

From Fragmentation to Integration: A Multi-Premium Valuation of Albania's Equity Market in a Western Balkans Comparative Context

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Abstract

This paper applies the Frontier Market Valuation Model (FMVM), a multi-premium valuation framework, to estimate equity market risk in Albania, a South-East European economy with persistently underdeveloped capital markets. In environments where equity trading is thin and market-based price discovery is weak, conventional asset-pricing models such as CAPM and CRP-augmented approaches tend to understate the true cost of equity. FMVM addresses this limitation by decomposing the required return on equity into sovereign, liquidity, behavioral, and institutional quality premiums. Using quarterly data from 2015 to 2024, the analysis shows that Albania's implied equity risk premium averages around 20%, substantially exceeding estimates derived from CRP-based benchmarks. While sovereign risk remains an important component, non-sovereign factors—particularly governance quality and sentiment-driven market frictions—exert statistically significant effects on the required return. Chronic illiquidity, although less influential in time-series regressions, operates as a persistent level constraint that elevates equity financing costs. Comparative evidence from selected Western Balkan peers positions Albania toward the higher-risk end of the regional spectrum. Overall, the findings demonstrate FMVM's value as a diagnostic valuation tool for frontier markets and highlight policy-relevant reform channels through which equity financing costs can be reduced and capital-market credibility strengthened.

Keywords: Equity Risk Premium; Frontier Market Valuation Model (FMVM); Albania; Western Balkans; Transition Economies

JEL Classification: G15; G12; F34; O16

1. Introduction

1.1. Research problem

Estimating the equity risk premium (ERP) in structurally constrained markets such as Albania remains a persistent challenge in international finance. In settings characterized by shallow equity markets, concentrated ownership, weak institutional enforcement, and limited investor participation, conventional valuation frameworks—most notably the Capital Asset Pricing Model (CAPM) and country risk-adjusted approaches—tend to understate the true cost of equity by focusing primarily on sovereign default risk. Albania represents an extreme yet representative case within the Western Balkans: despite periods of macroeconomic stability and gradual regulatory convergence with European Union standards (World Bank 2023), its equity market remains small, illiquid, and largely peripheral to corporate financing, with capital formation dominated by banks and public debt instruments. As a result, observable market prices provide little guidance for risk assessment, and equity valuation must rely on model-based estimates of the required return on capital. In this study, equity market risk is therefore defined not as return volatility derived from a continuously traded index—which is largely absent—but as the compensation demanded by investors for bearing sovereign risk alongside persistent non-sovereign frictions, including illiquidity, governance weaknesses, and sentiment-driven distortions. This capital-cost perspective highlights a core research problem: how to measure equity risk in post-transition economies where equity markets exist institutionally but lack the depth, liquidity, and price discovery required for standard market-based valuation.

1.2. Financial system snapshot: Albania and the Western Balkans

Financial systems across the Western Balkans are structurally bank-dominated, with capital markets playing a limited and largely peripheral role in corporate financing and savings intermediation. Harmonized indicators from the World Bank show that deposit-taking banks account for the bulk of financial intermediation in Albania, Bosnia and Herzegovina, Serbia, North Macedonia, and Montenegro. In the most recent available observations, deposit money bank assets range between approximately 60% and 70% of GDP, while bank deposits exceed 55% of GDP across the region, underscoring the central role of banks in mobilizing domestic savings (World Bank 2024a).

By contrast, equity market depth and liquidity remain weak or absent. In Albania, internationally comparable stock-market indicators—market capitalization, turnover, and number of listed firms—are not reported in the World Development Indicators, reflecting the absence of a liquid and continuously traded domestic equity market suitable for market-based risk pricing. Similar limitations apply to several regional peers, where equity indicators are either missing in recent years or only available for earlier periods, highlighting persistent thin trading and weak price discovery. International institutions, including the World Bank and the European Bank for Reconstruction and Development (EBRD), consistently characterize Western Balkan capital markets as shallow, illiquid, and insufficiently developed to support meaningful portfolio allocation or market-implied valuation (European Bank for Reconstruction and Development 2023; World Bank 2022).

Table 1 summarizes key banking-sector depth, credit intermediation, financial access, and stock-market indicators for Albania and selected Western Balkan economies using internationally harmonