms rely more heavily on long-term financing. Further control variables also exhibit sufficient dispersion. *Size* and *Tangibility* display wide interquartile ranges of 4.478 to 7.935 and 0.222 to 0.710, respectively, while *Profitability*, *CapEx*, *Sales Growth*, and the macroeconomic indicators show meaningful variation across observations.

Table 1. Descriptive Statistics

Variable	N	Mean	STD	P25	Median	P75
Firm Value Proxies						
Q	104,197	2.209	2.686	1.022	1.529	2.495
ln(Q)	104,197	0.503	0.677	0.022	0.425	0.914
Economic Policy Uncertainty						
ln(EPU)	104,197	1.434	0.637	1.006	1.388	1.823
Financial Flexibility Proxies						
Cash	104,197	0.125	0.111	0.048	0.091	0.164
$Leverage_{Tot}$	104,197	0.221	0.136	0.118	0.209	0.309
$Leverage_{ST}$	104,197	0.065	0.068	0.016	0.044	0.087
$Leverage_{LT}$	104,197	0.156	0.115	0.060	0.139	0.230
Control Variables						
Size	104,197	6.287	2.403	4.478	6.064	7.935
Profitability	104,197	0.084	0.106	0.052	0.095	0.137
Tangibility	104,197	0.498	0.356	0.222	0.404	0.710
CapEx	104,197	0.038	0.032	0.015	0.029	0.050
R&D	104,197	0.044	0.061	0.007	0.023	0.057
Dividends	104,197	0.646	0.478	0.000	1.000	1.000
Age	104,197	3.964	0.885	3.258	3.970	4.736
Sales Growth	104,197	0.051	0.201	-0.024	0.052	0.136
GDP per Capita	104,197	10.870	0.104	10.810	10.876	10.925
GDP Growth	104,197	0.296	2.896	0.000	0.333	0.712
Exchange Rate Change	104,197	-0.002	0.042	-0.026	0.002	0.027

Notes: This table presents descriptive statistics for the empirical analysis variables. Sample comprises 104,197 firm-month observations. For each variable, the table reports the number of observations (N), mean, standard deviation (STD), 25th percentile (P25), median, and 75th percentile (P75). Detailed data and panel definitions in Section 4.

Panel A of Table 2 reports pairwise Pearson correlation coefficients for all regression variables. The key dependent variable, ln(*Q*) is most strongly positively correlated with *Profitability* (r = 0.253) and *Cash* (r = 0.211), while *Tangibility* (r = −0.225) and $Leverage_{Tot}$ (r = −0.149) exhibit the strongest negative correlations. These unconditional bivariate patterns suggest that more profitable and more liquid firms tend to command higher market valuations, whereas more asset-heavy and more levered firms do the opposite. The correlation between ln(*EPU*) and ln(*Q*) is positive but substantively negligible (r = 0.029), indicating no meaningful unconditional bivariate correlation. Regarding the explanatory variables, the largest pairwise correlations are observed between *Size* and *Age* (r = 0.496), *Profitability* and *Dividends* (r = 0.488), and *CapEx* and *Tangibility* (r = 0.457), none of which directly indicate collinearity concerns. Most notably among the macroeconomic controls, ln(*EPU*) is moderately correlated with *GDP per Capita* (r = 0.448), reflecting shared cross-country and cyclical trends.

Panel B of Table 2 reports variance inflation factors (VIFs) for the explanatory variables included in the baseline specification. The reported VIFs are low, ranging from 1.013 (*Exchange Rate Change*) to 1.649 (*Size*) and thus remain below conventional thresholds of 10 and 5 (Menard, 2002; Vittinghoff et al., 2005). Overall, these diagnostics indicate that multicollinearity is unlikely to pose a material concern in the baseline specifications. The VIFs for $Leverage_{ST}$ (1.155) and $Leverage_{LT}$ (1.176), when substituted for $Leverage_{Tot}$, are similarly low and do not suggest material multicollinearity concerns.

Table 2. Pairwise Correlations and Multicollinearity Statistics

Panel A. Pearson Correlation Matrix

Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**
(1) ln(Q)	1.000														
(2) ln(EPU)	**0.029**	1.000													
	(0.000)														
(3) Size	**-0.024**	0.000	1.000												
	(0.000)	(0.980)													
(4) Profitability	**0.253**	**-0.045**	**0.292**	1.000											
	(0.000)	(0.000)	(0.000)												
(5) Leverage_{Tot}	**-0.149**	**-0.067**	**0.206**	**-0.087**	1.000										
	(0.000)	(0.000)	(0.000)	(0.000)											
(6) Cash	**0.211**	**0.022**	**-0.263**	**-0.235**	**-0.271**	1.000									
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)										
(7) Tangibility	**-0.225**	**-0.049**	**0.138**	**0.133**	**0.176**	**-0.240**	1.000								
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)									
(8) CapEx	**0.011**	**-0.059**	**0.090**	**0.198**	**0.047**	**-0.109**	**0.457**	1.000							
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)								
(9) R&D	**0.196**	**0.023**	**-0.300**	**-0.343**	**-0.149**	**0.353**	**-0.244**	**-0.106**	1.000						
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)							
(10) Age	**-0.049**	**0.007**	**0.496**	**0.267**	**0.068**	**-0.275**	**0.257**	**0.060**	**-0.271**	1.000					
	(0.000)	(0.030)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)						
(11) Sales Growth	**0.149**	**0.008**	**-0.044**	**0.183**	**-0.078**	**0.054**	**-0.114**	**0.048**	**0.018**	**-0.072**	1.000				
	(0.000)	(0.013)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)					
(12) Dividends	**0.145**	-0.005	**0.445**	**0.488**	**-0.077**	**-0.195**	**0.091**	**0.113**	**-0.281**	**0.335**	**0.022**	1.000			
	(0.000)	(0.084)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)				
(13) GDP Growth	**0.046**	**-0.008**	-0.005	**-0.008**	0.003	**0.016**	-0.001	**-0.017**	-0.002	-0.003	**-0.037**	**-0.015**	1.000		
	(0.000)	(0.011)	(0.094)	(0.014)	(0.367)	(0.000)	(0.784)	(0.000)	(0.424)	(0.365)	(0.000)	(0.000)			
(14) GDP per Capita	**0.070**	**0.448**	**0.075**	0.000	**-0.108**	**0.078**	**-0.034**	**0.023**	**0.067**	**0.053**	**0.010**	**0.015**	**0.126**	1.000	
	(0.000)	(0.000)	(0.000)	(0.915)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)		
(15) Exchange Rate Change	**0.041**	**-0.065**	**0.008**	-0.003	0.005	**-0.008**	-0.002	0.001	0.004	0.004	**0.021**	**0.006**	**0.088**	**-0.007**	1.000
	(0.000)	(0.000)	(0.010)	(0.384)	(0.105)	(0.015)	(0.421)	(0.850)	(0.210)	(0.210)	(0.000)	(0.049)	(0.000)	(0.019)	

Panel B. Multicollinearity Statistics

Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**
VIF	-	1.277	1.649	1.553	1.225	1.308	1.471	1.334	1.338	1.485	1.083	1.571	1.033	1.326	1.013

Notes: This table reports pairwise correlations and multicollinearity statistics for the variables used in the regression analyses on a sample of 104,197 firm-month observations over the period 2005 to 2025. Panel A reports Pearson correlation coefficients with corresponding p-values in parentheses. Coefficients significant at the 5% level or below are shown in bold. Panel B reports variance inflation factors (VIFs) computed from the H1 baseline specification (1.1) reported in Table 3. Detailed variable definitions and sample derivation details provided in Section 4.

5. EMPIRICAL RESULTS

5.1. Empirical Strategy

This section describes the panel-regression-based econometric frameworks used to test our three hypotheses. All specification are estimated via the Stata *reghdfe* command and use ln(*Q*), as defined in Section 4.2.1, as the dependent variable. The main independent variable is ln(*EPU*). With both variables in logarithmic form, β_1 represents a constant elasticity, meaning a 1% increase in EPU is associated with a β_1% change in Tobin's Q. Unless otherwise stated, all specifications include the same vector of lagged controls, as defined in Section 4.3, denoted $\gamma'X$. To ensure valid statistical inference, standard errors are two-way clustered at the firm and year-month levels (Cameron et al., 2011). Firm-level clustering accounts for serial correlation, recognising that unobserved shocks to a firm's valuation tend to persist over time, while year-month clustering addresses cross-sectional correlation across firms within the same period, mitigating the mechanical dependence introduced by the country-level EPU regressor and any unabsorbed contemporaneous shocks. The need for the latter is reinforced by the Pesaran (2004) CD test ($CD = 128.638$, $p < 0.001$; Appendix E), which rejects cross-sectional independence in the baseline residuals. The following indexes apply throughout: i denotes firms, c countries, t year-month observations, m calendar months and y year.

5.1.1. Hypothesis 1

To test the hypothesis that EPU is negatively associated with firm valuation, we employ a diagnostic specification progression. The sequential saturation of fixed effects allows for a qualitative assessment of whether the ln(*EPU*) coefficient is stable or shifts systematically as more fixed effects are absorbed. Firstly, specification (A) is a pooled OLS regression that estimates the association between ln(*EPU*) and ln(*Q*) while controlling for the previously described set of variables $\gamma'X$.

$$\ln(Q_{i,t}) = \beta_1 \ln(EPU_{c,t}) + \gamma' X_{i,c,t} + \varepsilon_{i,c,t} \tag{A}$$

Specification (B) augments (A) with calendar-month fixed effects (θ_m) to absorb recurring seasonal fluctuations in market valuations unrelated to EPU.

$$\ln(Q_{i,t}) = \beta_1 \ln(EPU_{c,t}) + \gamma' X_{i,c,t} + \theta_m + \varepsilon_{i,c,t} \tag{B}$$

Specification (C) introduces firm fixed effects (α_i) that absorb time-invariant unobserved firm characteristics, shifting identification from between-firm to within-firm variation.

$$\ln(Q_{i,t}) = \beta_1 \ln(EPU)_{c,t} + \gamma' X_{i,c,t} + \alpha_i + \theta_m + \varepsilon_{i,c,t} \tag{C}$$

The preferred baseline, Specification (1.1), augments (C) with country-year fixed effects ($\delta_{c,y}$). These absorb time-varying country-level factors that may be correlated with both EPU and firm valuation, such as business-cycle fluctuations, fiscal and monetary policy changes, and sovereign risk dynamics. Given the combination of fixed effects, the ln(*EPU*) coefficient β_1 is estimated from month-to-month variation in country-level EPU within a given country-year, net of seasonal patterns and persistent firm heterogeneity. Specification (1.1) is strongly aligned with the work of Fütterer et al. (2026).

$$\ln\left(Q_{i,t}\right) = \beta_1 \ln(EPU)_{c,t} + \gamma' X_{i,c,t} + \alpha_i + \delta_{c,y} + \theta_m + \varepsilon_{i,c,t} \tag{1.1}$$

5.1.2. Hypothesis 2

To test Hypothesis 2, a linear ln(*EPU*) × *Cash* interaction is added to the baseline specification to allow the EPU–valuation association to vary with a firm's cash holdings.

$$\begin{aligned}\ln\left(Q_{i,t}\right) = \beta_1 \ln(EPU_{c,t}) + \beta_2\, Cash_{i,t} + \beta_3 \left(\ln(EPU_{c,t}) \times Cash_{i,t}\right) \\ + \gamma' X_{i,c,t} + \alpha_i + \delta_{c,y} + \theta_m + \varepsilon_{i,c,t}\end{aligned} \tag{2.1}$$

However, it is possible that the moderating relationship does not follow the linear form imposed by specification (2.1), for example if precautionary benefits and agency costs operate at different points of the *Cash* distribution. In this case, a linear interaction term might average opposing patterns at different points of the distribution and produce a statistically insignificant estimate. A quadratic interaction specification is therefore introduced to test for curvature in the moderating relationship:

$$\begin{aligned}\ln\left(Q_{i,t}\right) = \beta_1 \ln(EPU_{c,t}) + \beta_2 Cash_{i,t} + \beta_3 Cash_{i,t}^2 + \beta_4\left(\ln(EPU_{c,t}) \times Cash_{i,t}\right) \\ + \beta_5\left(\ln(EPU_{c,t}) \times Cash_{i,t}^2\right) + \gamma' X_{i,c,t} + \alpha_i + \delta_{c,y} + \theta_m + \varepsilon_{i,c,t}\end{aligned} \tag{2.2}$$

While the linear and quadratic specifications test for monotonic and curvilinear moderation across the full distribution, they impose functional form assumptions. The group-based decomposition relaxes these by estimating separate ln(*EPU*) slopes at distinct points of the *Cash* distribution, allowing direct comparison of the magnitude of the EPU–valuation association across firms with different levels of financial flexibility. Specifically, there are theoretical reasons to expect the relevant heterogeneity to concentrate at the extremes: acute vulnerability is highest among the least liquid firms (e.g., Campello et al., 2010; Denis & Sibilkov, 2010; Fahlenbrach et al., 2021) and potential agency costs are highest among the most liquid firms (e.g., Dittmar & Mahrt-Smith, 2007; Jensen, 1986). To isolate these extremes, firm-month observations are classified into three groups based on country × industry[10] *Cash* quartiles: *Low Cash* (Q1),

[10] Industry grouping based on firm SIC codes and the K. French 12-Industries framework (French, 2026) based on the work of Fama and French (1997).

Medium Cash (Q2–Q3 pooled), and *High Cash* (Q4). Pooling the two middle quartiles into a single reference group follows Fahlenbrach et al. (2021), who use tail comparisons to assess the association between financial flexibility and valuation during the COVID-19 crisis, and constructing quartiles at the country × industry level accounts for systematic cross-country and cross-industry differences in cash-holding norms (see Appendix F for country and industry breakdown). Under this methodology, quartile cutoffs are time-invariant, but group membership of each firm can vary over time depending on its cash holdings (see Figure G.1 in Appendix G for visualisation). Finally, we arrive at the following specification (2.3), where $GC_{i,t}^{k}$ is an indicator equal to one if firm *i* in month *t* belongs to cash group *k* (*k* = 1: *Low Cash*, *k* = 2: *Medium Cash*, *k* = 3: *High Cash*), and zero otherwise. The *Low Cash* group is the omitted reference, so the coefficient on ln(*EPU*) captures the EPU slope for low-cash firms, while $\beta_{1,\text{ Medium Cash}}$ and $\beta_{1,\text{ High Cash}}$ capture the slope differentials of medium- and high-cash firms relative to that reference.

$$\ln\left(Q_{i,t}\right) = \beta_1 \ln(EPU_{c,t}) + \sum_{k=2}^{3} \beta_{2,k}\left(\ln(EPU_{c,t}) \times GC_{i,t}^{k}\right) + \sum_{k=2}^{3} \beta_{3,k} GC_{i,t}^{k} + \gamma' X_{i,c,t} + \alpha_i + \delta_{c,y} + \theta_m + \varepsilon_{i,c,t} \tag{2.3}$$

5.1.3. Hypothesis 3

To test Hypothesis 3, the baseline specification (1.1) is extended analogously to the cash-based moderation analyses by interacting ln(*EPU*) with the maturity-dependent leverage ratios. Thus, the moderating role of financial leverage is analysed through a linear, quadratic, and group-based specification for each maturity-specific leverage definition *s* (total, long-term, and short-term leverage). In the long-term and short-term leverage moderation specifications, the respective complementary leverage ratio is included as a continuous level control to isolate each maturity effect. The first set of specifications augments the (1.1) baseline with linear interaction terms between ln(*EPU*) and the individual maturity-specific leverage ratios.

$$\ln\left(Q_{i,t}\right) = \beta_1 \ln(EPU_{c,t}) + \beta_2 Leverage_{s,i,t} + \beta_3\left(\ln(EPU_{c,t}) \times Leverage_{s,i,t}\right) + \gamma' X_{i,c,t} + \alpha_i + \delta_{c,y} + \theta_m + \varepsilon_{i,c,t}$$

(3.1.1) (3.1.2) (3.1.3)

Second, three quadratic interaction specifications are estimated to test for non-linear moderation patterns through each maturity-specific financial leverage definition (*s*).

$$\ln\left(Q_{i,t}\right) = \beta_1 \ln(EPU_{c,t}) + \beta_2 Leverage_{s,i,t} + \beta_3 Leverage_{s,i,t}^2 + \beta_4\left(\ln(EPU_{c,t}) \times Leverage_{s,i,t}\right) + \beta_5\left(\ln(EPU_{c,t}) \times Leverage_{s,i,t}^2\right) + \gamma' X_{i,c,t} + \alpha_i + \delta_{c,y} + \theta_m + \varepsilon_{i,c,t}$$

(3.2.1) (3.2.2) (3.2.3)

Finally, a group-based specification is employed for each maturity-specific financial leverage definition s. Again, there are theoretical reasons to expect the relevant heterogeneity to concentrate at the extremes. Financial distress costs and debt-overhang frictions intensify among the most leveraged firms (e.g., Campello et al., 2010; Denis & McKeon, 2012; Gamba & Triantis, 2008; Myers, 1977), while debt-based managerial discipline is weakest among the least leveraged firms (Jensen, 1986). Grouping is again based on country × industry quartiles of the relevant leverage ratio: *Low Leverage* (Q1), *Medium Leverage* (Q2–Q3 pooled), and *High Leverage* (Q4). Accordingly, we arrive at three maturity-specific specifications (3.3.1) to (3.3.3), where $GL_{s,i,t}^{k}$ is an indicator equal to one if firm i in month t belongs to leverage group k ($k = 1$: *Low Leverage*, $k = 2$: *Medium Leverage*, $k = 3$: *High Leverage*) within leverage specification s, and zero otherwise. The *High Leverage* group is the omitted reference, so the coefficient on ln(*EPU*) captures the EPU slope for high-leverage firms, while $\beta_{1,\text{ Low Leverage}}$ and $\beta_{1,\text{ Medium Leverage}}$ capture the slope differentials of low- and medium-leverage firms relative to that reference.

$$\ln\left(Q_{i,t}\right) = \beta_1 \ln\left(EPU_{c,t}\right) + \sum_{k=1}^{2} \beta_{2,k}\left(\ln(EPU)_{c,t} \times GL_{s,i,t}^{k}\right) + \sum_{k=1}^{2} \beta_{3,k} GL_{s,i,t}^{k}$$
$$+ \gamma' X_{i,c,t} + \alpha_i + \delta_{c,y} + \theta_m + \varepsilon_{i,c,t}$$

(3.3.1) (3.3.2) (3.3.3)

Two methodological caveats apply to the H2 and H3 frameworks. First, despite variable lagging, cash and leverage profiles remain endogenous choice variables and firms that anticipate EPU spikes could theoretically adjust their capital structures or cash holdings beforehand. However, EPU spikes are typically triggered by abrupt, exogenous political or macroeconomic events (Baker et al., 2016) that are inherently difficult for individual firms to anticipate, partially mitigating this concern. Second, as the country × industry quartile boundaries in the group-based specifications are time-invariant, firms can transition across group boundaries over time. Over our sample period, we observe some distributional drift, especially with the shares of high- and medium-cash observations increasing over time (Appendix G). We deem this drift acceptable for our research design, viewing it as a necessary econometric trade-off against the drawbacks of other grouping methods. For example, country × industry × year grouping would result in cells too small to yield reliable quartile cutoffs (39 observations per group on average), while simple year-based quartiles would overlook systematic differences in cash holdings and leverage structures between industries and countries (Appendix F).

5.2. Test of Hypothesis 1

5.2.1. Baseline Results

Table 3 reports the results from the specification progression described in Section 5.1.1. Columns (A) through (C) present sequential diagnostic specifications with progressively saturated fixed effects, and Column (1.1) presents the preferred baseline specification.

Table 3. Test of Hypothesis 1 – Economic Policy Uncertainty and Firm Value

Variable	**Exp. sign**	**(A)**	**(B)**	**(C)**	**(1.1)**
Dependent Variable		*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-	0.027	0.031	-0.059***	-0.071***
		(1.296)	(1.462)	(-3.456)	(-7.290)
Size	-	-0.011	-0.011	-0.204***	-0.253***
		(-1.367)	(-1.356)	(-6.105)	(-7.576)
Profitability	+	2.175***	2.176***	1.518***	1.568***
		(9.103)	(9.109)	(8.930)	(9.344)
$\text{Leverage}_{\text{Tot}}$	+/-	0.097	0.097	-0.069	-0.014
		(0.850)	(0.852)	(-0.658)	(-0.136)
Cash	+/-	1.106***	1.107***	0.563***	0.380***
		(6.434)	(6.436)	(4.274)	(3.058)
Tangibility	-	-0.391***	-0.391***	-0.151**	-0.221***
		(-8.368)	(-8.368)	(-2.058)	(-3.063)
CapEx	+	1.517***	1.521***	1.162***	1.285***
		(3.637)	(3.652)	(4.190)	(4.820)
R&D	+/-	2.520***	2.522***	1.123***	1.091***
		(6.916)	(6.921)	(2.952)	(3.016)
Age	+/-	0.004	0.004	0.312***	0.152*
		(0.212)	(0.201)	(3.533)	(1.654)
Sales Growth	+	0.149***	0.150***	0.031	0.102***
		(2.981)	(2.987)	(0.936)	(3.271)
Dividends	+	0.149***	0.150***	0.064***	0.077***
		(4.526)	(4.528)	(3.054)	(4.017)
GDP Growth	+	0.010**	0.011**	0.005	0.005***
		(2.458)	(2.560)	(1.375)	(3.210)
GDP per Capita	+/-	0.119	0.107	1.025***	-0.349
		(0.754)	(0.676)	(3.966)	(-1.378)
Exchange Rate Change	+/-	0.617**	0.626**	0.580**	0.706***
		(2.104)	(2.186)	(2.399)	(7.053)
Calendar-Month FE		No	Yes	Yes	Yes
Country-Year FE		No	No	No	Yes
Firm FE		No	No	Yes	Yes
Observations		104,197	104,197	104,197	104,197
R^2		0.241	0.241	0.711	0.748
R^2 (within)		0.241	0.241	0.119	0.128
p-value		0.000	0.000	0.000	0.000

Notes: Table 3 reports estimates from our H1 regressions (details in Section 5.1). Column "Exp. sign" reports expected coefficient signs based on Fütterer et al. (2026) and sources from Section 2; "+/-" indicates ambiguous evidence. *t*-statistics, in parentheses, based on standard errors clustered at the firm and year-month level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Variable definitions and sample derivation in Section 4.

Columns (A) and (B) present pooled OLS specifications without and with calendar-month FE, respectively. In both columns, the coefficient on ln(*EPU*) is positive but statistically insignificant. The overall R^2 is 0.241 in both specifications. Column (C) introduces firm fixed effects to absorb firm-specific heterogeneity, which leads the coefficient on ln(*EPU*) to turn negative and statistically significant ($\beta = -0.059$, $t = -3.456$, $p < 0.01$). R^2 rises to 0.711, and the within-R^2 is 0.119. The reversal in sign upon adding firm fixed effects suggests that between-firm cross-sectional variation, like differences across firms in countries with structurally elevated EPU and valuations, masks a negative within-firm association that emerges once unobserved time-invariant firm heterogeneity is absorbed. Column (1.1) presents the preferred baseline specification and adds country-year FE to the firm and calendar-month FE. In this specification, the coefficient on ln(*EPU*) stays significant ($p < 0.01$) and becomes more negative, reaching $\beta = -0.071$. Regarding the results' economic significance, a one-standard-deviation increase in ln(*EPU*) (SD = 0.637) corresponds to a change of $-0.071 \times 0.637 \approx -0.045$ in ln(*Q*), meaning an $\exp(-0.045) - 1 \approx -0.044$, or 4.4% decline in Tobin's Q. In sum, the preferred baseline results (1.1) indicate a significant negative association between EPU and firm valuation.

The control variables largely behave as expected. *Profitability* enters significantly with the largest positive coefficient, indicating that more profitable firms are associated with higher valuations. *CapEx*, *R&D*, and *Cash* also exhibit significant positive coefficients, suggesting that firms with greater investment activity, higher R&D intensity, and stronger liquidity positions tend to achieve higher valuations. *Sales Growth* and *Dividends* coefficients are likewise positive and significant at the 1% level, implying that stronger revenue growth and dividend payouts are associated with higher valuations. In contrast, *Size* and *Tangibility* display significant negative coefficients, indicating that larger firms and those with a higher proportion of tangible assets tend to be valued lower. *Age* enters with a positive, weakly significant coefficient and $Leverage_{\mathrm{Tot}}$ is statistically insignificant. Among the macroeconomic controls, *GDP Growth* and *Exchange Rate Change* show significant positive coefficients and *GDP per Capita* is not statistically significant, likely due to absorption through the country-year fixed effects.

5.2.2. Discussion

The preferred baseline results in column (1.1) provide clear support for H1. The estimated economic magnitude for column (1.1) of a 4.4% decline in Tobin's Q for a one-standard-deviation increase in ln(*EPU*) aligns closely with Fütterer et al. (2026), who report a 5.0% decline in firm value for a one-standard-deviation increase in their log-transformed European EPU proxy, and broadly with the literature documenting negative associations between EPU and U.S. firm valuation (Brogaard & Detzel, 2015; Jory et al., 2020).

This negative association could be explained by the two-channel structure developed in Section 3. First, through the discount-rate channel, rising EPU is associated with higher equity risk premia and wider bid–ask spreads (Brogaard & Detzel, 2015; Nagar et al., 2019; Pástor & Veronesi, 2012). Second, through the cash-flow channel, elevated EPU is associated with lower expected dividends via investment delays (Bernanke, 1983; Bloom, 2009) and higher borrowing costs (Kaviani et al., 2020; Tran, 2021). Therefore, a possible interpretation of our results is that EPU is associated with lower equity valuations through both sides of the valuation equation: investors demand higher returns for bearing greater EPU, while the expected future cash flows themselves are likely to weaken as firms postpone investment and face tighter financing conditions.

While a formal decomposition of our results into the two channels lies beyond our research design, the expert interviews offered qualitative context on their respective roles. A notable insight from the equity analyst interviews was a divergence in how EPU is incorporated into valuations. Some equity analysts did not account for EPU explicitly, instead treating it as an indirect input into their holistic company risk assessment, while others addressed it directly. Among the latter group, rising EPU was reported to affect valuations predominantly through the discount-rate channel, by way of direct cost-of-equity adjustments. Regarding the cash-flow channel, equity analysts stated that EPU influences cash-flow projections primarily through financing costs but consistently characterised this as a marginal effect. One equity analyst summarised this view:

> *"So, for us it is mostly the discount-rate channel. There is some impact on cash flow from higher financing costs […] but the cash-flow effect is pretty limited." (Equity Analyst #3)*

Financial managers offered a complementary perspective on the role of the cash-flow channel. Interviewees indicated that elevated EPU could partly restrict capital market access, translating into higher financing costs. However, the proposition that EPU induces investment delays received only partial support. Financial managers noted that while heightened EPU shifts internal discussions on capital and personnel investment towards resilience considerations, it usually does not directly lead to investment halts or delays. Furthermore, equity analysts and financial managers both noted that the impact of EPU on firm valuation can depend on the industry and geographic footprint of each company.

In sum, the interview evidence broadly supports the two-channel interpretation derived from the literature. In that, among the interviewed practitioners, the discount-rate channel appears to carry greater practical weight in valuation than the cash-flow channel, and within the cash-flow channel, financing costs play a stronger role than investment delays.

Two caveats qualify our results. First, the Baker et al. (2016) index is constructed from newspaper coverage, and broad declines in firm valuation could theoretically attract media attention to EPU, mechanically raising the index and thereby introducing reverse causality concerns. However, this is unlikely to drive our results, as within a country-year, the EPU index varies month-to-month primarily in response to identifiable policy events such as elections, central-bank decisions, fiscal announcements, and geopolitical news (Baker et al., 2016). Because these shocks usually develop independently of individual corporate performance, reverse causality does not pose a material threat to our identification strategy. Furthermore, as already noted by the interviewees, the association between EPU and firm value is strongly dependent on the country and industry of the companies in question. We demonstrate this in Appendix H through industry- and country-based analyses and address this concern in our robustness tests in Section 5.5.

5.3. Test of Hypothesis 2

This section reports the results for our H2 analyses, which test how cash holdings moderate the EPU–valuation association. Table 4 presents our three core specifications: the linear specification interacting ln(*EPU*) and *Cash* (Column 2.1), the quadratic interaction specification (Column 2.2), and the group-based specification (Column 2.3).

Table 4. Test of Hypothesis 2 – The Moderating Effect of Cash Holdings

Variable	**(2.1)**	**(2.2)**	**(2.3)**
Test Type	*Linear*	*Quadratic*	*Groups*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.071***	-0.097***	-0.095***
	(-4.663)	(-4.455)	(-5.683)
Cash	0.378**	0.202	
	(2.362)	(0.520)	
ln(EPU) × Cash	0.001	0.425*	
	(0.013)	(1.691)	
$Cash^2$		0.466	
		(0.572)	
ln(EPU) × $Cash^2$		-0.973**	
		(-2.003)	
ln(EPU) × Low Cash			
ln(EPU) × Medium Cash			0.038**
			(2.205)
ln(EPU) × High Cash			0.022
			(0.806)
Size	-0.253***	-0.251***	-0.252***
	(-7.571)	(-7.509)	(-7.536)
Profitability	1.568***	1.548***	1.553***
	(9.350)	(9.397)	(9.345)
$Leverage_{Tot}$	-0.014	-0.021	-0.026
	(-0.135)	(-0.201)	(-0.259)
Tangibility	-0.221***	-0.219***	-0.223***
	(-3.064)	(-3.068)	(-3.207)
CapEx	1.285***	1.280***	1.303***
	(4.820)	(4.816)	(4.892)
R&D	1.091***	1.095***	1.102***
	(3.018)	(2.996)	(3.055)
Age	0.152*	0.151	0.153*
	(1.658)	(1.643)	(1.677)
Sales Growth	0.102***	0.103***	0.104***
	(3.270)	(3.313)	(3.331)
Dividends	0.077***	0.075***	0.077***
	(4.018)	(3.923)	(4.020)
GDP Growth	0.005***	0.005***	0.005***
	(3.210)	(3.203)	(3.218)
GDP per Capita	-0.349	-0.342	-0.353
	(-1.378)	(-1.362)	(-1.395)
Exchange Rate Change	0.706***	0.703***	0.704***
	(7.059)	(7.054)	(7.052)
Calendar-Month FE	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Observations	104,197	104,197	104,197
R^2	0.748	0.749	0.748
R^2 (within)	0.128	0.130	0.129
p-value	0.000	0.000	0.000

Notes: This table reports estimates from panel regressions of firm valuation on country-level EPU and its interaction with cash holdings, as described in Section 5.1. In column (2.3), firms are classified into low, medium, and high cash groups based on country × industry cash quartiles, with the low group as the omitted reference. Additionally, group slopes, pairwise Wald tests, and joint Wald tests are reported in Table J.1. *t*-statistics, in parentheses, are based on standard errors two-way clustered at the firm and year-month level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Detailed variable definitions and sample derivation are provided in Section 4.

5.3.1. Linear Interaction Results

Specification (2.1) augments the preferred H1 baseline (1.1) with a linear interaction between ln(*EPU*) and *Cash*. The interaction coefficient is close to zero and statistically insignificant (β = 0.001, t = 0.013), providing no evidence of a linear moderating association between cash holdings and the EPU–valuation slope. The coefficient on ln(*EPU*) remains negative and statistically significant ($\beta = -0.071$, $t = -4.663$, $p < 0.01$), essentially unchanged from (1.1), indicating that the inclusion of the interaction does not absorb the main EPU–valuation association. Control-variable estimates and model fit remain close to the baseline ($R^2 = 0.748$, within-$R^2 = 0.128$).

5.3.2. Quadratic Interaction Results

Column (2.2) introduces quadratic terms to test for curvature in the cash-based moderation. The coefficient on the linear interaction term ln(*EPU*) × *Cash* is positive and weakly significant ($\beta = 0.425$, $t = 1.691$, $p < 0.10$), while the coefficient on the quadratic interaction term ln(*EPU*) × $Cash^2$ is negative and significant at the 5% level ($\beta = -0.973$, $t = -2.003$). A joint Wald test does not reject the null hypothesis that the linear and quadratic interaction coefficients are jointly zero (p = 0.123). Although the interaction terms are not jointly significant, the point estimates are consistent with a concave moderation profile, in which the marginal attenuation of the EPU–valuation penalty by cash would be largest at low cash levels and diminish as cash rises. In other words, an additional unit of cash dampens the negative EPU–valuation association more strongly for low-cash firms than for high-cash firms, and above the turning point the attenuation effect would weaken further and eventually reverse sign. The implied marginal moderating effect of cash on the EPU–valuation association[11] is given by 0.425 − 1.946 × *Cash*, which indicates that the turning point of the EPU slope lies at a *Cash* value of 0.218 (= 0.425 / 1.946). The estimated turning point furthermore lies close to the 84th percentile of the *Cash* distribution, implying that the marginal moderating effect of cash on the EPU slope is positive over most of the sample. This concave profile, though it does not receive strong statistical support, is visualised in Figure I.1 in Appendix I, which plots the implied EPU slope at each cash level with 95% confidence intervals. However, the confidence intervals are wide, especially at the upper end of the distribution, consistent with the joint insignificance of the interaction terms, limiting the precision with which the profile can be characterised.

5.3.3. Group-Based Interaction Results

Column (2.3) decomposes the EPU effect across the three previously described cash-holding groups, created according to the methodology described in Section 5.1. The three group indicators are denoted *Low Cash*, *Medium Cash*, and *High Cash*, each equal to one if an observation falls in the corresponding group along the country × industry *Cash* distribution and zero otherwise. Two points of construction are worth noting before

[11] Calculated as $\beta_{\text{linear interaction}} + 2 \times \beta_{\text{quadratic interaction}} \times$ Cash.

turning to the results. First, the *Low Cash* group serves as the reference category, as it is hypothesised to exhibit the most negative EPU sensitivity. The ln(*EPU*) × *Low Cash* interaction is consequently omitted from the regression. The coefficient on ln(*EPU*) accordingly captures the EPU slope for low-cash firms, while the medium-cash and high-cash interaction coefficients report differentials relative to that reference and can therefore be interpreted as the attenuation predicted in Section 3. Additionally, group slopes, pairwise Wald tests, and joint Wald tests are reported in Appendix J. Second, the level effect of *Cash* is mechanically absorbed by the group dummies and therefore omitted.

The coefficient on ln(*EPU*), which captures the EPU slope for the low-cash reference group, is estimated at $\beta = -0.095$ ($t = -5.683$, $p < 0.01$). The medium-minus-low differential is positive and statistically significant at the 5% level ($\beta = 0.038$, $t = 2.205$), indicating that the EPU–valuation association is less negative for medium-cash firms than for low-cash firms. The high-minus-low differential is also positive but not statistically significant at conventional levels ($\beta = 0.022$, $t = 0.806$). The implied EPU slopes are −0.095 for low-cash firms, −0.057 (= −0.095 + 0.038) for medium-cash firms, and −0.073 (= −0.095 + 0.022) for high-cash firms, and all three implied slopes are individually significant at the 1% level (Appendix J). A joint test of slope equality rejects the null hypothesis (H_0: $\beta_{\text{Low Cash}} = \beta_{\text{Medium Cash}} = \beta_{\text{High Cash}}$) at the 10% level ($p = 0.078$). The model fit remains comparable to the baseline ($R^2 = 0.748$, within-$R^2 = 0.129$).

To assess the economic magnitude of these differences, we compute the implied change in the level of Tobin's Q associated with a one-standard-deviation increase in ln(*EPU*) ($SD = 0.637$). For low-cash firms, the implied decline in Tobin's Q is approximately 5.9%. The analogous figures are 3.6% for medium-cash and 4.5% for high-cash firms.

5.3.4. Discussion

The empirical evidence provides partial and specification-dependent support for H2, which stated that higher cash holdings attenuate the negative association between EPU and firm value.

Starting with the linear specification, the interaction yields no statistically significant moderation, indicating that cash holdings do not uniformly attenuate the EPU–valuation association across the full *Cash* distribution. Considering the non-linear patterns suggested in the subsequent specifications, this statistically insignificant coefficient may partly reflect the fact that the linear specification imposes a single constant moderating slope across the full distribution, which can obscure heterogeneity at different cash levels (Hainmueller et al., 2019).

A different picture emerges in the non-linear specifications. In the group-based specification, medium-cash firms display a significantly less negative EPU slope than low-cash firms ($\beta = 0.038$, $p < 0.05$), implying that moving from the bottom of the distribution to intermediate cash holdings is associated with a meaningful, if partial, cushioning of the valuation penalty under elevated EPU. The concave profile traced by the quadratic estimates is directionally consistent with this finding, though the supporting evidence is mixed: the quadratic interaction term reaches 5% significance, the linear interaction only 10% significance, and the two interactions are not jointly significant in a Wald test. The evidence on whether high-cash firms face a different EPU–valuation association than medium-cash firms is weaker. Although the implied EPU slope for the high-cash group (−0.073) is more negative than for the medium-cash group (−0.057), and the concave profile of the quadratic specification points in the same direction, this pattern is not statistically robust. The difference between the two slopes is statistically insignificant (Wald $p = 0.462$), and the joint Wald test on the quadratic interaction terms cannot be rejected at conventional levels ($p = 0.123$). Consequently, the non-monotonic moderating role of cash holdings, with it being value-protective at intermediate levels and this role weakening as cash accumulates, should be interpreted as directional evidence rather than an established result. Our findings are directionally consistent with Fahlenbrach et al. (2021), who document that cash holdings mitigated the stock-price drop during the initial COVID-19 market collapse, but stand in apparent tension with the linear specification they employ. However, the two settings are not directly comparable. Fahlenbrach et al. (2021) study a short and extreme crisis window in which firm survival and near-term financing capacity plausibly dominate other valuation channels, making the precautionary motive for cash holdings especially salient. In contrast, our setting captures broader EPU fluctuations over time, where the market is more likely to weigh the flexibility benefits of cash holdings against the costs of excess liquidity. The divergence therefore likely reflects differences in empirical setting rather than incompatible underlying mechanisms. At the same time, our findings align with prior evidence on the non-monotonic value of cash holdings. Faulkender and Wang (2006) document a higher marginal value of cash for financially constrained firms, paralleling the theme that liquidity is more valuable where it is scarce. Furthermore, the weakening moderating role of cash we observe at higher levels is in line with Dittmar and Mahrt-Smith (2007), who find that high cash balances are not uniformly valued positively under agency and governance considerations.

Overall, the quantitative results provide partial support for H2 and find a potential explanation in, as we hypothesised in Section 3, two countervailing forces that operate across the *Cash* distribution. At low cash levels, the precautionary and financing-friction mechanisms (Bindal et al., 2025; Fahlenbrach et al., 2021; Kaviani et al., 2020; Pástor & Veronesi, 2012) plausibly dominate: additional liquidity materially improves a firm's ability to absorb cash-flow shortfalls, sustain operational investments, and avoid costly external financing. As cash holdings rise, the marginal benefit of further liquidity diminishes, and agency-related concerns begin to carry greater weight in investors' assessments (Dittmar & Mahrt-Smith, 2007; Jensen, 1986), potentially amplified by the heightened information asymmetry that accompanies elevated EPU (Nagar et al., 2019). Accordingly, these results can be interpreted as suggesting that firms at the lower end of the cash distribution benefit most from marginal increases in liquidity during high-EPU episodes, as each additional unit of cash eases potential financing constraints and reduces the risk of having to cut investment or raise external funds on unfavourable terms. Once a firm holds enough cash to comfortably cover its operational and precautionary needs, however, the protective value of further liquidity declines, while investors begin to pay more attention to the agency costs of holding idle resources.

While the empirical design does not permit a formal test of these mechanisms, our interview evidence offers complementary insight into how they may operate. Although practitioners often framed cash's protective value in crisis-specific terms, the underlying mechanisms they described operate continuously in the perceived uncertainty environment and therefore also apply, with attenuated magnitude, to ordinary EPU variation. Regarding the protective value of cash holdings, both groups placed particular emphasis on the buffering function of liquidity when access to external financing could deteriorate. Financial managers regarded a minimum cash buffer as essential for sustaining operations and meeting near-term working-capital obligations under elevated EPU, with several explicitly tying this view to the experience of capital-market windows narrowing during the 2008 financial crisis and the early COVID-19 shock. Equity analysts shared this view, characterising cash as crucial when risk perceptions shift and noting that capital-procurement channels which function well in calm periods can deteriorate rapidly. One equity analyst especially emphasised the difference between calm and stressed capital access for smaller firms:

> *"The first and most important thing is cash. [...] in a crisis, the capital-procurement channels dry up very quickly — what worked a few months ago suddenly no longer works. [...] small companies only get money when they do not need it, but when they need it, there is none available because of the risk." (Equity Analyst #2)*

Beyond operational buffering, both groups also pointed to a more strategic dimension, observing that firms entering an EPU episode with substantial liquidity could act counter-cyclically. One financial manager especially highlighted that crises tend to be temporary, allowing firms with excess capital to pursue inorganic growth and acquire distressed competitors at materially discounted valuations. Conversely, both groups described substantial penalties for excess cash holdings under elevated EPU. The dominant mechanism described was an agency-cost concern, with one financial manager characterising the issue as the "lazy balance sheet" problem, whereby managers retaining substantial unallocated liquidity face weaker capital-allocation discipline and may deploy the buffer into value-destructive investments. Equity analysts noted that this concern was likely amplified under elevated EPU, when the harder-to-verify operating environment makes it more difficult for outside investors to assess whether retained cash is being preserved for genuine precautionary or strategic purposes, or simply absorbed by managerial discretion. One equity analyst explained that the resulting valuation discount applies pre-emptively, with investors marking down firms whose management is perceived as likely to deploy excess cash unwisely, before any actual deployment occurs. The same equity analyst captured the state-dependence of these dynamics in a manner that closely tracks our non-monotonic empirical pattern:

> *"In practice, when interest rates are low and a company is sitting on a proverbial bag of money, investors start poking. They want a special dividend. […] The company always defends itself by saying: there are also bad times, and when rates rise it is nice to have a war chest. […] During good times, investors push to use excess cash for dividends or buybacks. During bad times, those same investors positively acknowledge larger cash holdings." (Equity Analyst #1)*

Taken together, the interview accounts generally strengthen the interpretation suggested by the literature and our quantitative results. Practitioners highlighted liquidity's protective role at lower cash levels while also pointing to agency-cost concerns and a declining marginal benefit of cash at higher levels, echoing the directional non-monotonic pattern suggested by our empirical estimates.

Several statistical caveats qualify these conclusions. First, the quadratic results are only suggestive: although the individual interaction coefficients point toward concavity, they are not jointly significant, so the fitted turning point should not be treated as statistically established. Second, the group-based specification provides only partial corroboration. The significant medium-minus-low contrast indicates that cash heterogeneity matters, but the non-significant high-minus-low contrast limits the precision with which the right-hand side of the pattern can be characterised. Third, both non-linear approaches depend on specification choices. The quadratic model imposes a particular functional form, while the group decomposition depends on the quartile-based grouping scheme and the chosen cutoffs. Different functional forms or alternative grouping rules could shift the apparent location and strength of the non-linearity. Several model specification concerns, including the grouping methodology, are addressed in the robustness tests of Section 5.5.

5.4. Test of Hypothesis 3

This section reports the results for H3, which tests how leverage moderates the EPU–valuation association. As described in Section 5.1.3, each specification is estimated separately for total ($Leverage_{\mathrm{Tot}}$), short-term ($Leverage_{\mathrm{ST}}$), and long-term ($Leverage_{\mathrm{LT}}$) leverage. Table 5 presents nine specifications organised in three panels: linear interactions (Columns 3.1.1 through 3.1.3), quadratic interactions (Columns 3.2.1 through 3.2.3), and group-based decompositions using country × industry leverage quartiles (Columns 3.3.1 through 3.3.3).

Table 5. Test of Hypothesis 3 – The Moderating Effect of Leverage

Variable	**(3.1.1)**	**(3.1.2)**	**(3.1.3)**	**(3.2.1)**	**(3.2.2)**	**(3.2.3)**	**(3.3.1)**	**(3.3.2)**	**(3.3.3)**
Test Type	*Linear*	*Linear*	*Linear*	*Quadratic*	*Quadratic*	*Quadratic*	*Groups*	*Groups*	*Groups*
Leverage Specification (s)	*Tot*	*ST*	*LT*	*Tot*	*ST*	*LT*	*Tot*	*ST*	*LT*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.045**	-0.068***	-0.048***	-0.049*	-0.054***	-0.068***	-0.096***	-0.081***	-0.103***
	(-2.264)	(-5.328)	(-2.911)	(-1.785)	(-3.612)	(-3.246)	(-5.414)	(-5.104)	(-5.880)
ln(EPU) × $Leverage_s$	-0.117	-0.038	-0.147*	-0.073	-0.604**	0.210			
	(-1.499)	(-0.285)	(-1.723)	(-0.335)	(-2.156)	(0.924)			
$Leverage_s^2$				1.573**	0.029	2.693***			
				(2.455)	(0.023)	(3.189)			
ln(EPU) × $Leverage_s^2$				-0.082	2.480***	-0.939*			
				(-0.220)	(2.813)	(-1.802)			
ln(EPU) × Low $Leverage_s$							0.042	0.049**	0.032
							(1.448)	(2.097)	(1.198)
ln(EPU) × Medium $Leverage_s$							0.028	-0.006	0.047**
							(1.515)	(-0.389)	(2.555)
ln(EPU) × High $Leverage_s$									
$Leverage_{Tot}$	0.158			-0.658*					
	(1.110)			(-1.697)					
$Leverage_{ST}$		-0.062	-0.103		-0.177	-0.105			-0.124
		(-0.288)	(-0.787)		(-0.387)	(-0.798)			(-0.986)
$Leverage_{LT}$		0.010	0.224		0.050	-0.832**		0.029	
		(0.095)	(1.479)		(0.459)	(-2.132)		(0.282)	
Size	-0.254***	-0.254***	-0.254***	-0.247***	-0.253***	-0.250***	-0.249***	-0.254***	-0.252***
	(-7.586)	(-7.624)	(-7.593)	(-7.419)	(-7.628)	(-7.480)	(-7.523)	(-7.680)	(-7.589)
Profitability	1.568***	1.563***	1.560***	1.569***	1.558***	1.567***	1.556***	1.560***	1.556***
	(9.353)	(9.311)	(9.315)	(9.358)	(9.326)	(9.377)	(9.261)	(9.344)	(9.296)
Cash	0.380***	0.375***	0.374***	0.330***	0.349***	0.351***	0.353***	0.357***	0.360***
	(3.062)	(3.016)	(3.011)	(2.615)	(2.803)	(2.803)	(2.837)	(2.882)	(2.880)
Tangibility	-0.217***	-0.221***	-0.218***	-0.231***	-0.212***	-0.224***	-0.217***	-0.217***	-0.218***
	(-3.008)	(-3.063)	(-3.032)	(-3.195)	(-2.953)	(-3.109)	(-3.037)	(-3.023)	(-3.047)
CapEx	1.284***	1.277***	1.274***	1.319***	1.288***	1.304***	1.285***	1.261***	1.287***
	(4.816)	(4.784)	(4.763)	(4.954)	(4.833)	(4.879)	(4.810)	(4.745)	(4.805)
R&D	1.083***	1.090***	1.081***	1.104***	1.094***	1.084***	1.093***	1.102***	1.073***
	(3.001)	(3.009)	(2.996)	(3.047)	(3.010)	(3.009)	(3.020)	(3.067)	(2.965)
Age	0.152*	0.153*	0.152*	0.152*	0.148	0.154*	0.153*	0.157*	0.156*
	(1.662)	(1.669)	(1.672)	(1.675)	(1.623)	(1.708)	(1.687)	(1.721)	(1.718)
Sales Growth	0.102***	0.102***	0.101***	0.101***	0.104***	0.100***	0.101***	0.100***	0.100***
	(3.261)	(3.260)	(3.238)	(3.256)	(3.319)	(3.233)	(3.222)	(3.217)	(3.218)
Dividends	0.078***	0.076***	0.077***	0.080***	0.076***	0.078***	0.076***	0.076***	0.076***
	(4.068)	(3.982)	(4.058)	(4.236)	(4.015)	(4.088)	(4.019)	(4.033)	(4.026)
GDP Growth	0.005***	0.005***	0.005***	0.005***	0.005***	0.005***	0.005***	0.005***	0.005***
	(3.236)	(3.225)	(3.244)	(3.257)	(3.237)	(3.242)	(3.251)	(3.286)	(3.256)
GDP per Capita	-0.353	-0.355	-0.356	-0.359	-0.354	-0.354	-0.357	-0.375	-0.362
	(-1.395)	(-1.403)	(-1.406)	(-1.416)	(-1.403)	(-1.394)	(-1.406)	(-1.468)	(-1.426)
Exchange Rate Change	0.707***	0.706***	0.707***	0.705***	0.707***	0.707***	0.706***	0.706***	0.706***
	(7.053)	(7.061)	(7.058)	(7.024)	(7.082)	(7.035)	(7.038)	(7.051)	(7.044)
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	104,197	104,197	104,197	104,197	104,197	104,197	104,197	104,197	104,197
R^2	0.748	0.748	0.748	0.749	0.749	0.749	0.748	0.749	0.748
R^2 (within)	0.128	0.128	0.128	0.132	0.131	0.131	0.129	0.131	0.129
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: This table reports estimates from panel regressions of firm valuation on country-level EPU and its interaction with financial leverage. ln(*Q*) is the natural logarithm of Tobin's Q, and ln(*EPU*) that of the country-level EPU index of Baker et al. (2016) (see Section 4 for variable definitions). Each specification is estimated for total (Tot), short-term (ST), and long-term (LT) leverage, with *s* indexing the maturity decomposition. In Columns (3.3.1) to (3.3.3), firms are sorted into low-, medium-, and high-leverage groups by country × industry quartiles (high group as omitted reference). Additionally, group slopes, pairwise Wald tests, and joint Wald tests are reported in Table J.1. *t*-statistics, in parentheses, are based on standard errors clustered at the firm and year-month level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

5.4.1. Linear Interaction Results

Columns (3.1.1) through (3.1.3) present linear interaction specifications for total, short-term, and long-term leverage, respectively. The interaction terms are negative in all three specifications but vary in statistical significance: $\beta = -0.117$ for total leverage and $\beta = -0.038$ for short-term leverage are both insignificant, while $\beta = -0.147$ for long-term leverage is weakly significant at the 10% level.

5.4.2. Quadratic Interaction Results

Total Leverage

For total leverage (Column 3.2.1), neither the linear interaction term ($\beta = -0.073$) nor the quadratic interaction term ($\beta = -0.082$) is statistically significant, providing no clear evidence of non-linearity in the moderation by total leverage. Consistent with this, a joint Wald test fails to reject the null hypothesis that the two interaction terms are jointly equal to zero ($p = 0.294$). Figure I.2 plots the implied EPU slope as a function of total leverage with pointwise 95% confidence intervals. The fitted slope is close to linear with wide confidence bands across the leverage distribution.

Short-Term Leverage

For short-term leverage (Column 3.2.2), the linear interaction term is negative and significant at the 5% level ($\beta = -0.604$, $t = -2.156$), while the quadratic interaction term is positive and significant at the 1% level ($\beta = 2.480$, $t = 2.813$). The positive coefficient on the quadratic interaction implies that the EPU slope is convex in $Leverage_{ST}$, meaning the EPU slope becomes more negative as short-term leverage rises from low values, reaches its most negative point at the turning point, and then becomes less negative. A joint Wald test rejects the null hypothesis that the two interaction terms are jointly equal to zero (Wald $p = 0.014$). The implied marginal moderating effect of short-term leverage on the EPU slope is given by $-0.604 + 4.960 \times Leverage_{ST}$, which is negative for short-term leverage values below the turning point of 0.122 (= 0.604 / 4.960) and positive above that threshold, which lies close to the 85th percentile of the short-term leverage distribution. Figure I.3 plots the implied EPU slope as a function of $Leverage_{ST}$ with pointwise 95% confidence intervals, and visualises the convex moderation profile described above. The confidence intervals are wide in the upper part of the $\mathrm{Leverage}_{ST}$ distribution, limiting the precision with which the upper-tail moderation can be characterised.

Long-Term Leverage

For long-term leverage (Column 3.2.3), the linear interaction term is positive but not statistically significant ($\beta = 0.210$, $t = 0.924$), whereas the quadratic interaction term is negative and reaches weak 10% significance ($\beta = -0.939$, $t = -1.802$). A joint Wald test rejects the null hypothesis that the two interaction terms are jointly equal to zero ($p = 0.026$), indicating that the non-linear moderation pattern is statistically supported when the interaction terms are evaluated jointly. Although the individual interaction coefficients are not conventionally significant, the point estimates are consistent with a concave moderation profile. The implied marginal moderating effect of long-term leverage on the EPU slope is given by 0.210 − 1.878 × $Leverage_{\mathrm{LT}}$, which is positive for $Leverage_{\mathrm{LT}}$ values below the turning point of 0.112 (close to the 41st $Leverage_{\mathrm{LT}}$ distribution percentile), and negative above it. Figure I.4 plots the implied EPU slope as a function of $Leverage_{\mathrm{LT}}$ and visualises the described concave moderation profile.

5.4.3. Group-Based Interaction Results

Columns (3.3.1) through (3.3.3) decompose the EPU effect based on maturity-specific leverage groups per country × industry, created according to the methodology described in Section 5.1. The group indicators are denoted $Low\ Leverage_{s}$, $Medium\ Leverage_{s}$, with *s* indexing the specific maturity decomposition (short-term, long-term or total leverage). Two methodological points are worth noting. First, the high-leverage groups serve as the omitted reference categories in each group-based specification, as they are hypothesised to exhibit the most negative EPU sensitivity (see Section 3). The interaction terms ln(*EPU*) × $High\ Leverage_{s}$ are consequently omitted from the regressions. The ln(*EPU*) coefficients thus capture the EPU slope for high-leverage firms, while the medium and low group interaction coefficients report differentials relative to that reference and are interpretable as the attenuation effect predicted in Section 3. Additionally, group slopes, pairwise Wald tests, and joint Wald tests are reported in Appendix J. Second, the level effect of each leverage variable underlying the group construction is mechanically absorbed by the group dummies and is therefore omitted. The level effects of the remaining leverage components are reported as continuous controls where applicable.

Total Leverage

Column (3.3.1) decomposes the EPU sensitivity based on total leverage groups. The coefficient on ln(*EPU*) in this specification represents the EPU slope for the high-leverage reference group and is estimated at $\beta = -0.096$ ($t = -5.414$, $p < 0.01$). The medium-minus-high differential is positive but not statistically significant ($\beta = 0.028$, $t = 1.515$), and the low-minus-high differential is likewise positive and not statistically significant ($\beta = 0.042$, $t = 1.448$). The implied EPU slopes are therefore −0.096 for high-leverage firms, −0.068 (= −0.096 + 0.028) for medium-leverage firms, and −0.054 (= −0.096 + 0.042) for low-leverage firms. All three implied slopes are individually significant at the 1% level. The implied slopes become monotonically more negative from low to high leverage, although neither the medium-minus-high differential ($p = 0.131$) nor the low-minus-high differential ($p = 0.150$) reaches 5% significance levels. The low-minus-medium contrast is also not significant ($p = 0.573$), and the joint test of slope equality (H_0: $\beta_{\text{Low Leverage}} = \beta_{\text{Medium Leverage}} = \beta_{\text{High Leverage}}$) is not rejected ($p = 0.241$). To gauge the economic magnitude of these differences, we compute the approximate implied change in the level of Tobin's Q associated with a one-standard-deviation increase in ln(*EPU*), which is 5.9% for the high-leverage group, 4.2% for the medium group, and 3.4% for the low group. These values are illustrative only, given the partial lack of clear significance.

Short-Term Leverage

Column (3.3.2) reports the analogous decomposition for short-term leverage. The EPU slope for the high short-term leverage reference group is $\beta = -0.081$ ($t = -5.104$, $p < 0.01$). The medium-minus-high differential is negative and not statistically significant ($\beta = -0.006$, $t = -0.389$). The low-minus-high differential, by contrast, is positive and statistically significant at the 5% level ($\beta = 0.049$, $t = 2.097$), indicating that firms in the low short-term leverage group display a less negative EPU–valuation association than firms in the high group. The implied EPU slopes are therefore −0.081 for the high short-term leverage group, −0.087 for the medium group, and −0.032 for the low group. The slopes for the medium and high short-term leverage groups are individually significant at the 1% level, while the slope for the low group reaches only weak significance at the 10% level. The medium-minus-high differential is not statistically significant ($p = 0.700$), whereas the low-minus-medium contrast is significant at the 1% level ($p = 0.007$). The joint test of slope equality across the short-term leverage groups is rejected at the 5% level ($p = 0.025$). In terms of economic magnitudes, the approximate implied reductions in the level of Tobin's Q for a one-standard-deviation increase in ln(*EPU*) are 5.0% for the high short-term leverage group, 5.4% for the medium group, and 2.0% for the low group.

Long-Term Leverage

Column (3.3.3) presents the decomposition for long-term leverage. The EPU slope for the high long-term leverage reference group is $\beta = -0.103$ ($t = -5.880$, $p < 0.01$). The medium-minus-high differential ($\beta = 0.047$) is positive and statistically significant at the 5% level, while the low-minus-high differential is positive but not statistically significant ($\beta = 0.032$, $t = 1.198$). The implied EPU slopes are −0.103 for the high long-term leverage group, −0.056 for the medium group, and −0.071 for the low group. All three implied slopes are individually significant at the 1% level. The medium-minus-high differential is significant at the 5% level ($p = 0.011$), whereas the low-minus-high ($p = 0.232$) and the low-minus-medium differential are not significant ($p = 0.501$). The joint test of slope equality across the three long-term leverage groups is rejected at the 5% level ($p = 0.038$).

The corresponding economic magnitudes for a one-standard-deviation EPU shock translate into approximate declines in the level of Tobin's Q of 6.4% for the high long-term leverage group, 3.5% for the medium group, and 4.4% for the low group. The high long-term leverage group therefore exhibits the most negative estimated EPU–valuation association of the three groups, and the medium-minus-high differential provides the clearest statistical evidence of slope variation in this specification. As with short-term leverage, however, the implied EPU slopes are not monotonic: the low group's slope is slightly more negative than that of the medium group, though the low-minus-medium contrast is not statistically significant. The structure in long-term leverage is therefore better characterised as a high-versus-rest divergence than as a strict low-to-high gradient.

5.4.4. Discussion

The empirical evidence provides partial and debt-maturity-dependent support for H3, which predicted that firms with lower financial leverage face an attenuated negative association between EPU and firm valuation.

Total Leverage

For total leverage, none of the three specifications yield statistically significant evidence of moderation. Specifically, the linear interaction is negative but insignificant ($\beta = -0.117$, $t = -1.499$), the quadratic interaction terms are not jointly significant in a Wald test ($p = 0.294$), and while the group decomposition produces implied slopes that become monotonically more negative from the low to the high leverage group, the pairwise differentials are all statistically insignificant, and the joint test of slope equality cannot be rejected ($p = 0.241$). One reason for this lack of significant moderation may stem from the aggregate nature of the total leverage metric, which pools short-term and long-term leverage. The component-level analysis below suggests that these components exhibit different moderation patterns. Moreover, the linear and quadratic specifications impose specific functional forms, which may lead to insignificant estimates if the underlying moderation effects do not align with these imposed structures. Together, these findings further motivate the maturity decomposition discussed below.

Short-Term Leverage

The short-term leverage decomposition is most consistent with a low-versus-rest pattern: the low leverage group displays a significantly less negative estimated EPU slope than the medium- and high-leverage group, while the latter are statistically indistinguishable from each other. Specifically, the implied EPU slope is −0.032 for the low short-term leverage group, compared with −0.087 and −0.081 for the medium and high groups, respectively. The low-minus-medium differential is statistically significant ($p = 0.007$), whereas the medium-minus-high differential is not ($p = 0.700$), and the joint test of slope equality across groups is rejected at the 5% level ($p = 0.025$). Substantively, firms in the lowest short-term leverage quartile stand apart from the rest of the sample, while further gradations among firms carrying more short-term debt seem to matter relatively little for EPU sensitivity. This interpretation is reinforced by the quadratic specification, which shows jointly significant interaction coefficients (Wald $p = 0.014$) and suggests that the marginal effect of additional short-term leverage on the EPU slope is largest at low levels of short-term leverage and diminishes as leverage rises. Our result is directionally consistent with Fahlenbrach et al. (2021), who document a negative linear association between short-term debt and stock returns during the initial COVID-19 market collapse.

From the short-term leverage perspective, the quantitative findings are partially in line with H3 and could be explained by the credit-cost and refinancing dynamics outlined in Section 3. There, we hypothesised that elevated EPU widens credit spreads and tightens lending conditions (Kaviani et al., 2020; Tran, 2021; Tran & Phan, 2021), so that firms forced to roll over debt face higher financing costs. Accordingly, one interpretation of our results could be that firms at the low end of the $Leverage_{\mathrm{ST}}$ distribution are more insulated from the refinancing-risk channel, as they have fewer short-term debt obligations that need to be rolled over under elevated EPU. Once a firm carries enough short-term debt for the refinancing risk to become economically material, the categorical exposure to refinancing risk during a shock is already in place, and incremental increases in $Leverage_{\mathrm{ST}}$ do not necessarily translate into proportionally greater EPU sensitivity.

As noted, our empirical design was not intended to identify the underlying mechanisms of this association or to verify these assumptions. The expert interviews, however, allowed us to contextualise our findings. For short-term leverage, equity analysts and financial managers both emphasised refinancing risk as the central concern in times of increased EPU. Equity analysts pointed to wider credit spreads and a general pullback in risk appetite, both of which would immediately tighten financing conditions for firms carrying short-term debt. Financial managers, in turn, emphasised the importance of staggering maturities so that a firm would never be forced to refinance a large share of its capital structure in an unfavourable market. One financial manager captured this concern:

> *"Ten years ago, when central banks were buying everything, we would have issued a new bond two months before maturity. Today, with much greater uncertainty and market windows that can close, we refinance six months ahead instead — to have two additional market windows as leeway." (Financial Manager #1)*

In sum, consistent with our theoretical interpretation of the results, the interviews suggest that short-term leverage matters for firm valuation primarily through exposure to refinancing risk itself, rather than the marginal size of that exposure, which aligns with the low-versus-rest pattern in our results.

Long-Term Leverage

The long-term leverage decomposition is most consistent with a high-versus-rest pattern: the high long-term leverage group exhibits a significantly more negative EPU slope than the medium group, whereas the low-minus-high and low-minus-medium differentials are not statistically significant at conventional levels. The high long-term leverage group further stands out with its implied slope magnitude of −0.103, compared with −0.056 and −0.071 for the medium and low group, respectively. The joint test of slope equality across groups is rejected at the 5% level (p = 0.038). Taken together, these results suggest that firms in the highest long-term leverage quartile display the most negative EPU sensitivity, while firms in the low and medium quartiles exhibit broadly comparable slopes. The quadratic specification offers partial corroboration: its interaction coefficients are jointly significant at the 5% level (Wald $p = 0.026$) and the point estimates trace a concave profile in which the EPU slope becomes progressively more negative at higher levels of long-term leverage. Two qualifications apply. First, the individual interaction coefficients in the quadratic specification only reach weak 10% significance, so while their joint significance in the Wald test points toward non-linearity, the precise functional form is less precisely estimated. Second, the linear specification yields a negative interaction coefficient that is weakly significant at the 10% level, indicating that a linear moderation pattern is also broadly compatible with the data. We nonetheless lean toward the non-linear characterisation, given the joint significance of the interaction terms of the quadratic specification and since the group decomposition locates most of the slope variation in the high-leverage tail. The non-linear reading is further reinforced through the robustness tests (Section 5.5). On the other hand, Fahlenbrach et al. (2021) document that higher long-term leverage was linearly associated with lower stock returns during the initial COVID-19 market collapse. However, qualifying this comparison, the Fahlenbrach et al. (2021) setting captures a crisis with both EPU and real-economy shocks rather than the ordinary EPU variation underlying our panel.

For long-term leverage, the quantitative findings are partially in line with H3, with a potential interpretation grounded in the mechanisms developed in Section 3. There, we argued that firms with lower leverage retain enough spare debt capacity to preserve ex-ante access to external financing under high EPU (DeAngelo et al., 2011; Fahlenbrach et al., 2021; Gamba & Triantis, 2008), so the marginal increase in expected distress costs from rising EPU should be limited for these firms. Conversely, for firms with high leverage, spare debt capacity is largely exhausted and distress risk is elevated, so an EPU shock might map into a larger valuation response through the amplified distress-cost channel (Gamba & Triantis, 2008) and the debt-overhang channel (Campello et al., 2010; Denis & McKeon, 2012; Myers, 1977). Accordingly, one interpretation of our results could be that the EPU sensitivity rises sharply only once a firm carries enough long-term debt for spare capacity to be substantially compromised, while gradations among less levered firms matter less. We also noted in Section 3 that very low leverage might lead to increased agency costs under EPU, since debt acts as a disciplining mechanism on managerial capital allocation (Jensen, 1986). The similarity between the low and medium long-term leverage groups may therefore reflect these offsetting considerations, with the protective role of spare debt capacity at the low end partly counterbalanced by the weakening of debt-based discipline.

As before, our empirical design cannot directly verify these channels, and we therefore draw on the interviews for further insights. For long-term leverage, the interviews emphasised the value of preserving debt capacity. Equity analysts especially described low long-term leverage as spare capacity that allows firms to pursue opportunistic acquisitions or counter-cyclical investment while more indebted peers must prioritise deleveraging, and financial managers emphasised the importance of defending an investment-grade rating in order to keep capital-market access open when credit conditions tighten. Both framings suggest that the market's valuation response becomes materially more adverse once spare debt capacity is perceived to be compromised, which is consistent with the high-versus-rest pattern observed in the long-term decomposition. One equity analyst described the logic as follows:

> *"The fundamentals and guidance of these companies have not changed in five years, but just the fact that you have high leverage in an environment where debt is no longer free changes the perception of risk. It squeezes cash flow, changes the ability to pay down debt if you get into trouble, and impacts the ability to use cash for anything other than deleveraging." (Equity Analyst #3)*

Interviewees further recognised limits on the benefit of low leverage: equity analysts noted that low leverage without a clear capital-allocation strategy is often interpreted as inefficiency, and financial managers characterised the relationship between leverage and the cost of capital as U-shaped, as excessive conservatism raises financing costs.

Together, the interviews are consistent with our literature-based interpretation, that long-term leverage's moderating role in the EPU–valuation association likely operates through spare debt capacity, distress risk, and debt-overhang considerations, while also helping explain why this association may weaken at lower long-term leverage levels.

Overall, the results suggest that H3 receives qualified support. Total leverage provides no statistically significant evidence of moderation, while the maturity-specific decomposition reveals patterns that are directionally consistent with H3 but non-linear in form. Short-term leverage exhibits a low-versus-rest pattern in which firms with very low short-term debt are less sensitive to EPU than the rest of the sample, whereas long-term leverage exhibits a high-versus-rest pattern in which firms in the highest long-term leverage quartile display the most negative EPU sensitivity. The interview evidence helps explain why these patterns may emerge, attributing the short-term effect to refinancing-risk exposure and the long-term pattern to distress-risk and debt-overhang concerns.

Considering the combined results of our leverage-moderation analysis, several statistical caveats qualify the strength of our conclusions. First, the evidence for H3 is specification- and component-dependent. The linear interaction reaches significance only for long-term leverage, and only at the weak 10% level. By contrast, the interaction terms of each quadratic specification are jointly significant for short-term leverage (Wald p = 0.014) and long-term leverage (Wald p = 0.026), but not for total leverage (Wald p = 0.294), so the quadratic evidence carries more of the statistical weight than the linear evidence in the maturity-specific specifications. The group-based evidence is, in turn, concentrated in individual pairwise contrasts: the low-versus-rest interpretation for short-term leverage rests on a single pairwise contrast reaching conventional significance, and the high-versus-rest interpretation for long-term leverage rests analogously on the medium-minus-high contrast, with the low-minus-high contrast directionally consistent but not significant. Furthermore, both non-linear approaches depend on specification choices. The quadratic models impose a functional form that may not fully capture the true shape of the moderation, while the group decomposition depends on the quartile grouping scheme and the chosen cutoffs. Notably, different functional forms or alternative grouping rules could shift the location and strength of the estimated non-linearity.

5.5. Robustness Tests

The findings for all three hypotheses are subjected to a battery of robustness tests, summarised symbolically in Table 6, with full coefficient results reported in Tables M.1 through M.13 in Appendix M. The width of tests reflects two design considerations. First, it follows the multi-dimensional robustness approach of Fütterer et al. (2026). Second, the H2 and H3 moderation findings are by construction specification-dependent, as the chosen functional form, the location of grouping cutoffs, and the underlying interpretation of the moderator each condition the estimated patterns. A broader test-battery is therefore needed to map the sensitivity of these patterns across plausible empirical-design choices. Additionally, Oster (2019) bounds and sample-stability tests on H1 are conducted.

Table 6. Core Robustness Test Overview

#	Robustness Test	H1	H2			H3		
			Linear	Quadratic	Group	Linear	Quadratic	Group
R1	Clustering by country-month	●	●	●	●	●	●	●
R2	Driscoll & Kraay (1998) SEs	●	●	●	●	●	●	●
R3	European EPU variable	●	●	●	●	●	●	●
R4	Dependent Variable -1/Q	●	●	●	●	●	●	●
R5	Dependent Variable ln(Q_2)	●	●	●	●	●	●	●
R6	Industry-Month Fixed Effects	●	●	●	●	●	●	●
R6A	Country-Month Fixed Effects	●	-	-	-	-	-	-
R7	Country and Industry EPU Slopes	-	●	●	●	●	●	●
R8	Joint Moderation	-	●	●	●	●	●	●
R9	Variable Centering	-	●	●	●	●	●	●
R10	Grouping (tercile-based)	-	-	-	●	-	-	●
R11	Grouping (quintile-based)	-	-	-	●	-	-	●

Notes: This table summarises the robustness tests applied to each main specification. Filled markers (●) indicate that a test is applied to the corresponding specification, dashes (-) indicate that it is not. A description of each robustness test is provided in Section 5.5, and full coefficient estimates are reported in Tables M.1 through M.13 in Appendix M.

Taken together, the robustness analyses indicate that the H1 association is statistically stable and tightly bounded against omitted-variable bias, though its estimated magnitude is sensitive to the inclusion of demanding industry-month fixed effects. The H2 and H3 moderation findings are specification dependent. The non-monotonic cash pattern receives suggestive support but is sensitive to alternative group boundary definitions (tercile and quintile schemes) and the EEPUI substitution. The low-versus-rest pattern for short-term leverage holds across most specifications but attenuates under coarser tercile groupings, EEPUI substitution, and alternative dependent-variable transformations. The high-versus-rest pattern for long-term leverage is supported across most quadratic and group-based tests but weakens under the $-1/Q$ dependent-variable transformation and coarser tercile groupings. The overall picture is one of a robustly negative EPU–valuation association moderated by financial flexibility in heterogeneous and non-uniform ways.

5.5.1. Hypothesis 1

The H1 results are subjected to six core robustness tests and additional hypothesis-specific diagnostics. R1 (one-way country-month clustering) and R2 (Driscoll-Kraay (1998) standard errors) address dependence on the clustering structure and on residual cross-sectional and serial correlation across panel units. R3 substitutes the aggregate EEPUI for the country-specific indices to address potential national measurement error. R4 replaces ln(Q) with the negative reciprocal transformation ($-1/Q$), whose rescaling means that R4 coefficient magnitudes are not directly comparable to the baseline. R5 reconstructs the dependent variable using the alternative Fütterer et al. (2026) definition ln(Q_2), which imposes additional data requirements and reduces the sample to 89,142 observations. R6 augments the baseline with industry-month fixed effects to address sector-specific monthly shocks correlated with EPU, and is best read as a conservative lower bound, since these shocks are themselves partly a function of EPU. Finally, R6A replaces the baseline fixed effects with country-month fixed effects, which mechanically absorb all variation in ln(*EPU*), and confirms that country-year fixed effects are the most granular country-time control compatible with identification of the EPU coefficient.

The baseline results showed a significant negative association between EPU and firm valuation. Across all six core specifications, the EPU coefficient retains its negative sign and significance at the 1% level (Table M.1). Point estimates span a wide range, from −0.015 under the demanding industry-month fixed-effects specification, which absorbs much of the EPU-correlated industry-time variation by construction, to −0.130 under the European composite index. Excluding the industry-month fixed effects specification, estimates fall in a narrower band of −0.050 to −0.130, with the baseline value (−0.071) near the midpoint. The sign and statistical significance of H1 are therefore stable across the full battery, while the magnitude is expectedly sensitive to the most demanding fixed-effect specification. Under specification R6A, as expected, no coefficient is reported because the country-month fixed effects completely absorb the variation in ln(*EPU*).

Furthermore, we assess the extent of unobserved confounding that would be required to overturn the H1 results (Appendix K). Following Oster (2019), we compute the bias-adjusted EPU coefficient under the assumption that selection on unobservables is proportional to selection on observables. Under the benchmark calibration of $\delta = 1$ and $R^2_{\max} = 1.3 \times R^2$ following Oster's recommendation, the bias-adjusted coefficient is −0.068, compared with the baseline −0.071. The implied identified set under proportional selection lies entirely within a narrow negative range and excludes zero. Moreover, the identified set would include zero only if selection on unobservables were 18.876 times as strong as selection on observables, a ratio well in excess of values typically observed in empirical applications (Oster, 2019, suggests $\delta = 1$ as a reasonable benchmark). Together, these bounds suggest that the H1 association is unlikely to be entirely attributable to omitted-variable bias of the proportional-selection form contemplated by Oster (2019).

Finally, we assess whether the H1 association is driven by any single country or by certain general crisis periods by re-estimating the baseline on six restricted samples, dropping each country individually as well as the 2008–2009 financial crisis and 2020–2021 COVID-19 period jointly (Appendix L). Throughout the tests, the coefficient on EPU remains negative and significant at the 1% level. Point estimates in the country-exclusion columns range from −0.063 to −0.079, and the coefficient reaches −0.058 when the two crisis windows are excluded. The latter result is particularly informative as it indicates that the H1 association is not merely driven by extreme crises.

5.5.2. Hypothesis 2

The H2 test battery reproduces the six core tests (R1 through R6) for each of the three cash-moderation specifications and adds four moderation-specific tests. R7 augments the baseline with industry- and country-specific EPU slopes, addressing the concern that cash holdings vary across countries and industries (Appendix F), which themselves differ in EPU sensitivity (Appendix H). Without these controls, the estimated cash moderation could reflect this heterogeneity rather than a genuine cash channel. R8 includes the cash and total-leverage interactions simultaneously, addressing the possibility that the two proxy for related dimensions of financial positioning, so that omitting one when estimating the other could bias the single-channel estimate. R9 applies grand-mean centering to the moderator and its powers, addressing the concern that the lower-order EPU coefficient is otherwise evaluated at zero cash holdings rather than at a representative point of the distribution. Because centering does not alter marginal effects or interaction coefficients in fixed-effect models, R9 functions as a re-parameterisation yielding a more interpretable lower-order coefficient rather than as an independent test of the underlying moderation. For the group-based specification, R10 (tercile-based grouping) and R11 (quintile-based grouping, the three middle quintiles collapsed) address the concern that the quartile-based scheme may itself drive the moderation pattern.

The baseline results for cash moderation point towards a non-linear moderation pattern with mixed statistical significance. The robustness tests do not fundamentally alter these findings. In the linear specification (Table M.2), the interaction coefficient remains insignificant in every column, reinforcing the baseline findings. In the quadratic specification (Table M.3), the quadratic interaction term remains negative in every column and retains at least 10% significance in eight of the nine, with the $-1/Q$ transformation as the exception. The linear interaction term retains its positive sign in every column but reaches at least 10% significance in only three of the nine (alternative clustering, Driscoll-Kraay standard errors, and the $-1/Q$ transformation). The corresponding joint Wald test, which does not reject the null in the baseline ($p = 0.123$), continues to fall short of 5% significance in most columns, though it rejects at the 1% level under alternative clustering and Driscoll-Kraay adjustments, where tighter standard errors carry the same point estimate across the significance threshold. The quadratic moderation pattern therefore remains best characterised as suggestive in shape, consistent with the baseline. In the group decomposition (Table M.4), the medium-minus-low cash differential remains positive in all 11 columns and retains 5% significance in eight of the nine baseline quartile-based specifications, with the EEPUI substitution as the only exception. Under the alternative tercile- and quintile-based grouping schemes, the differential attenuates and loses significance, indicating that the moderation pattern is sensitive to where the group cutoffs are drawn. The high-minus-low differential remains insignificant across most specifications, with exceptions only under alternative clustering and Driscoll-Kraay standard errors. The joint Wald test of slope equality, which rejects the null at the 10% level in the baseline (p = 0.078), is retained at 10% significance in seven of the 11 columns, with significance lost under the EEPUI substitution, the $\ln(Q_2)$ transformation, and both alternative grouping schemes, importantly reinforcing the sensitivity of the moderation result to group construction.

5.5.3. Hypothesis 3

The H3 battery applies the robustness tests to the leverage moderation specifications.

Total Leverage

The baseline evidence for total-leverage moderation is weak across all specifications, and the robustness tests do not alter this assessment. In the linear specification (Table M.5), the interaction term reaches significance only under alternative clustering and Driscoll-Kraay standard errors, and in the quadratic specification (Table M.6), both interaction terms remain insignificant in every column with the joint Wald test rejecting only under the same two adjustments. In the group decomposition (Table M.7), the medium-minus-high differential reaches at least 10% significance under alternative clustering, Driscoll-Kraay standard errors, industry-month fixed effects, and quintile grouping, while the low-minus-high differential is insignificant throughout except under alternative clustering and Driscoll-Kraay. The joint test of slope equality rejects at 10% in only three columns, including an isolated quintile-grouping result.

Short-Term Leverage

The baseline evidence for a short-term leverage moderation points toward a low-versus-rest pattern, and the robustness tests generally preserve this finding, while some qualifications apply. The interaction term of the linear specification remains insignificant in all nine columns (Table M.8), reinforcing the baseline findings. In the quadratic specification (Table M.9), the quadratic interaction term retains its positive sign and at least 10% significance in all nine columns, while the linear interaction term is supported in seven. The corresponding joint Wald test (baseline p = 0.014) is retained at 10% significance in seven of the nine columns, with the EEPUI substitution and the $\ln(Q_2)$ transformation as the exceptions. In the group decomposition (Table M.10), the low-minus-high differential remains positive in all 11 columns and retains 5% significance in six of the nine baseline quartile-based specifications, with significance not retained under the EEPUI substitution and dependent-variable-transformations. Under quintile grouping, the differential is preserved at 5% significance ($\beta = 0.056$), while under tercile grouping it attenuates ($\beta = 0.029$) and falls below conventional significance. The attenuation under terciles-based grouping is consistent with the interpretation that the moderation effect is concentrated in the lowest portion of the short-term leverage distribution, which the coarser tercile scheme dilutes. The medium-versus-high differential remains insignificant throughout, and the joint test of slope equality is retained at 10% significance in all columns except the EEPUI substitution and the $\ln(Q_2)$ transformation.

Long-Term Leverage

The baseline evidence for a long-term leverage moderation points toward a high-versus-rest pattern, with the linear specification providing a weakly significant alternative interpretation. The robustness tests reinforce the high-versus-rest reading and weaken the linear alternative. The interaction term in the linear specification (Table M.11) reaches 10% significance only under alternative clustering, Driscoll-Kraay standard errors, and grand-mean centering. The $-1/Q$ transformation yields a sign flip ($\beta = 0.084$) that is statistically insignificant and likely reflects the non-linear nature of the transformation, rather than evidence of actual positive moderation. Combined with the weak baseline significance, the linear long-term moderation should not be treated as a robust result. In the quadratic specification (Table M.12), the quadratic interaction term retains its negative sign in every column and reaches 10% significance in seven of the nine columns. The linear interaction term reaches 10% significance in only three of the nine columns (alternative clustering, Driscoll-Kraay standard errors, and the $-1/Q$ transformation), broadly mirroring its baseline insignificance. The corresponding joint Wald test (baseline $p = 0.026$) is retained at 10% significance in the same seven columns, with the EEPUI substitution and the $\ln(Q_2)$ transformation as the exceptions. The concavity documented in the baseline thus receives support across most robustness tests, even as the linear interaction term carries weaker support in isolation. In the group decomposition (Table M.13), the medium-minus-high differential remains positive in all 11 columns and retains 5% significance in nine, with the $-1/Q$ transformation and tercile grouping as the exceptions. Under quintile-based grouping, the differential is preserved at 1% significance ($\beta = 0.050$). The attenuation under terciles-based grouping is again consistent with the moderation being concentrated near the edges of the leverage distribution. The low-minus-high differential remains insignificant throughout, with exceptions only under alternative clustering and Driscoll-Kraay standard errors, and the joint test of slope equality is retained at 10% significance in eight of the 11 columns, with the EEPUI substitution, the $-1/Q$ transformation, and tercile grouping as the exceptions.

6. CONCLUSION

Against the backdrop of rising and volatile EPU across Europe, this thesis examined how EPU is associated with firm valuation and how this association is moderated by firms' financial flexibility. Prior research documents a negative association between EPU and firm valuation, while a separate strand of literature links cash holdings and leverage to firm value. Yet, the two strands have not been fully connected in a long-horizon European setting that is not restricted to a specific crisis window. We addressed this gap by testing three specific hypotheses on a panel of 104,197 firm-month observations from 799 listed firms in France, Germany, Italy, Spain, and the United Kingdom over the period 2005 to 2025. First, we tested for a negative EPU–valuation association (H1), then for an attenuating moderating role of higher cash holdings (H2), and finally for an attenuating role of lower financial leverage (H3). The quantitative results were complemented by interviews with equity analysts and financial managers, providing context on the channels through which EPU and financial flexibility shape valuation.

The results for H1 provide robust evidence of a significant negative association between EPU and firm valuation. This finding is in line with existing research on EPU and firm valuation, in particular Fütterer et al. (2026) for a comparable European setting, and broader U.S.-based evidence (Brogaard & Detzel, 2015; Jory et al., 2020). The expert interviews offered further contextualization: equity analysts and financial managers both described EPU as a relevant negative valuation driver and named discount-rate risk premia as the primary transmission channel.

Our findings for H2 provide partial support for a non-linear cash-moderation pattern. Cash holdings do not uniformly attenuate EPU sensitivity, but appear most protective at intermediate levels, with directional but statistically inconclusive evidence of weaker protection at high cash levels. While directionally consistent with Fahlenbrach et al. (2021), who document a linear relationship between cash and firm valuation during the initial COVID-19 collapse, our pattern differs in form, although this may reflect the distinct empirical setting. Our results are broadly consistent with general work showing that the value of cash is conditional and varies with financing constraints (Faulkender & Wang, 2006) and agency concerns (Dittmar & Mahrt-Smith, 2007). In our interviews, practitioners described cash as particularly valuable under elevated EPU when it covers operational needs, protects against financing disruptions, or preserves strategic optionality, but less valuable when balances exceed justified needs.

The evidence for H3 provides partial and maturity-dependent support for leverage-based moderation. The total leverage specifications yield no robust signs of moderation, likely due to the metric's aggregate nature. The maturity decomposition, however, reveals two distinct group-based patterns: a low-versus-rest pattern for short-term leverage, where firms with low short-term leverage display attenuated EPU sensitivity, and a high-versus-rest pattern for long-term leverage, where firms with high long-term leverage exhibit the most negative EPU sensitivity. Both findings are directionally consistent with Fahlenbrach et al. (2021), although our results again indicate non-linear rather than linear moderation. The interviews corroborated these distinctions and contextualised our findings. Practitioners described how, under elevated EPU, short-term leverage matters for firm valuation primarily through the existence of refinancing exposure rather than through its marginal size, while high long-term leverage becomes especially detrimental to firm valuation once spare debt capacity is strongly compromised.

The findings of this thesis advance the existing literature on EPU and firm valuation in three ways. First, the analysis shows that financial-flexibility-valuation patterns previously documented outside an EPU setting (e.g., DeAngelo & DeAngelo, 2007; Denis & Sibilkov, 2010; Marchica & Mura, 2010; Opler et al., 1999) extend to the EPU setting but operate non-uniformly across the cash and leverage distributions. While Fahlenbrach et al. (2021) document a linear mitigating role during the COVID-19 crisis, our long-horizon evidence indicates that the moderation is non-linear, with patterns differing across cash, short-term leverage, and long-term leverage. Second, the qualitative evidence from interviews with equity analysts and financial managers offers a perspective rarely incorporated in the EPU–valuation literature. This evidence documents the practical channels through which EPU exposure connects to valuation and helps explain features of the quantitative results on which the regression design is silent, such as why short-term leverage matters through threshold rather than marginal exposure and why the protective value of cash and unused debt capacity diminishes at extreme levels. Third, the empirical design sharpens the EPU–valuation evidence for European firms by applying country-specific EPU indices rather than an aggregate cross-country index used in prior European work (Fütterer et al., 2026). Furthermore, it extends the panel timeline compared to previous work and therefore includes multiple EPU peaks, spanning, for example, both the tariff-related 2025 EPU spikes and the 2008 financial crisis.

Beyond their academic contribution, our results carry several practical implications. For equity analysts, the central message is one of awareness: while some interviewees did not explicitly account for EPU in their valuations, the documented association is robust and economically meaningful, supporting the inclusion of EPU as a valuation factor through, for instance, a dedicated discount-rate premium. This adjustment should not be uniform, however, as EPU sensitivity varies with financial flexibility and, based on the interview evidence, may also differ by industry, firm size, and geographic diversification. For financial managers, the broader implication is that, as shown in the quantitative results, the moderating role of financial flexibility in the EPU–valuation association does not scale linearly with cash holdings or leverage levels. The interview evidence instead points to a non-uniform moderation pattern shaped by immediate refinancing risks for short-term leverage, debt capacity considerations for long-term leverage as well as precautionary motives and agency costs for cash. Financial flexibility in times of EPU should therefore be carefully calibrated to a firm's specific operating, financing, and refinancing needs rather than pursued in absolute terms.

Several limitations regarding identification, measurement, and external validity qualify the strength of these claims. On the identification side, the research design is observational. The strategy relies on within-firm, within-country-year variation in EPU and cannot establish a causal relationship between EPU and firm valuation. Although the fixed-effect structure absorbs a wide range of confounders, the possibility of omitted time-varying firm-level variables correlated with both EPU exposure and valuation cannot be ruled out. The monthly observation frequency captures short-run fluctuations but cannot speak to the effects of persistent structural shifts in the policy environment. On the measurement side, the EPU index, while well-established, is constructed from newspaper coverage and may therefore reflect media attention to EPU rather than EPU itself, introducing potential measurement error in the regressor of interest. Relatedly, country-specific indices reflect EPU as covered in domestic media, which may include both domestically originating policy events and internationally originating events that receive domestic press attention. The non-linear moderation results carry their own measurement-related caveats. The quadratic models impose a particular functional form, and the group-based decompositions depend on the chosen quartile classification, so alternative specifications could shift the form and strength of the estimated non-linearities. On the external-validity side, the conclusions apply to listed firms in five Western European economies observed over a single sample period and should not be generalised automatically to other countries or periods. Taken together, these limitations imply that the thesis should be read as documenting specific, conditional associations rather than generally applicable causal mechanisms.

Our findings open several avenues for future investigation. First, the research design does not decompose the EPU–valuation association into its discount-rate and cash-flow components. Building on Campbell's (1991) variance decomposition framework, future studies could employ structural models or instrumental-variable strategies to identify the relative contributions of these two channels. Second, the non-linear cash-moderation pattern raises the question of whether corporate governance quality conditions the location of the turning point. Dittmar and Mahrt-Smith (2007) and Pinkowitz et al. (2006) show that governance substantially affects the market valuation of cash, and it is plausible that well-governed firms can sustain higher cash levels before agency concerns dominate. Third, given that the maturity decomposition meaningfully differentiates the leverage moderation in our results, future research could examine whether other structural dimensions, such as the share of secured versus unsecured borrowing (Benmelech et al., 2024) or the prevalence of floating- versus fixed-rate obligations, produce similarly differentiated EPU sensitivities. Finally, extending the analysis to institutional environments with weaker investor protection, less liquid capital markets, or different ownership structures would test whether the documented patterns are specific to advanced Western European economies or generalise more broadly.

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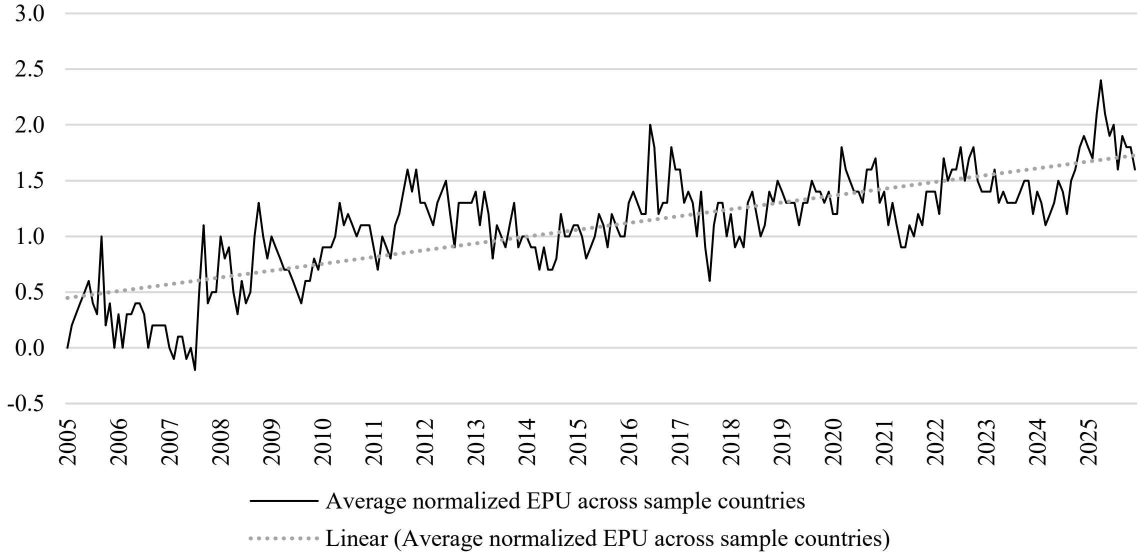
8. APPENDICES

Appendix A. Development of Economic Policy Uncertainty

Figure A.1. Development of the Baker et al. (2016) EPU Index From 2005 to 2025



Notes: This figure illustrates the development of the Baker et al. (2016) EPU index for France, Germany, Italy, Spain, and the United Kingdom between January 2005 and December 2025, plotted as the monthly average of the natural logarithm of the normalised country-level EPU indices across the five sample countries, including the dotted trendline. Data sourced from www.policyuncertainty.com.

Appendix B. Interview Methodology

Sampling and Interviewee Selection

Participants were selected using purposive criterion sampling (Patton, 1990) because the qualitative strand required respondents with direct professional involvement in the phenomena under study. Specifically, the sample comprised firm-side financial decision-makers and market-side equity analysts, as these groups are positioned to offer complementary perspectives on how EPU and financial flexibility shape both firm valuation and corporate decision-making. On the firm side, we sector-agnostically targeted financial managers like CFOs, finance directors, or treasurers with direct involvement in capital structure, liquidity, or investment decisions and sufficient tenure to reflect on different episodes of EPU. On the market side, eligible participants were equity analysts and institutional investors with active coverage of European non-financial firms and direct responsibility for valuation or investment decisions. The final sample comprises five firm-side and three market-side respondents (Table B.1). As the qualitative component was intended to complement the main analysis by providing contextual and interpretive insight, interviewee recruitment was guided by the concept of information power (Malterud et al., 2016) rather than by a fixed target sample size.

Table B.1. Overview of Interview Partners

Interviewee	#	Date	Description
Equity Analyst	1	23-03-2026	Senior equity analyst covering mid-cap companies
Equity Analyst	2	24-03-2026	Senior equity analyst and institutional investor covering small-cap companies
Equity Analyst	3	10-04-2026	Senior equity analyst covering large-cap companies
Financial Manager	1	31-03-2026	Senior finance manager at a multinational life sciences company
Financial Manager	2	08-04-2026	Senior finance manager at a multinational business technology company
Financial Manager	3	08-04-2026	Senior finance manager at a multinational industrial technology company
Financial Manager	4	09-04-2026	Senior finance manager at a multinational semiconductor company
Financial Manager	5	09-04-2026	Senior finance manager at a multinational consumer goods company

Notes: This table provides an overview of the semi-structured expert interviews conducted in support of the empirical analysis. Interviewees are anonymised and grouped by professional role. Dates reported in DD-MM-YYYY format.

Interview Design and Data Collection

Two role-specific interview guides were developed, derived deductively from the theoretical framework and quantitative analysis and sharing a common thematic core on how EPU is perceived, monitored, and incorporated into decision-making. The firm-side guide additionally addressed how EPU shapes financial flexibility decisions and the strategic and organisational considerations behind them, while the market-side guide focused on how EPU affects equity valuations and the role of financial flexibility in that process. Questions were open-ended "how" and "why" prompts to encourage respondents to share their reasoning and practical experience rather than confirm predetermined assumptions (Qu & Dumay, 2011), and each interview closed with an open invitation for additional points. Each guide was pilot-tested with one relevant profile and refined accordingly. Prior to each interview, participants were informed of the study’s purpose, the voluntary nature of participation, and the confidential handling of the material. Interviews were conducted via video call, lasted approximately 45 minutes, and were held in German or English depending on the interviewee's native language. They were transcribed in real time using Microsoft Teams' built-in Copilot transcription tool, except in two cases for which only written notes were taken. No audio was retained. Transcripts were reviewed, anonymised, and prepared for analysis immediately after each session. Both authors attended, with one leading the discussion and the other acting as an active listener, asking follow-up questions and taking manual notes (Eisenhardt, 1989; Qu & Dumay, 2011) – in one case the interview was conducted by a single interviewer.

Qualitative Data Analysis

The interview material was analysed using thematic analysis (Braun & Clarke, 2006). This approach enables the systematic identification of recurring patterns across respondents' accounts while retaining sensitivity to differences in perspective between the two respondent groups. Initial codes were derived from the theoretical framework and the study's research focus, for instance, "spare debt capacity" or "cash as precautionary buffer". Both authors coded the transcripts manually. To ensure consistency, the first interviews were coded independently by each author and then compared in a joint session to align on the interpretation of key concepts and the boundaries between emerging themes. The remaining transcripts were coded iteratively, with regular discussion between the authors until a shared thematic structure was established.

Integration with Quantitative Findings

The qualitative strand is integrated with the quantitative analysis in an explanatory and contextualising manner. Specifically, the interviews are used to interpret and elaborate on the regression results concerning the association between EPU, firm valuation, and the moderating role of financial flexibility. This is particularly relevant because the theoretical framework suggests that several mechanisms may operate simultaneously, especially with respect to financial flexibility, making it difficult to fully disentangle their relative importance through quantitative analysis alone. Rather than serving as a second form of hypothesis testing, the interview evidence is used to assess whether the patterns identified in the panel analysis are consistent with how EPU, liquidity, financial leverage, and valuation are perceived and managed in practice by both firm- and market-side actors.

Limitations of Qualitative Strand

The qualitative findings may be affected by access constraints associated with interviewing senior professionals, which can limit the breadth of perspectives included in the sample. In addition, respondents' accounts may be influenced by retrospective rationalisation and social-desirability bias. Finally, because the interviews were conducted after the quantitative analysis, the interpretation of the material was partly shaped by the authors' prior knowledge of the regression results.

Appendix C. Sample Construction

Table C.1. Illustration of the Stepwise Sample Construction Process

Procedure	# Firms	# Observations
Market capitalisation > 0 (01.01.2005 - 31.12.2025)	130,913	n.a.
Firm-level screening criteria (drop if)		
Primary listed security type is not common / ordinary equity	-5,650	n.a.
Headquarters / primary locations outside FR, DE, IT, ES, or UK	-110,774	n.a.
Company type is not public or private	-6,763	n.a.
Financial firms (SIC codes 6000-6999)	-1,110	n.a.
Utility firms (SIC codes 4900-4999)	-246	n.a.
Subtotal after firm-level screening	**6,370**	**1,605,240**
Observation-level screening criteria (drop if)		
Market capitalisation ≤ 0	0	-483
Total assets ≤ 0	0	-1,971
Total equity ≤ 0	-13	-139,064
Sales ≤ 0	0	-8,956
Leverage > 1	0	-416
Net income / total assets < -1	-5	-29,780
Year-on-year asset growth ratio > 2	-871	-485,760
≥ 60 months of consecutive data	-4,682	-834,613
Final sample	**799**	**104,197**

Notes: This table reports the sample selection procedure for the core regression panel. Data is sourced from S&P Capital IQ throughout. The initial universe consists of all firms with positive market capitalisation at any point during the sample period. Firm-level screens are applied at the firm level and remove firms that do not satisfy the stated criterion at any point in the sample period. Observation-level screens are applied at the firm-month level and remove individual observations failing the criterion. Screens are applied sequentially in the order listed, and counts in each row reflect the incremental effect conditional on the preceding screens. Detailed variable and screen descriptions can be found in Section 4.

Appendix D. Variable Construction

Table D.1. Detailed Variable Construction and Measurement Frequency

Variables	Measurement	Frequency
Firm Value Proxies		
Tobin's Q	Sum of the market value of equity and book value of total debt divided by the sum of total debt and total book value of equity	Monthly
ln(Q)	Logarithm of Tobin's Q	Monthly
Economic Policy Uncertainty		
ln(EPU)	Logarithm of the standardised monthly country-specific EPU index of France, Germany, Italy, Spain, and the United Kingdom	Monthly
ln(EEPUI)	Logarithm of the standardised monthly European EPU Index by Baker et al. (2016)	Monthly
Financial Flexibility Proxies		
Cash	Cash and cash equivalents divided by the book value of total assets	Yearly
$\text{Leverage}_{\text{Tot}}$	Total debt divided by the book value of total assets	Yearly
$\text{Leverage}_{\text{ST}}$	Current debt divided by the book value of total assets	Yearly
$\text{Leverage}_{\text{LT}}$	Non-current debt divided by the book value of total assets	Yearly
Control Variables		
Size	Logarithm of the book value of total assets	Yearly
Profitability	Earnings before interest, taxes, depreciation, and amortisation divided by the book value of total assets	Yearly
Tangibility	Net property, plant, and equipment divided by the book value of total assets	Yearly
CapEx	CapEx divided by the book value of total assets	Yearly
R&D	R&D expenses divided by the book value of total assets	Yearly
Dividends	Dummy variable equal to one if the firm paid common or preferred stock dividends in the previous fiscal year, zero otherwise	Yearly
Age	Log-transformed difference between the current year and the founding year, with zero values set to one before transformation	Yearly
Sales Growth	Logarithm of the ratio of current sales to sales 12 months earlier	Yearly
GDP per Capita	Logarithm of quarterly and seasonally adjusted GDP per capita from OECD	Quarterly
GDP Growth	GDP growth rate from OECD	Quarterly
Exchange Rate Change	Relative quarter-over-quarter change in the domestic currency against the U.S. dollar	Quarterly

Notes: This table defines the variables used in the empirical analysis and reports their measurement frequency. All ratios are based on book values of accounting items unless stated otherwise. Detailed reasoning for variable choices can be found in Section 4.

Appendix E. Pesaran CD Test

Table E.1. Pesaran (2004) Cross-Sectional Dependence Test on Baseline Residuals

Variable	**Value**
CD Statistic	128.638
p-value	0.000
Observations	104,197

Notes: This table reports the Pesaran (2004) CD test for cross-sectional dependence in the residuals from the H1 baseline specification (1.1). The test statistic is distributed standard normal under the null hypothesis of cross-sectional independence. Rejection of the null indicates the presence of contemporaneous correlation across panel units, which motivates the use of two-way clustering at the firm and calendar-month level in the main specifications. The test is implemented in Stata via the xtcd2 command.

Appendix F. Cash and Leverage Distribution

Table F.1. Distribution by Country

Country	**Cash**		**Leverage$_{Tot}$**		**Leverage$_{ST}$**		**Leverage$_{LT}$**		
	Mean	*Median*	*Mean*	*Median*	*Mean*	*Median*	*Mean*	*Median*	*Obs.*
France	0.155	0.114	0.228	0.224	0.070	0.052	0.156	0.143	20,523
Germany	0.120	0.092	0.212	0.195	0.062	0.042	0.150	0.129	31,579
Italy	0.126	0.108	0.278	0.270	0.107	0.087	0.169	0.160	7,829
Spain	0.089	0.064	0.293	0.277	0.102	0.080	0.190	0.167	7,693
United Kingdom	0.119	0.081	0.198	0.189	0.047	0.026	0.150	0.135	36,573
Total	0.125	0.091	0.221	0.209	0.065	0.044	0.156	0.139	104,197

Notes: This table reports country-level descriptive statistics (mean, median, and number of observations) for the main moderating variables over the full sample period. Variables and sample construction are defined in Section 4. The final sample comprises 104,197 firm-month observations across the five sample countries.

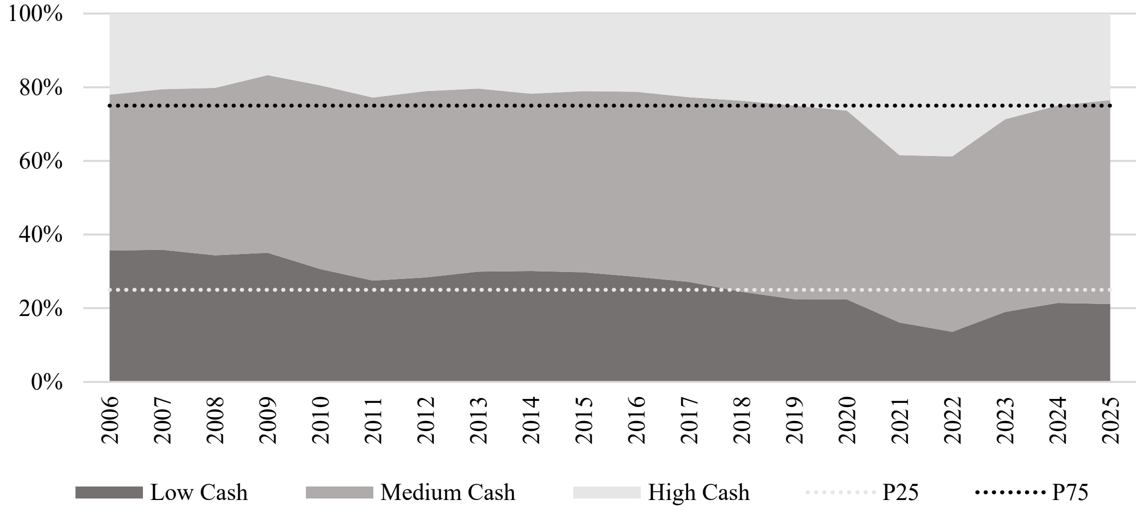
Table F.2. Distribution by Industry

Industry	**Cash**		**Leverage$_{Tot}$**		**Leverage$_{ST}$**		**Leverage$_{LT}$**		
	Mean	*Median*	*Mean*	*Median*	*Mean*	*Median*	*Mean*	*Median*	*Obs.*
Business Equipment	0.159	0.130	0.186	0.167	0.057	0.034	0.129	0.106	26,164
Chemicals and Allied Products	0.081	0.057	0.236	0.239	0.065	0.050	0.170	0.171	7,467
Consumer Durables	0.109	0.092	0.279	0.263	0.103	0.078	0.171	0.157	6,096
Consumer Nondurables	0.083	0.058	0.252	0.244	0.080	0.058	0.170	0.150	7,946
Healthcare, Medical Equipment and Drugs	0.159	0.103	0.211	0.184	0.052	0.033	0.159	0.128	12,416
Manufacturing	0.109	0.087	0.220	0.217	0.066	0.047	0.153	0.145	29,189
Oil, Gas and Coal Extraction	0.115	0.090	0.197	0.202	0.053	0.037	0.142	0.147	2,345
Other	0.119	0.088	0.245	0.228	0.061	0.039	0.183	0.170	9,197
Telephone and Television Transmission	0.101	0.058	0.358	0.412	0.070	0.066	0.286	0.319	1,419
Wholesale and Retail	0.135	0.098	0.226	0.218	0.057	0.048	0.169	0.166	1,958
Total	0.125	0.091	0.221	0.209	0.065	0.044	0.156	0.139	104,197

Notes: This table reports firm-level descriptive statistics (mean, median, and number of observations) for the main moderating variables over the full sample period. Variables and sample construction are defined in Section 4. The final sample comprises 104,197 firm-month observations across the five sample countries. Industry definitions based on the Kenneth R. French 12 Industries framework (French, 2026) and firm-specific SIC codes obtained from CapitalIQ.

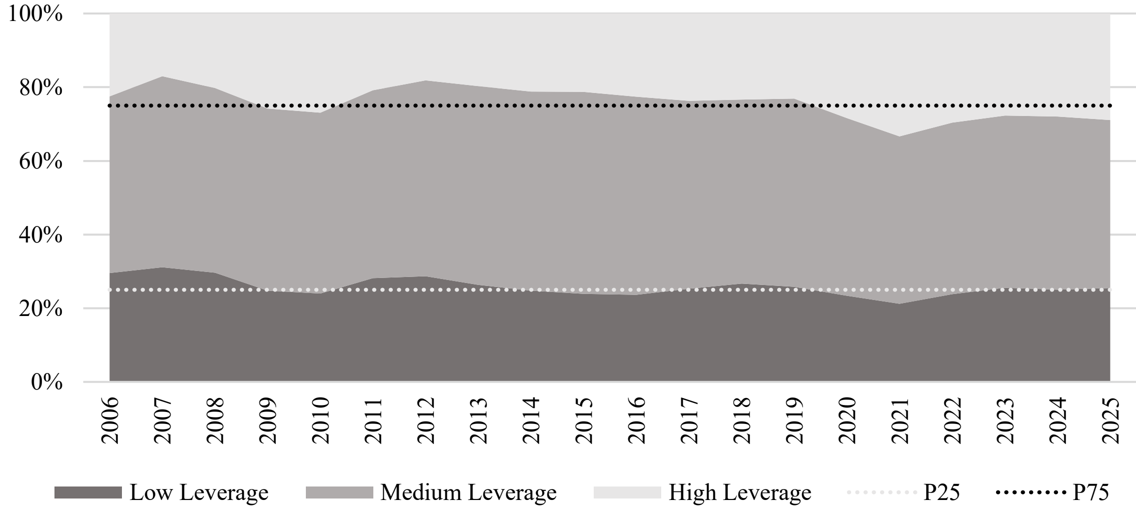
Appendix G. Distribution of Observations Across Cash and Leverage Groups Over Time

Figure G.1. Distribution of Observations by Cash Group



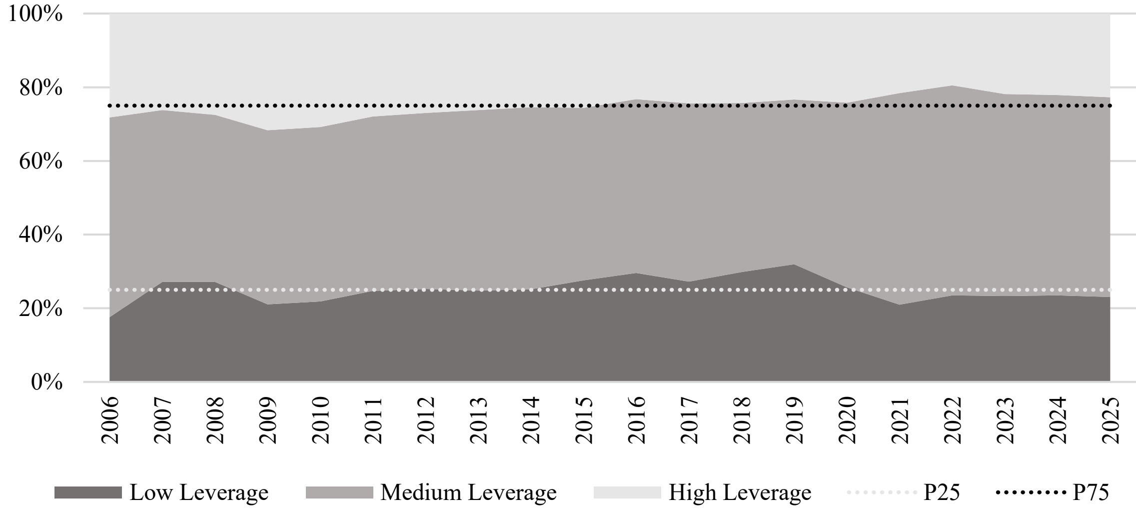
Notes: This figure plots the share of firm-month observations in each cash group by calendar year, based on the country × industry quartile construction described in Section 5.1. Quartile cutoffs are computed once from the full-sample distribution of the cash-to-total-assets ratio within each country × industry cell and held fixed across the panel period; group membership may therefore vary over time as a firm's cash ratio moves relative to its country × industry benchmark. The dotted reference lines mark the 25th and 75th percentiles of the cash distribution.

Figure G.2. Distribution of Observations by Total Leverage Group



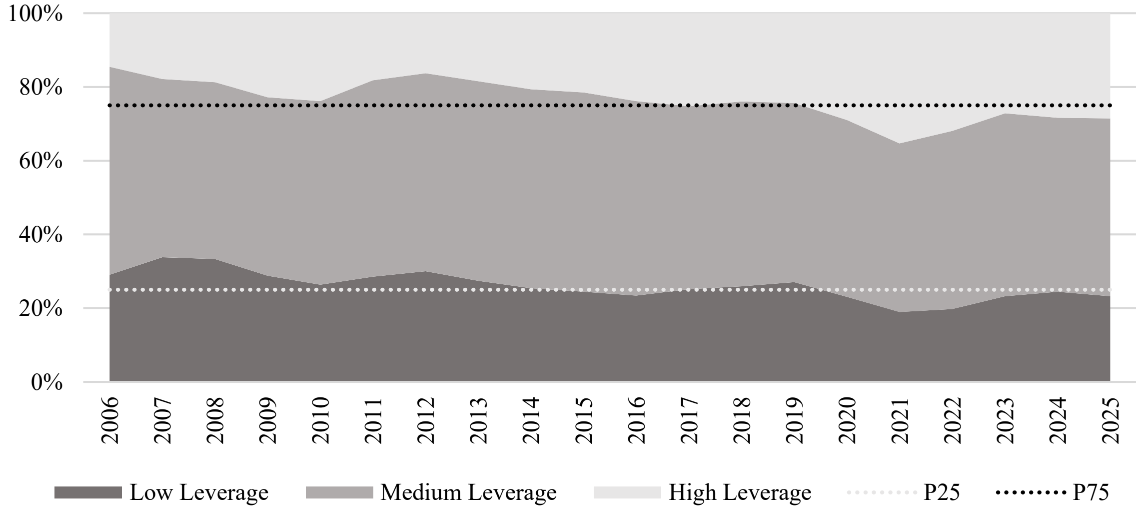
Notes: This figure plots the share of firm-month observations in each total leverage group by calendar year, based on the country × industry quartile construction described in Section 5.1. Quartile cutoffs are computed once from the full-sample distribution of the total-debt-to-total-assets ratio within each country × industry cell and held fixed across the panel period; group membership may therefore vary over time as a firm's leverage ratio moves relative to its country × industry benchmark. The dotted reference lines mark the 25th and 75th percentiles of the total leverage distribution.

Figure G.3. Distribution of Observations by Short-Term Leverage Group



Notes: This figure plots the share of firm-month observations in each short-term leverage group by calendar year, based on the country × industry quartile construction described in Section 5.1. Quartile cutoffs are computed once from the full-sample distribution of the current-debt-to-total-assets ratio within each country × industry cell and held fixed across the panel period; group membership may therefore vary over time as a firm's short-term leverage ratio moves relative to its country × industry benchmark. The dotted reference lines mark the 25th and 75th percentiles of the short-term leverage distribution.

Figure G.4. Distribution of Observations by Long-Term Leverage Group



Notes: This figure plots the share of firm-month observations in each long-term leverage group by calendar year, based on the country × industry quartile construction described in Section 5.1. Quartile cutoffs are computed once from the full-sample distribution of the non-current-debt-to-total-assets ratio within each country × industry cell and held fixed across the panel period; group membership may therefore vary over time as a firm's long-term leverage ratio moves relative to its country × industry benchmark. The dotted reference lines mark the 25th and 75th percentiles of the long-term leverage distribution.

Appendix H. Industry and Country Heterogeneity in EPU–Valuation Association

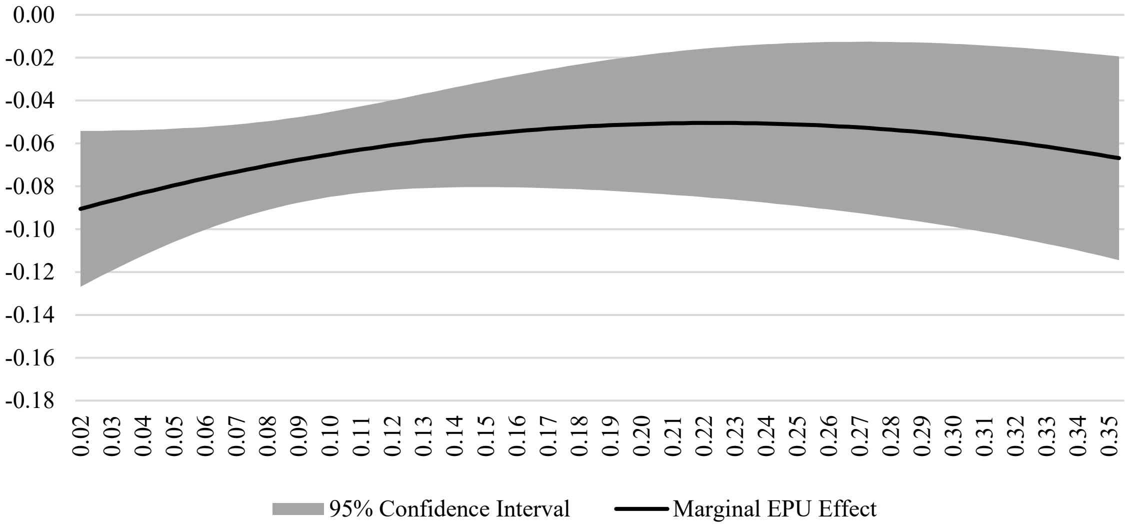
Table H.1. EPU Sensitivity by Industry and Country

Variable	Industry	Country	Joint Test
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.012	-0.045***	0.015
	(-0.519)	(-3.895)	(0.643)
ln(EPU) × Business Equipment			
ln(EPU) × Chemicals and Allied Products	-0.072		-0.071
	(-1.141)		(-1.129)
ln(EPU) × Consumer Durables	-0.162***		-0.161***
	(-3.300)		(-3.218)
ln(EPU) × Consumer Nondurables	-0.130***		-0.131***
	(-3.587)		(-3.621)
ln(EPU) × Healthcare, Medical Equipment and Drugs	-0.091**		-0.094**
	(-2.140)		(-2.176)
ln(EPU) × Manufacturing	-0.052		-0.051
	(-1.589)		(-1.543)
ln(EPU) × Oil, Gas and Coal Extraction	-0.029		-0.032
	(-0.417)		(-0.450)
ln(EPU) × Other	-0.058*		-0.058
	(-1.666)		(-1.635)
ln(EPU) × Telephone and Television Transmission	-0.027		-0.028
	(-0.461)		(-0.482)
ln(EPU) × Wholesale and Retail	-0.180**		-0.181**
	(-2.104)		(-2.115)
ln(EPU) × France			
ln(EPU) × Germany		-0.039***	-0.046***
		(-2.997)	(-2.863)
ln(EPU) × Italy		-0.062***	-0.039**
		(-4.477)	(-2.054)
ln(EPU) × Spain		-0.009	-0.000
		(-0.961)	(-0.028)
ln(EPU) × United Kingdom		-0.021	-0.024
		(-1.419)	(-1.432)
Calendar-Month FE	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Observations	104,197	104,197	104,197
R^2	0.749	0.748	0.749
R^2 (within)	0.132	0.128	0.132
p-value	0.000	0.000	0.000
p (Industry slopes equal)	0.140		0.136
p (Country slopes equal)		0.000	0.047

Notes: This table reports supplementary heterogeneity tests for the H1 baseline specification (1.1). The industry column augments the baseline with industry-specific EPU slopes, the Country column with country-specific EPU slopes, and the Joint Test column with both. Industries are classified following the French (2026) 12-industry scheme based on the work of Fama and French (1997), with the financial and utilities sectors excluded as described in Section 4. Business Equipment is the omitted industry reference and France the omitted country reference, so reported coefficients capture each group's EPU-slope differential relative to the corresponding reference. The ln(EPU) row reports the slope for the omitted reference category. The implied EPU slope for any non-reference group is recovered by adding its differential to the reference slope. Control variables and sample as described in Sections 4 and 5; control coefficients are suppressed for readability and remain qualitatively unchanged from the baseline. Joint F-tests of slope equality across the industry and country interaction terms are reported with their p-values; the null is that all group-specific slopes are equal. *t*-statistics, in parentheses, are based on standard errors two-way clustered at the firm and year-month level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

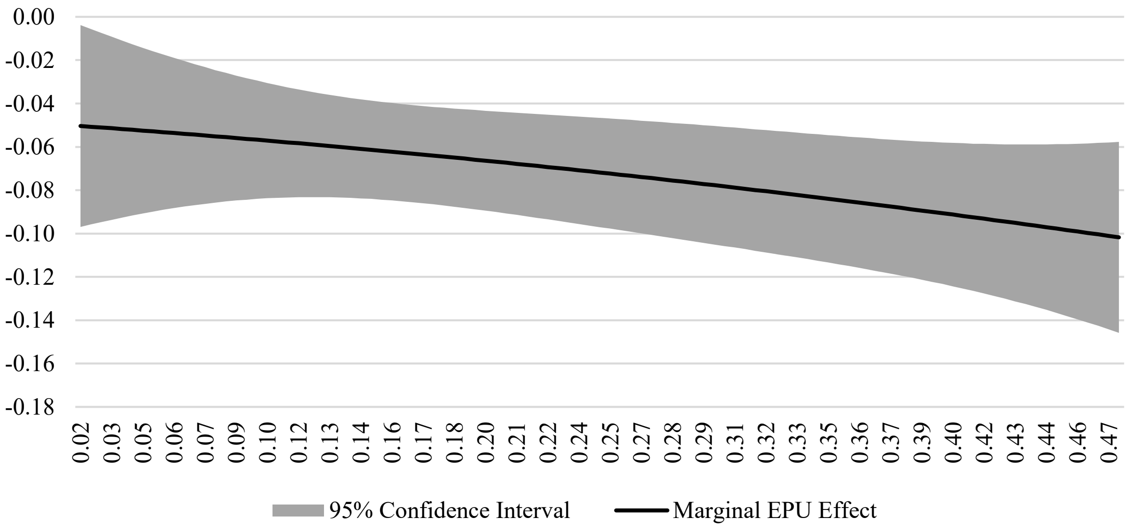
Appendix I. Quadratic Moderation Slopes

Figure I.1. Quadratic Moderation Analysis Breakdown – Implied Cash Slope



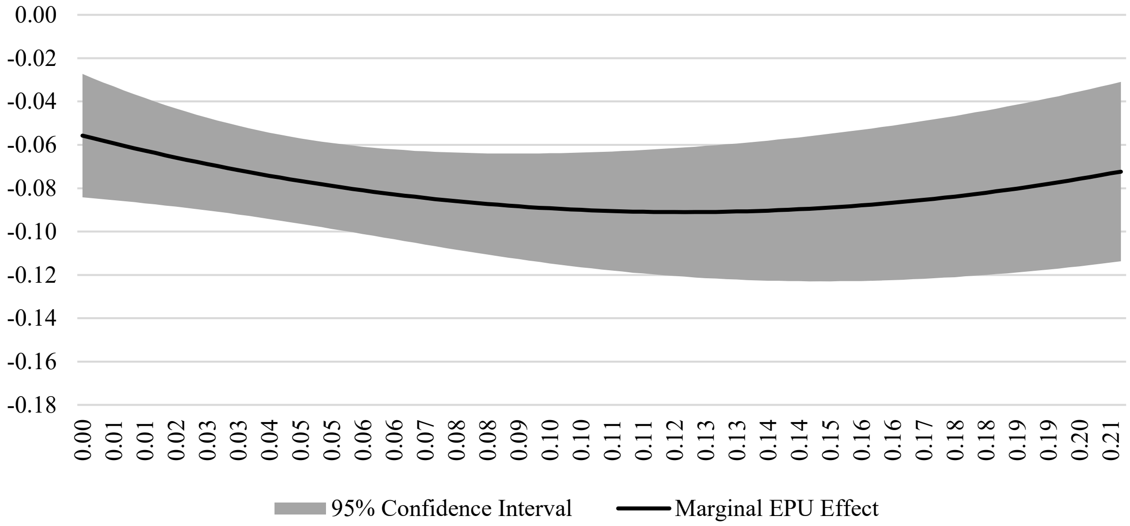
Notes: This figure plots the implied marginal effect of ln(*EPU*) on ln(*Q*) as a function of the cash-to-total-assets ratio, based on specification (2.2) reported in Table 4. The solid line shows the point estimate, computed as $\beta_1 + 2 \times \beta_5 \times$ Cash, where β_1 is the coefficient on ln(*EPU*) × *Cash* and β_5 is the coefficient on ln(*EPU*) × $Cash^2$. The shaded area shows the corresponding 95% confidence interval, based on standard errors two-way clustered at the firm and year-month level. The horizontal axis spans the 5th to the 95th percentile of the cash-to-total-assets distribution.

Figure I.2. Quadratic Moderation Analysis Breakdown – Implied Total Leverage Slope



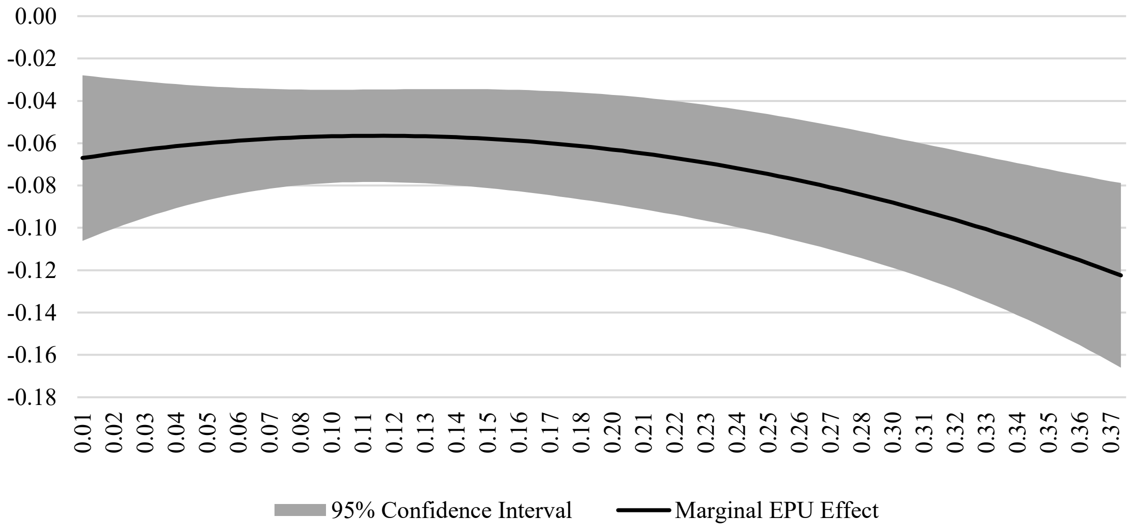
Notes: This figure plots the implied marginal effect of ln(*EPU*) on ln(*Q*) as a function of total leverage, based on specification (3.2.1) reported in Table 5. The solid line shows the point estimate, computed as $\beta_1 + 2 \times \beta_5 \times Leverage_{Tot}$, where β_1 is the coefficient on ln(*EPU*) × $Leverage_{Tot}$ and β_5 is the coefficient on ln(*EPU*) × $Leverage_{Tot}^2$. The shaded area shows the corresponding 95% confidence interval, based on standard errors two-way clustered at the firm and year-month level. The horizontal axis spans the 5th to the 95th percentile of the total leverage distribution.

Figure I.3. Quadratic Moderation Analysis Breakdown – Implied Short-Term Leverage Slope



Notes: This figure plots the implied marginal effect of ln(*EPU*) on ln(*Q*) as a function of short-term leverage, based on specification (3.2.2) reported in Table 5. The solid line shows the point estimate, computed as $\beta_1 + 2 \times \beta_5 \times Leverage_{\mathrm{ST}}$, where β_1 is the coefficient on ln(*EPU*) × $Leverage_{\mathrm{ST}}$ and β_5 is the coefficient on ln(*EPU*) × $Leverage_{\mathrm{ST}}^2$. The shaded area shows the corresponding 95% confidence interval, based on standard errors two-way clustered at the firm and year-month level. The horizontal axis spans the 5th to the 95th percentile of the short-term leverage distribution.

Figure I.4. Quadratic Moderation Analysis Breakdown – Implied Long-Term Leverage Slope



Notes: This figure plots the implied marginal effect of ln(*EPU*) on ln(*Q*) as a function of long-term leverage, based on specification (3.2.3) reported in Table 5. The solid line shows the point estimate, computed as $\beta_1 + 2 \times \beta_5 \times Leverage_{\mathrm{LT}}$, where β_1 is the coefficient on ln(*EPU*) × $Leverage_{\mathrm{LT}}$ and β_5 is the coefficient on ln(*EPU*) × $Leverage_{\mathrm{LT}}^2$. The shaded area shows the corresponding 95% confidence interval, based on standard errors two-way clustered at the firm and year-month level. The horizontal axis spans the 5th to the 95th percentile of the long-term leverage distribution.

Appendix J. Marginal EPU Effects by Group

Table J.1. Group-Specific Marginal EPU Effects and Slope-Equality Tests

Variable	**(2.3)**	**(3.3.1)**	**(3.3.2)**	**(3.3.3)**
Moderation Variable	*Cash*	$Leverage_{Tot}$	$Leverage_{ST}$	$Leverage_{LT}$
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
Low	-0.095***	-0.054***	-0.032*	-0.071***
	(-5.683)	(-2.616)	(-1.834)	(-3.655)
Medium	-0.057***	-0.068***	-0.087***	-0.056***
	(-4.663)	(-5.253)	(-7.154)	(-4.440)
High	-0.073***	-0.096***	-0.081***	-0.103***
	(-3.684)	(-5.414)	(-5.104)	(-5.880)
$p\ (\beta_{low} = \beta_{medium})$	0.023	0.573	0.007	0.501
$p\ (\beta_{medium} = \beta_{high})$	0.462	0.131	0.700	0.011
$p\ (\beta_{low} = \beta_{high})$	0.421	0.150	0.037	0.232
$p\ (\beta_{low} = \beta_{medium} = \beta_{high})$	0.078	0.241	0.025	0.038
Calendar-Month FE	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Observations	104,197	104,197	104,197	104,197
R^2	0.748	0.748	0.749	0.748
R^2 (within)	0.129	0.129	0.131	0.129
p-value	0.000	0.000	0.000	0.000

Notes: This table reports the implied marginal effect of ln(*EPU*) on ln(*Q*) for each financial-flexibility group, derived from the group-based specifications reported in Tables 4 and 5. The results in this table are based on the specifications indicated in the first table-row. For each specification, slopes are computed by combining the coefficient on ln(*EPU*) with the corresponding group interaction differential. The lower panel reports pairwise and joint Wald tests of slope equality across groups; p-values denote the probability that the corresponding restrictions hold under the null hypothesis. Each specification estimates separate group-specific slopes within a single regression; the underlying coefficients, control variables, and fixed-effects structure are reported in the source tables. *t*-statistics, in parentheses, are based on standard errors two-way clustered at the firm and year-month level. Full coefficient results can be found in Sections 5.3 and 5.4. Variable definitions and sample derivation in Section 4. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Appendix K. Oster (2019) Bounds Analysis

Table K.1. Oster Bounds Analysis for the Hypothesis 1 Baseline Specification (1.1)

Metric	**(1) Uncontrolled**	**(2) Controlled**
Coefficient on ln(*EPU*)	-0.080	-0.071
Standard Error		0.004
R^2	0.003	0.126
R^2_{Max} (assumed)		0.164
Bias-adjusted coefficient at $\delta = 1$		-0.068
δ for bias-adjusted coefficient = 0		18.876

Notes: This table reports Oster (2019) bounds for the baseline association (1.1) between ln(*EPU*) and ln(*Q*) from H1. The bounds assess the sensitivity of the ln(*EPU*) coefficient to selection on unobservables under the assumption that selection on observables is informative about selection on unobservables. R^2_{max} is set to 1.3 times the R^2 of the controlled model, following Oster's (2019) recommended upper bound. The reported δ indicates the magnitude of selection on unobservables relative to selection on observables that would be required to attenuate the coefficient to zero. The bias-adjusted coefficient is computed under the proportional-selection benchmark of $\delta = 1$.

Appendix L. Sample Stability Tests

Table L.1. Sample Stability – Country and Crisis-Window Exclusions

Variable	**Drop FR**	**Drop DE**	**Drop IT**	**Drop ES**	**Drop UK**	**Drop Crises**
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
EPU	-0.079***	-0.063***	-0.068***	-0.072***	-0.072***	-0.058***
	(-7.515)	(-6.355)	(-6.837)	(-7.054)	(-7.168)	(-6.569)
Size	-0.253***	-0.302***	-0.267***	-0.255***	-0.168***	-0.260***
	(-6.646)	(-7.825)	(-7.688)	(-7.454)	(-4.066)	(-7.655)
Profitability	1.718***	1.420***	1.528***	1.597***	1.551***	1.579***
	(8.767)	(8.457)	(8.930)	(9.084)	(6.754)	(8.983)
$Leverage_{Tot}$	-0.009	0.060	-0.067	0.041	-0.128	-0.012
	(-0.080)	(0.525)	(-0.631)	(0.381)	(-0.991)	(-0.110)
Cash	0.362**	0.425***	0.382***	0.394***	0.304*	0.396***
	(2.500)	(3.422)	(2.941)	(3.054)	(1.902)	(3.052)
Tangibility	-0.252***	-0.156**	-0.211***	-0.228***	-0.251**	-0.258***
	(-3.227)	(-2.025)	(-2.804)	(-3.012)	(-2.564)	(-3.522)
CapEx	1.045***	1.462***	1.284***	1.332***	1.269***	1.348***
	(3.672)	(4.727)	(4.798)	(4.662)	(3.505)	(4.713)
R&D	1.157**	0.809**	1.115***	1.097***	1.242***	0.956**
	(2.551)	(2.136)	(2.994)	(2.885)	(2.881)	(2.576)
Age	0.167*	0.107	0.160*	0.154	0.183	0.122
	(1.713)	(0.984)	(1.703)	(1.651)	(1.393)	(1.305)
Sales Growth	0.120***	0.121***	0.113***	0.106***	0.029	0.085**
	(3.418)	(3.644)	(3.583)	(3.192)	(0.722)	(2.580)
Dividends	0.075***	0.071***	0.082***	0.075***	0.077***	0.083***
	(3.484)	(3.401)	(3.875)	(3.647)	(3.381)	(4.268)
GDP Growth	0.004***	0.004***	0.005***	0.005***	0.007***	0.042***
	(2.852)	(3.026)	(3.312)	(3.154)	(3.766)	(5.550)
GDP per Capita	-0.211	-0.337	-0.373	-0.362	-0.536**	1.835***
	(-0.842)	(-1.395)	(-1.479)	(-1.312)	(-1.988)	(2.619)
Exchange Rate Change	0.718***	0.707***	0.707***	0.725***	0.658***	0.443***
	(6.929)	(7.374)	(7.132)	(7.017)	(5.994)	(5.657)
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	83,674	72,618	96,368	96,504	67,624	82,120
R^2	0.753	0.759	0.737	0.745	0.752	0.758
R^2 (within)	0.139	0.133	0.131	0.128	0.111	0.133
p-value	0.000	0.000	0.000	0.000	0.000	0.000

Notes: This table reports sample-stability tests for the H1 baseline specification (1.1). Each column re-estimates the baseline on a restricted sample. Columns (1) through (5) drop one country at a time (France, Germany, Italy, Spain, and the United Kingdom, respectively) to assess whether the EPU–valuation association is driven by any single country. Column (6) drops observations from the years 2008 and 2009 to proxy for the global financial crisis, and observations from the years 2020 and 2021 to proxy for the core COVID-19 crisis period jointly to assess whether the result is driven by these extreme uncertainty and general crisis episodes. Variables and sample derivation are defined in Section 4, and the baseline specification is described in Section 5.1. All specifications retain firm, country-year, and calendar-month fixed effects and the full set of baseline controls. *t*-statistics, in parentheses, are based on standard errors two-way clustered at the firm and year-month level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Appendix M. Robustness Tests

The following tables report the full set of robustness tests applied to the H1, H2, and H3 specifications, summarised in Table 6. R1 replaces the baseline clustering at the firm and year-month level with country-year-month level clustering. R2 estimates Driscoll and Kraay (1998) standard errors (no F-based p-value; joint significance assessed via Wald chi^2). R3 substitutes the European aggregate EPU index for the country-specific Baker et al. (2016) indices. R4 replaces ln(Q) with the negative reciprocal transformation ($-1/Q$). R5 substitutes the alternative Tobin's Q construction (ln(Q_2)) used in Fütterer et al. (2026). R6 augments the baseline with industry-month fixed effects (no F-based p-value; F not defined). R6A (H1 only) replaces previous fixed effects with country-month fixed effects. R7 augments the baseline with industry- and country-specific EPU slopes. R8 jointly includes both the cash and total-leverage interactions in a single regression. R9 applies grand-mean centering to the moderating variable and its powers. R10 replaces the quartile-based grouping with tercile-based grouping. R11 replaces the quartile-based grouping with quintile-based grouping, with the three middle quintiles forming the medium group. Variable definitions are provided in Section 4. Further details on the robustness tests in Section 5.5.

Table M.1. Robustness Tests – EPU and Valuation Association Linear Specification (H1)

Variable	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R6A**
Robustness Test	*Clustering*	*Driscoll-Kraay*	*EPU Var.*	*Dep. Var.*	*Dep. Var.*	*Add. FE*	*Add. FE*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*-1/Q*	*ln(Q_2)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.071***	-0.071***	-0.130***	-0.050***	-0.053***	-0.015***	
	(-8.961)	(-6.448)	(-6.455)	(-6.644)	(-6.947)	(-14.064)	
Leverage	-0.014	-0.014	-0.016	0.394***	0.065	-0.047	-0.026
	(-0.751)	(-0.436)	(-0.152)	(2.765)	(0.791)	(-0.466)	(-0.252)
Cash	0.380***	0.380***	0.379***	0.127	0.323***	0.335***	0.349***
	(18.567)	(8.133)	(3.053)	(0.373)	(3.183)	(2.772)	(2.818)
EPU Variable	ln(EPU)	ln(EPU)	ln(EEPUI)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)
Clustering	Country-Month	None	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	No
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	No
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year-Month FE	No	No	No	No	No	Yes	No
Country-Month FE	No	No	No	No	No	No	Yes
Observations	104,197	104,197	104,197	104,197	89,142	104,170	104,189
R^2	0.748	0.233	0.748	0.840	0.792	0.766	0.756
R^2 (within)	0.128	0.233	0.129	0.046	0.155	0.128	0.126
p-value	0.000		0.000	0.000	0.000		0.000

Notes: This table reports robustness tests for the H1 baseline specification (1.1). Tests are defined in Section 5.5, variables and sample in Section 4. *t*-statistics based on standard errors clustered as indicated are reported in parentheses; under R2, *t*-statistics are based on Driscoll and Kraay (1998) standard errors with no clustering. Control variables are included as explained in Section 5.1; coefficients are qualitatively unchanged from the (1.1) baseline and are therefore suppressed from the table. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table M.2. Robustness Tests – Cash Moderation Linear Specification (H2)

Variable	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**
Robustness Test	*Clustering*	*Driscoll-Kraay*	*EPU Var.*	*Dep. Var.*	*Dep. Var.*	*Add. FE*	*Slopes*	*Joint Mod.*	*Centering*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*-1/Q*	*ln(Q_2)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.071***	-0.071***	-0.125***	-0.032	-0.051***	-0.014	0.023	0.050	-0.071***
	(-8.567)	(-5.678)	(-4.847)	(-0.916)	(-3.952)	(-1.186)	(0.751)	(1.406)	(-7.286)
Cash	0.378***	0.378***	0.436**	0.340**	0.345**	0.347**	0.451***	0.503***	0.380***
	(9.570)	(4.905)	(2.228)	(2.208)	(2.328)	(2.232)	(2.823)	(3.113)	(3.057)
ln(EPU) × Cash	0.001	0.001	-0.045	-0.148	-0.014	-0.008	-0.047	-0.083	0.001
	(0.054)	(0.029)	(-0.324)	(-0.503)	(-0.157)	(-0.083)	(-0.474)	(-0.832)	(0.013)
$Leverage_{Tot}$	-0.014	-0.014	-0.016	0.392***	0.064	-0.047	-0.018	0.132	-0.014
	(-0.749)	(-0.434)	(-0.152)	(2.806)	(0.786)	(-0.467)	(-0.182)	(0.915)	(-0.135)
ln(EPU) × $Leverage_{Tot}$								-0.103	
								(-1.259)	
EPU Variable	ln(EPU)	ln(EPU)	ln(EEPUI)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)
Clustering	Country-Month	None	Firm + Month	Firm + Month	Firm + Month	Firm + Month	Firm + Month	Firm + Month	Firm + Month
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year-Month FE	No	No	No	No	No	Yes	No	No	No
Industry & Country Slopes	No	No	No	No	No	No	Yes	Yes	No
Joint Moderation	No	No	No	No	No	No	No	Total Lev.	No
Centered Variables	No	No	No	No	No	No	No	No	Yes
Observations	104,197	104,197	104,197	104,197	89,142	104,170	104,197	104,197	104,197
R^2	0.748	0.233	0.748	0.840	0.792	0.766	0.756	0.748	0.748
R^2 (within)	0.128	0.233	0.129	0.046	0.155	0.128	0.126	0.128	0.128
p-value	0.000		0.000	0.000	0.000		0.000	0.000	0.000

Notes: This table reports robustness tests for the H2 linear interaction specification (2.1). Tests are defined in Section 5.5, variables and sample in Section 4. *t*-statistics based on standard errors clustered as indicated are reported in parentheses; under R2, *t*-statistics are based on Driscoll and Kraay (1998) standard errors with no clustering. Control variables are included as explained in Section 5.1; coefficients are qualitatively unchanged from the (2.1) baseline and are therefore suppressed from the table. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table M.3. Robustness Tests – Cash Moderation Quadratic Specification (H2)

Variable	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**
Robustness Test	*Clustering*	Driscoll-Kraay	*EPU Var.*	*Dep. Var.*	*Dep. Var.*	*Add. FE*	*Slopes*	*Joint Mod.*	*Centering*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*-1/Q*	*ln(Q_2)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.097***	-0.097***	-0.158***	-0.078***	-0.071***	-0.039*	-0.003	0.014	-0.059***
	(-10.837)	(-6.571)	(-5.024)	(-4.226)	(-4.287)	(-1.968)	(-0.078)	(0.311)	(-5.264)
Cash	0.202*	0.202	0.192	0.025	0.074	0.190	0.366	0.339	0.579***
	(1.884)	(0.963)	(0.415)	(0.076)	(0.214)	(0.488)	(0.911)	(0.860)	(4.017)
ln(EPU) × Cash	0.425***	0.425***	0.493	0.602*	0.330	0.402	0.319	0.304	0.182
	(6.556)	(3.443)	(1.506)	(1.665)	(1.634)	(1.564)	(1.204)	(1.149)	(1.250)
$Cash^2$	0.466*	0.466	0.589	0.829	0.767	0.416	0.240	0.281	-0.930*
	(1.955)	(1.099)	(0.598)	(0.985)	(0.889)	(0.513)	(0.291)	(0.345)	(-1.833)
ln(EPU) × $Cash^2$	-0.973***	-0.973***	-1.216*	-1.722	-0.882*	-0.937*	-0.830*	-0.860*	-0.973**
	(-6.869)	(-3.939)	(-1.772)	(-1.265)	(-1.871)	(-1.925)	(-1.673)	(-1.729)	(-2.003)
$Leverage_{Tot}$	-0.021	-0.021	-0.023	0.380***	0.062	-0.054	-0.025	-0.686*	-0.021
	(-1.114)	(-0.644)	(-0.227)	(2.843)	(0.761)	(-0.531)	(-0.247)	(-1.764)	(-0.201)
ln(EPU) × $Leverage_{Tot}$								-0.050	
								(-0.216)	
$Leverage_{Tot}^2$								1.548**	
								(2.418)	
ln(EPU) × $Leverage_{Tot}^2$								-0.088	
								(-0.228)	
EPU Variable	ln(EPU)	ln(EPU)	ln(EEPUI)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)
Clustering	Country-Month	None	Firm + Month	Firm + Month	Firm + Month	Firm + Month	Firm + Month	Firm + Month	Firm + Month
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year-Month FE	No	No	No	No	No	Yes	No	No	No
Industry & Country Slopes	No	No	No	No	No	No	Yes	Yes	No
Joint Moderation	No	No	No	No	No	No	No	Total Lev.	No
Centered Variables	No	No	No	No	No	No	No	No	Yes
Observations	104,197	104,197	104,197	104,197	89,142	104,170	104,197	104,197	104,197
R^2	0.749	0.235	0.749	0.840	0.793	0.767	0.750	0.751	0.749
R^2 (within)	0.130	0.235	0.131	0.050	0.156	0.129	0.134	0.137	0.130
p-value	0.000		0.000	0.000	0.000		0.000	0.000	0.000
p ($\beta_{\text{linear interaction}} = \beta_{\text{quadratic interaction}} = 0$)	0.000	0.000	0.205	0.181	0.175	0.130	0.145	0.098	0.123

Notes: This table reports robustness tests for the H2 quadratic interaction specification (2.2). Tests are defined in Section 5.5, variables and sample in Section 4. *t*-statistics based on standard errors clustered as indicated are reported in parentheses; under R2, *t*-statistics are based on Driscoll and Kraay (1998) standard errors with no clustering. Control variables are included as explained in Section 5.1; coefficients are qualitatively unchanged from the (2.2) baseline and are therefore suppressed from the table. The lower panel reports the p-value from a joint Wald test of the null that the linear and quadratic interaction terms are jointly equal to zero. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table M.4. Robustness Tests – Cash Moderation Group-Based Specification (H2)

Variable	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**	**R10**	**R11**
Robustness Test	*Clustering*	*Driscoll-Kraay*	*EPU Var.*	*Dep. Var.*	*Dep. Var.*	*Add. FE*	*Slopes*	*Joint Mod.*	*Centering*	*Grouping*	*Grouping*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*-1/Q*	*$ln(Q_2)$*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.095***	-0.095***	-0.141***	-0.066***	-0.073***	-0.043***	-0.010	-0.032	-0.095***	-0.088***	-0.090***
	(-11.471)	(-7.445)	(-5.225)	(-4.439)	(-5.613)	(-3.156)	(-0.354)	(-1.050)	(-5.683)	(-5.864)	(-4.874)
ln(EPU) × Medium Cash	0.038***	0.038***	0.026	0.038**	0.029**	0.042**	0.041**	0.039**	0.038**	0.025	0.026
	(9.031)	(5.316)	(1.036)	(2.232)	(2.123)	(2.472)	(2.437)	(2.277)	(2.205)	(1.526)	(1.352)
ln(EPU) × High Cash	0.022***	0.022**	-0.008	-0.011	0.023	0.030	0.025	0.017	0.022	0.027	0.021
	(3.901)	(2.081)	(-0.211)	(-0.316)	(1.119)	(1.111)	(0.923)	(0.616)	(0.806)	(1.223)	(0.678)
Leverage$_{Tot}$	-0.026	-0.026	-0.028	0.395**	0.056	-0.058	-0.031		-0.026	-0.030	-0.022
	(-1.435)	(-0.847)	(-0.278)	(2.483)	(0.684)	(-0.573)	(-0.303)		(-0.259)	(-0.289)	(-0.214)
ln(EPU) × Low Leverage$_{Tot}$								0.041			
								(1.411)			
ln(EPU) × Medium Leverage$_{Tot}$								0.028			
								(1.535)			
EPU Variable	ln(EPU)	ln(EPU)	ln(EEPUI)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)
Clustering	Country-Month	None	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year-Month FE	No	No	No	No	No	Yes	No	No	No	No	No
Industry & Country Slopes	No	No	No	No	No	No	Yes	Yes	No	No	No
Joint Moderation	No	No	No	No	No	No	No	Total Lev.	No	No	No
Centered Variables	No	No	No	No	No	No	No	No	Yes	No	No
Grouping Scheme Basis	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Terciles	Quintiles
Observations	104,197	104,197	104,197	104,197	89,142	104,170	104,197	104,197	104,197	104,197	104,197
R^2	0.749	0.234	0.749	0.840	0.793	0.767	0.750	0.751	0.749	0.748	0.749
R^2 (within)	0.130	0.234	0.131	0.050	0.156	0.129	0.134	0.137	0.130	0.127	0.130
p-value	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000
p ($\beta_{low} = \beta_{medium}$)	0.000	0.000	0.300	0.026	0.034	0.013	0.015	0.023	0.027	0.127	0.176
p ($\beta_{medium} = \beta_{high}$)	0.000	0.035	0.267	0.202	0.746	0.609	0.459	0.330	0.461	0.909	0.861
p ($\beta_{low} = \beta_{high}$)	0.000	0.037	0.833	0.752	0.263	0.267	0.356	0.538	0.420	0.221	0.498
p ($\beta_{low} = \beta_{medium} = \beta_{high}$)	0.000	0.000	0.374	0.079	0.105	0.045	0.045	0.054	0.078	0.287	0.400

Notes: This table reports robustness tests for the H2 group-based specification (2.3). Tests are defined in Section 5.5, variables and sample in Section 4. *t*-statistics based on standard errors clustered as indicated are reported in parentheses; under R2, *t*-statistics are based on Driscoll and Kraay (1998) standard errors with no clustering. Control variables are included as explained in Section 5.1; coefficients are qualitatively unchanged from the (2.3) baseline and are therefore suppressed from the table. High Leverage and Low Cash groups omitted as reference groups, as explained in Section 5. The lower panel reports pairwise and joint Wald tests of slope equality across the cash groups; p-values denote the probability that the corresponding restrictions hold under the null hypothesis.
*, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table M.5. Robustness Tests – Total Leverage Moderation Linear Specification (H3)

Variable	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**
Robustness Test	*Clustering*	*Driscoll-Kraay*	*EPU Var.*	*Dep. Var.*	*Dep. Var.*	*Add. FE*	*Slopes*	*Joint Mod.*	*Centering*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*-1/Q*	*ln(Q_2)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.045***	-0.045***	-0.103***	-0.066**	-0.036**	0.009	0.033	0.050	-0.071***
	(-4.515)	(-2.957)	(-3.255)	(-2.567)	(-2.390)	(0.514)	(1.183)	(1.406)	(-7.240)
$Leverage_{Tot}$	0.158***	0.158*	0.146	0.294**	0.176	0.108	0.109	0.132	-0.010
	(4.098)	(1.758)	(0.851)	(2.304)	(1.552)	(0.738)	(0.747)	(0.915)	(-0.102)
ln(EPU) × $Leverage_{Tot}$	-0.117***	-0.117**	-0.124	0.068	-0.075	-0.106	-0.086	-0.103	-0.117
	(-5.075)	(-2.317)	(-1.132)	(0.628)	(-1.302)	(-1.333)	(-1.066)	(-1.259)	(-1.499)
Cash	0.380***	0.380***	0.381***	0.127	0.323***	0.335***	0.384***	0.503***	0.380***
	(18.562)	(8.081)	(3.066)	(0.373)	(3.186)	(2.773)	(3.112)	(3.113)	(3.062)
ln(EPU) × Cash								-0.083	
								(-0.832)	
EPU Variable	ln(EPU)	ln(EPU)	ln(EEPUI)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)
Clustering	Country-Month	None	Firm + Month	Firm + Month	Firm + Month	Firm + Month	Firm + Month	Firm + Month	Firm + Month
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year-Month FE	No	No	No	No	No	Yes	No	No	No
Industry & Country Slopes	No	No	No	No	No	No	Yes	Yes	No
Joint Moderation	No	No	No	No	No	No	No	Cash	No
Centered Variables	No	No	No	No	No	No	No	No	Yes
Observations	104,197	104,197	104,197	104,197	89,142	104,170	104,197	104,197	104,197
R^2	0.748	0.233	0.748	0.840	0.792	0.766	0.749	0.749	0.748
R^2 (within)	0.128	0.233	0.129	0.046	0.155	0.128	0.132	0.132	0.128
p-value	0.000		0.000	0.000	0.000		0.000	0.000	0.000

Notes: This table reports robustness tests for the H3 total leverage linear specification (3.1.1). Tests are defined in Section 5.5, variables and sample in Section 4. *t*-statistics based on standard errors clustered as indicated are reported in parentheses; under R2, *t*-statistics are based on Driscoll and Kraay (1998) standard errors with no clustering. Control variables are included as explained in Section 5.1; coefficients are qualitatively unchanged from the (3.1.1) baseline and are therefore suppressed from the table. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table M.6. Robustness Tests – Total Leverage Moderation Quadratic Specification (H3)

Variable	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**
Robustness Test	*Clustering*	*Driscoll-Kraay*	*EPU Var.*	*Dep. Var.*	*Dep. Var.*	*Add. FE*	*Slopes*	*Joint Mod.*	*Centering*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*-1/Q*	*ln(Q_2)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.049***	-0.049***	-0.113***	-0.074**	-0.035	0.006	0.024	0.014	-0.069***
	(-4.550)	(-3.062)	(-2.709)	(-2.254)	(-1.644)	(0.241)	(0.744)	(0.311)	(-5.627)
$Leverage_{Tot}$	-0.658***	-0.658***	-0.841*	-0.018	-0.348	-0.716*	-0.729*	-0.686*	-0.119
	(-7.918)	(-4.344)	(-1.859)	(-0.049)	(-1.117)	(-1.869)	(-1.866)	(-1.764)	(-1.067)
ln(EPU) × $Leverage_{Tot}$	-0.073	-0.073	0.040	0.168	-0.092	-0.067	-0.010	-0.050	-0.109
	(-1.433)	(-0.833)	(0.135)	(0.700)	(-0.554)	(-0.310)	(-0.043)	(-0.216)	(-1.284)
$Leverage_{Tot}^2$	1.573***	1.573***	2.019***	0.607	0.998**	1.596**	1.618**	1.548**	1.455***
	(11.345)	(6.405)	(2.653)	(1.075)	(2.014)	(2.568)	(2.525)	(2.418)	(3.892)
ln(EPU) × $Leverage_{Tot}^2$	-0.082	-0.082	-0.395	-0.196	0.048	-0.073	-0.146	-0.088	-0.082
	(-0.972)	(-0.560)	(-0.778)	(-0.561)	(0.176)	(-0.201)	(-0.384)	(-0.228)	(-0.220)
Cash								0.339	
								(0.860)	
ln(EPU) × Cash								0.304	
								(1.149)	
$Cash^2$								0.281	
								(0.345)	
ln(EPU) × $Cash^2$								-0.860*	
								(-1.729)	
EPU Variable	ln(EPU)	ln(EPU)	ln(EEPUI)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)
Clustering	Country-Month	None	Firm + Month	Firm + Month	Firm + Month	Firm + Month	Firm + Month	Firm + Month	Firm + Month
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year-Month FE	No	No	No	No	No	Yes	No	No	No
Industry & Country Slopes	No	No	No	No	No	No	Yes	Yes	No
Joint Moderation	No	No	No	No	No	No	No	Cash	No
Centered Variables	No	No	No	No	No	No	No	No	Yes
Observations	104,197	104,197	104,197	104,197	89,142	104,170	104,197	104,197	104,197
R^2	0.749	0.236	0.750	0.840	0.793	0.767	0.750	0.751	0.749
R^2 (within)	0.132	0.236	0.133	0.046	0.158	0.132	0.135	0.137	0.132
p-value	0.000		0.000	0.000	0.000		0.000	0.000	0.000
p ($\beta_{\text{linear interaction}} = \beta_{\text{quadratic interaction}} = 0$)	0.000	0.060	0.189	0.771	0.480	0.354	0.466	0.464	0.294

Notes: This table reports robustness tests for the H3 total leverage quadratic specification (3.2.1). Tests are defined in Section 5.5, variables and sample in Section 4. *t*-statistics based on standard errors clustered as indicated are reported in parentheses; under R2, *t*-statistics are based on Driscoll and Kraay (1998) standard errors with no clustering. Control variables are included as explained in Section 5.1; coefficients are qualitatively unchanged from the (3.2.1) baseline and are therefore suppressed from the table. The lower panel reports the p-value from a joint Wald test of the null that the linear and quadratic interaction terms are jointly equal to zero. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table M.7. Robustness Tests – Total Leverage Moderation Group-Based Specification (H3)

Variable	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**	**R10**	**R11**
Robustness Test	*Clustering*	*Driscoll-Kraay*	*EPU Var.*	*Dep. Var.*	*Dep. Var.*	*Add. FE*	*Slopes*	*Joint Mod.*	*Centering*	*Grouping*	*Grouping*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*-1/Q*	*ln(Q_2)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.096***	-0.096***	-0.155***	-0.044**	-0.069***	-0.042***	-0.011	-0.032	-0.096***	-0.083***	-0.109***
	(-11.371)	(-7.048)	(-5.316)	(-2.312)	(-5.173)	(-2.860)	(-0.390)	(-1.050)	(-5.414)	(-5.105)	(-5.677)
ln(EPU) × Low Leverage$_{Tot}$	0.042***	0.042***	0.018	-0.018	0.026	0.047	0.042	0.041	0.042	0.028	0.048
	(6.011)	(3.112)	(0.463)	(-0.437)	(1.209)	(1.641)	(1.477)	(1.411)	(1.448)	(1.098)	(1.491)
ln(EPU) × Medium Leverage$_{Tot}$	0.028***	0.028***	0.040	-0.004	0.019	0.030*	0.030	0.028	0.028	0.008	0.048**
	(5.937)	(3.096)	(1.461)	(-0.225)	(1.340)	(1.659)	(1.632)	(1.535)	(1.515)	(0.424)	(2.405)
Cash	0.353***	0.353***	0.356***	0.106	0.298***	0.310**	0.358***		0.353***	0.363***	0.354***
	(16.845)	(7.435)	(2.852)	(0.314)	(2.923)	(2.571)	(2.898)		(2.837)	(2.915)	(2.856)
ln(EPU) × Medium Cash								0.039**			
								(2.277)			
ln(EPU) × High Cash								0.017			
								(0.616)			
EPU Variable	ln(EPU)	ln(EPU)	ln(EEPUI)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)
Clustering	Country-Month	None	Firm+ Month	Firm+ Month	Firm+ Month	Firm+ Month	Firm+ Month	Firm+ Month	Firm+ Month	Firm+ Month	Firm+ Month
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year-Month FE	No	No	No	No	No	Yes	No	No	No	No	No
Industry & Country Slopes	No	No	No	No	No	No	Yes	Yes	No	No	No
Joint Moderation	No	No	No	No	No	No	No	Cash	No	No	No
Centered Variables	No	No	No	No	No	No	No	No	Yes	No	No
Grouping Scheme Basis	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Terciles	Quintiles
Observations	104,197	104,197	104,197	104,197	89,142	104,170	104,197	104,197	104,197	104,197	104,197
R^2	0.748	0.234	0.749	0.839	0.793	0.767	0.750	0.750	0.748	0.748	0.748
R^2 (within)	0.129	0.234	0.130	0.044	0.155	0.129	0.133	0.135	0.129	0.128	0.129
p-value	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000
p ($\beta_{low} = \beta_{medium}$)	0.010	0.096	0.504	0.656	0.712	0.477	0.605	0.593	0.573	0.373	0.995
p ($\beta_{medium} = \beta_{high}$)	0.000	0.002	0.144	0.822	0.180	0.097	0.103	0.125	0.130	0.672	0.016
p ($\beta_{low} = \beta_{high}$)	0.000	0.002	0.643	0.662	0.227	0.101	0.140	0.158	0.148	0.272	0.136
p ($\beta_{low} = \beta_{medium} = \beta_{high}$)	0.000	0.005	0.309	0.903	0.337	0.171	0.204	0.241	0.239	0.540	0.054

Notes: This table reports robustness tests for the H3 total leverage group-based specification (3.3.1). Tests are defined in Section 5.5, variables and sample in Section 4. *t*-statistics based on standard errors clustered as indicated are reported in parentheses; under R2, *t*-statistics are based on Driscoll and Kraay (1998) standard errors with no clustering. Control variables are included as explained in Section 5.1; coefficients are qualitatively unchanged from the (3.3.1) baseline and are therefore suppressed from the table. High Leverage and Low Cash groups omitted as reference groups, as explained in Section 5. The lower panel reports pairwise and joint Wald tests of slope equality across the leverage groups; p-values denote the probability that the corresponding restrictions hold under the null hypothesis. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table M.8. Robustness Tests – Short-Term Leverage Moderation Linear Specification (H3)

Variable	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**
Robustness Test	*Clustering*	*Driscoll-Kraay*	*EPU Var.*	*Dep. Var.*	*Dep. Var.*	*Add. FE*	*Slopes*	*Joint Mod.*	*Centering*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*-1/Q*	*ln(Q_2)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.068***	-0.068***	-0.126***	-0.052***	-0.052***	-0.013	0.016	0.025	-0.071***
	(-8.121)	(-5.674)	(-5.381)	(-4.660)	(-5.319)	(-1.406)	(0.654)	(0.794)	(-7.300)
Leverage_{ST}	-0.062	-0.062	-0.025	0.287	0.060	-0.087	-0.105	-0.089	-0.116
	(-1.188)	(-0.529)	(-0.095)	(1.627)	(0.367)	(-0.404)	(-0.488)	(-0.418)	(-0.878)
ln(EPU) × Leverage_{ST}	-0.038	-0.038	-0.073	0.018	-0.009	-0.031	-0.008	-0.021	-0.038
	(-1.097)	(-0.495)	(-0.394)	(0.146)	(-0.094)	(-0.239)	(-0.064)	(-0.159)	(-0.285)
Cash	0.375***	0.375***	0.375***	0.123	0.322***	0.331***	0.379***	0.449***	0.375***
	(18.300)	(8.020)	(3.012)	(0.360)	(3.167)	(2.734)	(3.067)	(2.816)	(3.016)
ln(EPU) × Cash								-0.049	
								(-0.496)	
Leverage_{LT}	0.010	0.010	0.009	0.415***	0.063	-0.033	0.006	0.005	0.010
	(0.562)	(0.325)	(0.083)	(2.934)	(0.724)	(-0.310)	(0.055)	(0.048)	(0.095)
EPU Variable	ln(EPU)	ln(EPU)	ln(EEPUI)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)
Clustering	Country-Month	None	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year-Month FE	No	No	No	No	No	Yes	No	No	No
Industry & Country Slopes	No	No	No	No	No	No	Yes	Yes	No
Joint Moderation	No	No	No	No	No	No	No	Cash	No
Centered Variables	No	No	No	No	No	No	No	No	Yes
Observations	104,197	104,197	104,197	104,197	89,142	104,170	104,197	104,197	104,197
R^2	0.748	0.233	0.748	0.840	0.792	0.766	0.749	0.749	0.748
R^2 (within)	0.128	0.233	0.129	0.046	0.155	0.128	0.132	0.132	0.128
p-value	0.000		0.000	0.000	0.000		0.000	0.000	0.000

Notes: This table reports robustness tests for the H3 short-term leverage linear specification (3.1.2). Tests are defined in Section 5.5, variables and sample in Section 4. *t*-statistics based on standard errors clustered as indicated are reported in parentheses; under R2, *t*-statistics are based on Driscoll and Kraay (1998) standard errors with no clustering. Control variables are included as explained in Section 5.1; coefficients are qualitatively unchanged from the (3.1.2) baseline and are therefore suppressed from the table. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table M.9. Robustness Tests – Short-Term Leverage Moderation Quadratic Specification (H3)

Variable	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**
Robustness Test	*Clustering*	*Driscoll-Kraay*	*EPU Var.*	*Dep. Var.*	*Dep. Var.*	*Add. FE*	*Slopes*	*Joint Mod.*	*Centering*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*-1/Q*	*ln(Q_2)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.054***	-0.054***	-0.108***	-0.039***	-0.047***	0.002	0.026	0.008	-0.083***
	(-6.274)	(-4.481)	(-4.067)	(-3.562)	(-4.151)	(0.150)	(1.072)	(0.206)	(-7.819)
$Leverage_{ST}$	-0.177	-0.177	-0.065	0.288	-0.263	-0.237	-0.319	-0.306	-0.580***
	(-1.602)	(-0.955)	(-0.113)	(0.734)	(-0.750)	(-0.511)	(-0.689)	(-0.673)	(-3.129)
ln(EPU) × $Leverage_{ST}$	-0.604***	-0.604***	-0.751*	-0.477**	-0.250	-0.607**	-0.508*	-0.507*	-0.284
	(-8.523)	(-4.852)	(-1.810)	(-2.072)	(-1.139)	(-2.129)	(-1.757)	(-1.784)	(-1.535)
$Leverage_{ST}^2$	0.029	0.029	-0.184	-0.302	0.850	0.136	0.390	0.312	3.586***
	(0.085)	(0.057)	(-0.107)	(-0.271)	(0.870)	(0.108)	(0.309)	(0.250)	(4.952)
ln(EPU) × $Leverage_{ST}^2$	2.480***	2.480***	2.821**	2.132**	1.211*	2.537***	2.226**	2.263**	2.480***
	(10.269)	(6.583)	(2.075)	(2.586)	(1.682)	(2.893)	(2.505)	(2.577)	(2.813)
Cash	0.349***	0.349***	0.351***	0.102	0.303***	0.301**	0.352***	0.312	0.349***
	(16.877)	(7.528)	(2.825)	(0.298)	(2.973)	(2.494)	(2.852)	(0.785)	(2.803)
ln(EPU) × Cash								0.322	
								(1.231)	
$Cash^2$								0.305	
								(0.373)	
ln(EPU) × $Cash^2$								-0.847*	
								(-1.723)	
$Leverage_{LT}$	0.050***	0.050	0.053	0.445***	0.091	0.010	0.048	0.034	0.050
	(2.722)	(1.509)	(0.488)	(3.111)	(1.038)	(0.092)	(0.441)	(0.313)	(0.459)
EPU Variable	ln(EPU)	ln(EPU)	ln(EEPUI)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)
Clustering	Country-Month	None	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year-Month FE	No	No	No	No	No	Yes	No	No	No
Industry & Country Slopes	No	No	No	No	No	No	Yes	Yes	No
Joint Moderation	No	No	No	No	No	No	No	Cash	No
Centered Variables	No	No	No	No	No	No	No	No	Yes
Observations	104,197	104,197	104,197	104,197	89,142	104,170	104,197	104,197	104,197
R^2	0.749	0.236	0.749	0.840	0.793	0.767	0.750	0.751	0.749
R^2 (within)	0.131	0.236	0.132	0.047	0.158	0.132	0.135	0.137	0.131
p-value	0.000		0.000	0.000	0.000		0.000	0.000	0.000
p ($\beta_{\text{linear interaction}} = \beta_{\text{quadratic interaction}} = 0$)	0.000	0.000	0.117	0.036	0.168	0.008	0.022	0.017	0.014

Notes: This table reports robustness tests for the H3 short-term leverage quadratic specification (3.2.2). Tests are defined in Section 5.5, variables and sample in Section 4. *t*-statistics based on standard errors clustered as indicated are reported in parentheses; under R2, *t*-statistics are based on Driscoll and Kraay (1998) standard errors with no clustering. Control variables are included as explained in Section 5.1; coefficients are qualitatively unchanged from the (3.2.2) baseline and are therefore suppressed from the table. The lower panel reports the p-value from a joint Wald test of the null that the linear and quadratic interaction terms are jointly equal to zero. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table M.10. Robustness Tests – Short-Term Leverage Moderation Group-Based Specification (H3)

Variable	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**	**R10**	**R11**
Robustness Test	*Clustering*	*Driscoll-Kraay*	*EPU Var.*	*Dep. Var.*	*Dep. Var.*	*Add. FE*	*Slopes*	*Joint Mod.*	*Centering*	*Grouping*	*Grouping*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*-1/Q*	*ln(Q₂)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.081***	-0.081***	-0.152***	-0.050***	-0.059***	-0.030**	0.005	-0.017	-0.081***	-0.076***	-0.080***
	(-9.642)	(-6.662)	(-5.574)	(-3.375)	(-4.808)	(-2.361)	(0.165)	(-0.541)	(-5.104)	(-5.060)	(-4.764)
ln(EPU) × Low Leverage$_{ST}$	0.049***	0.049***	0.036	0.031	0.026	0.054**	0.050**	0.047**	0.049**	0.029	0.056**
	(8.185)	(3.830)	(1.080)	(1.623)	(1.498)	(2.331)	(2.164)	(2.096)	(2.097)	(1.400)	(2.272)
ln(EPU) × Medium Leverage$_{ST}$	-0.006	-0.006	0.023	-0.018	-0.000	0.001	-0.005	-0.007	-0.006	-0.016	-0.004
	(-1.529)	(-0.807)	(0.957)	(-0.907)	(-0.015)	(0.049)	(-0.291)	(-0.429)	(-0.389)	(-0.924)	(-0.231)
Cash	0.357***	0.357***	0.357***	0.107	0.309***	0.311**	0.361***		0.357***	0.355***	0.359***
	(17.390)	(7.735)	(2.871)	(0.309)	(3.033)	(2.586)	(2.932)		(2.882)	(2.867)	(2.899)
ln(EPU) × Medium Cash								0.040**			
								(2.384)			
ln(EPU) × High Cash								0.019			
								(0.724)			
Leverage$_{LT}$	0.029*	0.029	0.027	0.390***	0.061	-0.015	0.025	0.010	0.029	0.025	0.031
	(1.697)	(0.970)	(0.269)	(2.981)	(0.743)	(-0.146)	(0.247)	(0.095)	(0.282)	(0.244)	(0.297)
EPU Variable	ln(EPU)	ln(EPU)	ln(EEPUI)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)
Clustering	Country-Month	None	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year-Month FE	No	No	No	No	No	Yes	No	No	No	No	No
Industry & Country Slopes	No	No	No	No	No	No	Yes	Yes	No	No	No
Joint Moderation	No	No	No	No	No	No	No	Cash	No	No	No
Centered Variables	No	No	No	No	No	No	No	No	Yes	No	No
Grouping Scheme Basis	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Terciles	Quintiles
Observations	104,197	104,197	104,197	104,197	89,142	104,170	104,197	104,197	104,197	104,197	104,197
R^2	0.749	0.236	0.749	0.840	0.793	0.767	0.750	0.751	0.749	0.749	0.749
R^2 (within)	0.131	0.236	0.131	0.046	0.157	0.131	0.135	0.137	0.131	0.130	0.131
p-value	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000
p ($\beta_{low} = \beta_{medium}$)	0.000	0.000	0.630	0.025	0.079	0.008	0.007	0.007	0.006	0.026	0.003
p ($\beta_{medium} = \beta_{high}$)	0.126	0.420	0.339	0.364	0.988	0.961	0.771	0.668	0.697	0.355	0.818
p ($\beta_{low} = \beta_{high}$)	0.000	0.000	0.280	0.105	0.134	0.020	0.030	0.036	0.036	0.161	0.023
p ($\beta_{low} = \beta_{medium} = \beta_{high}$)	0.000	0.000	0.515	0.071	0.199	0.024	0.025	0.026	0.024	0.083	0.012

Notes: This table reports robustness tests for the H3 short-term leverage linear specification (3.3.2). Tests are defined in Section 5.5, variables and sample in Section 4. *t*-statistics based on standard errors clustered as indicated are reported in parentheses; under R2, *t*-statistics are based on Driscoll and Kraay (1998) standard errors with no clustering. Control variables are included as explained in Section 5.1; coefficients are qualitatively unchanged from the (3.3.2) baseline and are therefore suppressed from the table. High Leverage and Low Cash groups omitted as reference groups, as explained in Section 5. The lower panel reports pairwise and joint Wald tests of slope equality across the leverage groups; p-values denote the probability that the corresponding restrictions hold under the null hypothesis. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table M.11. Robustness Tests – Long-Term Leverage Moderation Linear Specification (H3)

Variable	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**
Robustness Test	*Clustering*	*Driscoll-Kraay*	*EPU Var.*	*Dep. Var.*	*Dep. Var.*	*Add. FE*	*Slopes*	*Joint Mod.*	*Centering*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*-1/Q*	*ln(Q_2)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.048***	-0.048***	-0.107***	-0.064***	-0.037***	0.007	0.031	0.046	-0.071***
	(-5.252)	(-3.721)	(-3.836)	(-3.210)	(-2.912)	(0.485)	(1.179)	(1.357)	(-7.265)
Leverage_{LT}	0.224***	0.224**	0.207	0.293**	0.207*	0.162	0.175	0.194	0.013
	(5.581)	(2.534)	(1.127)	(2.204)	(1.701)	(1.049)	(1.131)	(1.265)	(0.121)
ln(EPU) × Leverage_{LT}	-0.147***	-0.147***	-0.152	0.084	-0.097	-0.134	-0.116	-0.130	-0.147*
	(-5.891)	(-2.944)	(-1.255)	(0.729)	(-1.554)	(-1.575)	(-1.329)	(-1.483)	(-1.723)
Cash	0.374***	0.374***	0.376***	0.124	0.321***	0.329***	0.378***	0.488***	0.374***
	(18.180)	(7.949)	(3.022)	(0.363)	(3.164)	(2.728)	(3.063)	(3.047)	(3.011)
ln(EPU) × Cash								-0.077	
								(-0.778)	
Leverage_{ST}	-0.103***	-0.103**	-0.109	0.306*	0.054	-0.119	-0.108	-0.108	-0.103
	(-3.624)	(-2.104)	(-0.836)	(1.854)	(0.501)	(-0.935)	(-0.841)	(-0.841)	(-0.787)
EPU Variable	ln(EPU)	ln(EPU)	ln(EEPUI)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)
Clustering	Country-Month	None	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year-Month FE	No	No	No	No	No	Yes	No	No	No
Industry & Country Slopes	No	No	No	No	No	No	Yes	Yes	No
Joint Moderation	No	No	No	No	No	No	No	Cash	No
Centered Variables	No	No	No	No	No	No	No	No	Yes
Observations	104,197	104,197	104,197	104,197	89,142	104,170	104,197	104,197	104,197
R^2	0.748	0.233	0.749	0.840	0.792	0.766	0.749	0.749	0.748
R^2 (within)	0.128	0.233	0.130	0.046	0.155	0.128	0.132	0.132	0.128
p-value	0.000		0.000	0.000	0.000		0.000	0.000	0.000

Notes: This table reports robustness tests for the H3 long-term leverage linear specification (3.1.3). Tests are defined in Section 5.5, variables and sample in Section 4. *t*-statistics based on standard errors clustered as indicated are reported in parentheses; under R2, *t*-statistics are based on Driscoll and Kraay (1998) standard errors with no clustering. Control variables are included as explained in Section 5.1; coefficients are qualitatively unchanged from the (3.1.3) baseline and are therefore suppressed from the table. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table M.12. Robustness Tests – Long-Term Leverage Moderation Quadratic Specification (H3)

Variable	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**
Robustness Test	*Clustering*	*Driscoll-Kraay*	*EPU Var.*	*Dep. Var.*	*Dep. Var.*	*Add. FE*	*Slopes*	*Joint Mod.*	*Centering*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*-1/Q*	*ln(Q_2)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.068***	-0.068***	-0.122***	-0.094***	-0.045***	-0.013	0.007	-0.008	-0.058***
	(-7.049)	(-4.686)	(-3.549)	(-3.037)	(-2.754)	(-0.694)	(0.257)	(-0.187)	(-4.836)
Leverage_{LT}	-0.832***	-0.832***	-0.738	-0.415	-0.439	-0.871**	-0.904**	-0.886**	-0.111
	(-10.298)	(-5.114)	(-1.505)	(-1.059)	(-1.432)	(-2.263)	(-2.311)	(-2.274)	(-0.881)
ln(EPU) × Leverage_{LT}	0.210***	0.210*	0.148	0.597*	0.036	0.218	0.267	0.237	-0.082
	(3.703)	(1.888)	(0.453)	(1.781)	(0.216)	(0.964)	(1.157)	(1.010)	(-0.845)
Leverage_{LT}^2	2.693***	2.693***	2.483**	1.834**	1.619**	2.642***	2.760***	2.725***	1.346***
	(14.981)	(7.849)	(2.342)	(2.261)	(2.579)	(3.239)	(3.275)	(3.204)	(2.646)
ln(EPU) × Leverage_{LT}^2	-0.939***	-0.939***	-0.847	-1.322**	-0.347	-0.928*	-1.009*	-0.965*	-0.939*
	(-7.583)	(-4.034)	(-1.155)	(-2.115)	(-0.951)	(-1.841)	(-1.929)	(-1.786)	(-1.802)
Cash	0.351***	0.351***	0.352***	0.124	0.301***	0.308**	0.356***	0.326	0.351***
	(16.826)	(7.436)	(2.810)	(0.367)	(2.923)	(2.538)	(2.864)	(0.824)	(2.803)
ln(EPU) × Cash								0.295	
								(0.360)	
Cash^2								0.327	
								(1.251)	
ln(EPU) × Cash^2								-0.868*	
								(-1.767)	
Leverage_{ST}	-0.105***	-0.105**	-0.110	0.305*	0.048	-0.120	-0.111	-0.103	-0.105
	(-3.701)	(-2.103)	(-0.835)	(1.847)	(0.443)	(-0.937)	(-0.852)	(-0.788)	(-0.798)
EPU Variable	ln(EPU)	ln(EPU)	ln(EEPUI)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)
Clustering	Firm+Month	None	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month	Firm+Month
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year-Month FE	No	No	No	No	No	Yes	No	No	No
Industry & Country Slopes	No	No	No	No	No	No	Yes	Yes	No
Joint Moderation	No	No	No	No	No	No	No	Cash	No
Centered Variables	No	No	No	No	No	No	No	No	Yes
Observations	104,197	104,197	104,197	104,197	89,142	104,170	104,197	104,197	104,197
R^2	0.749	0.235	0.749	0.840	0.793	0.767	0.750	0.750	0.749
R^2 (within)	0.131	0.235	0.131	0.047	0.157	0.130	0.134	0.136	0.131
p-value	0.000		0.000	0.000	0.000		0.000	0.000	0.000
p ($\beta_{\text{linear interaction}} = \beta_{\text{quadratic interaction}} = 0$)	0.026	0.000	0.118	0.058	0.114	0.024	0.038	0.048	0.026

Notes: This table reports robustness tests for the H3 long-term leverage quadratic specification (3.2.3). Tests are defined in Section 5.5, variables and sample in Section 4. *t*-statistics based on standard errors clustered as indicated are reported in parentheses; under R2, *t*-statistics are based on Driscoll and Kraay (1998) standard errors with no clustering. Control variables are included as explained in Section 5.1; coefficients are qualitatively unchanged from the (3.2.3) baseline and are therefore suppressed from the table. The lower panel reports the p-value from a joint Wald test of the null that the linear and quadratic interaction terms are jointly equal to zero. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table M.13. Robustness Tests – Long-Term Leverage Moderation Group-Based Specification (H3)

Variable	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**	**R10**	**R11**
Robustness Test	*Clustering*	*Driscoll-Kraay*	*EPU Var.*	*Dep. Var.*	*Dep. Var.*	*Add. FE*	*Slopes*	*Joint Mod.*	*Centering*	*Grouping*	*Grouping*
Dependent Variable	*ln(Q)*	*ln(Q)*	*ln(Q)*	*-1/Q*	*ln(Q_2)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*	*ln(Q)*
ln(EPU)	-0.103***	-0.103***	-0.164***	-0.049***	-0.076***	-0.047***	-0.018	-0.041	-0.103***	-0.088***	-0.107***
	(-11.999)	(-7.798)	(-5.700)	(-2.934)	(-5.745)	(-3.303)	(-0.658)	(-1.365)	(-5.880)	(-5.546)	(-5.852)
ln(EPU) × Low Leverage$_{LT}$	0.032***	0.032**	0.028	-0.029	0.024	0.037	0.033	0.032	0.032	0.024	0.031
	(4.807)	(2.336)	(0.755)	(-0.797)	(1.151)	(1.382)	(1.220)	(1.188)	(1.198)	(1.005)	(1.100)
ln(EPU) × Medium Leverage$_{LT}$	0.047***	0.047***	0.052**	0.012	0.035**	0.046**	0.049***	0.048***	0.047**	0.028	0.050***
	(10.039)	(6.374)	(1.984)	(0.775)	(2.475)	(2.574)	(2.679)	(2.609)	(2.555)	(1.458)	(2.680)
Cash	0.360***	0.360***	0.362***	0.117	0.307***	0.318***	0.363***		0.360***	0.366***	0.358***
	(17.391)	(7.654)	(2.889)	(0.345)	(2.997)	(2.622)	(2.934)		(2.880)	(2.933)	(2.877)
ln(EPU) × Medium Cash								0.040**			
								(2.384)			
ln(EPU) × High Cash								0.023			
								(0.847)			
Leverage$_{ST}$	-0.124***	-0.124***	-0.129	0.252	0.021	-0.131	-0.127	-0.128	-0.124	-0.123	-0.112
	(-4.587)	(-2.680)	(-1.020)	(1.605)	(0.207)	(-1.073)	(-1.022)	(-1.033)	(-0.986)	(-0.984)	(-0.905)
EPU Variable	ln(EPU)	ln(EPU)	ln(EEPUI)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)	ln(EPU)
Clustering	Country-Month	None	Firm+ Month	Firm+ Month	Firm+ Month	Firm+ Month	Firm+ Month	Firm+ Month	Firm+ Month	Firm+ Month	Firm+ Month
Calendar-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year-Month FE	No	No	No	No	No	Yes	No	No	No	No	No
Industry & Country Slopes	No	No	No	No	No	No	Yes	Yes	No	No	No
Joint Moderation	No	No	No	No	No	No	No	Cash	No	No	No
Centered Variables	No	No	No	No	No	No	No	No	Yes	No	No
Grouping Scheme Basis	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Quartiles	Terciles	Quintiles
Observations	104,197	104,197	104,197	104,197	89,142	104,170	104,197	104,197	104,197	104,197	104,197
R^2	0.748	0.234	0.749	0.840	0.793	0.767	0.750	0.750	0.748	0.748	0.749
R^2 (within)	0.129	0.234	0.130	0.045	0.156	0.129	0.133	0.135	0.129	0.128	0.130
p-value	0.000		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000
p ($\beta_{low} = \beta_{medium}$)	0.006	0.134	0.423	0.163	0.530	0.674	0.467	0.478	0.500	0.842	0.384
p ($\beta_{medium} = \beta_{high}$)	0.000	0.000	0.047	0.439	0.013	0.010	0.007	0.009	0.011	0.145	0.007
p ($\beta_{low} = \beta_{high}$)	0.000	0.019	0.450	0.425	0.250	0.167	0.223	0.235	0.231	0.315	0.271
p ($\beta_{low} = \beta_{medium} = \beta_{high}$)	0.000	0.000	0.118	0.185	0.045	0.036	0.025	0.031	0.036	0.328	0.022

Notes: This table reports robustness tests for the H3 long-term leverage group-based specification (3.3.3). Tests are defined in Section 5.5, variables and sample in Section 4. *t*-statistics based on standard errors clustered as indicated are reported in parentheses; under R2, *t*-statistics are based on Driscoll and Kraay (1998) standard errors with no clustering. Control variables are included as explained in Section 5.1; coefficients are qualitatively unchanged from the (3.3.3) baseline and are therefore suppressed from the table. High Leverage and Low Cash groups omitted as reference groups, as explained in Section 5. The lower panel reports pairwise and joint Wald tests of slope equality across the leverage groups; p-values denote the probability that the corresponding restrictions hold under the null hypothesis. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

AI Usage Acknowledgement

AI tools were used in a supporting role during the preparation of this thesis. All material decisions were made by us, and the underlying content of the work is our own. Five systems were used in the course of the thesis: ChatGPT 5.5, Claude (Opus 4.6, Opus 4.7, and Sonnet 4.6), Google Gemini 3, Google NotebookLM, and Microsoft Copilot. Their use was confined to supportive tasks: brainstorming and refining ideas, surfacing candidate sources, clarifying complex concepts, drafting, refining and debugging code, summarising material we had already read, as well as proofreading, drafting, and refining text.

AI Use in the Literature Review and Theoretical Development

The literature review was primarily conducted by us through Google Scholar, the SSE library, and Elsevier Scopus. To supplement these searches, we used the deep-research functionalities of Claude, ChatGPT, Gemini, and NotebookLM to surface additional candidate papers, each of which we inspected manually before considering it for inclusion. The selection of papers cited, the structure of the literature review, and the development of the theoretical framework and hypotheses were carried out by us. We used ChatGPT and Claude on a limited basis as sparring partners to discuss specific papers after we had read them. The contribution of AI tools at this stage was to broaden the set of candidate sources beyond what our initial searches surfaced and to provide a counterpart for clarifying questions about specific concepts.

Two risks were identified. The first was that the models occasionally proposed papers that were off-topic or non-existent. We mitigated this by manually verifying every suggested source. The second was that the models could mischaracterise a paper’s arguments. We mitigated this by re-reading the relevant passages of each cited paper ourselves and discussing the arguments with each other. The residual risk of misinterpretation is, in our judgement, low.

AI Use in the Quantitative and Qualitative Analysis

The empirical design, variable construction, model specifications, and choice of robustness checks were developed by us. We used Claude, ChatGPT, and Gemini in a supporting role for the Stata implementation of our panel regressions and for clarification of specific statistical procedures, such as the construction of two-way cluster-robust standard errors and the implementation of the Oster (2019) bounds. No code suggestion was adopted without review. Every block of code that entered the final analysis was read, tested, and, where necessary, adjusted by us. Where outputs differed across models or appeared inconsistent with our expectations, we resolved the discrepancy through manual checks rather than by accepting any single model’s response.

For the qualitative strand of the analysis, we designed the interview question lists mostly ourselves, while receiving additional suggestions from Claude, ChatGPT, and Gemini to identify blind-spots and ensure academic integrity. While one of us was transcribing each interview manually, Microsoft Copilot was used in parts to transcribe interviews, given that the interviewee gave their explicit consent.

The contribution of AI tools at this stage was to accelerate coding and to provide a sparring partner for our review of statistical procedures. Two risks were identified. The first was that the models might produce incorrect Stata code. We addressed this by cross-validating proposed code across models, by testing every block against our data, and by checking implementations against the Stata documentation. The second was that an analytical output or its interpretation could be flawed. We addressed this through the same cross-validation procedure.

AI Use in Writing

Each section and sub-section of the manuscript was drafted by us on the basis of our own analysis, conclusions, and ideas. AI tools were mostly used to polish text by suggesting synonyms, propose alternative phrasings, refine paragraph structure, and flag repetition or other errors. Every suggestion was reviewed manually. The contribution of the tools at this stage was to improve readability and stylistic consistency. We assess the risk associated with this stage as low, since the substantive content of every paragraph was fixed by us before any model was consulted.

Concluding Reflections

Three insights emerged from working with AI tools throughout the thesis. First, large language models generate text by predicting probable token sequences rather than by reasoning about the underlying problem, which makes user-side verification a non-negotiable step at every stage. Treating model output as a hypothesis to be checked, rather than as an answer to be accepted, was central to our process. Second, the marginal benefit of AI use is largest in mechanical tasks such as coding, proofreading, and surfacing candidate sources, and smallest in tasks that require judgement, such as theoretical framing, interpretation, and the choice of empirical strategy. Calibrating the use of AI to this distinction proved important and helped ensure that the models complemented our learning rather than replacing it. Third, cross-validating across multiple models was, in our experience, a more effective check on factual and technical accuracy than relying on a single tool, since the models often disagreed in informative ways that prompted further investigation. Within these limits, AI tools were useful aids, but the thesis itself reflects our own research, our own judgements, and our own ideas.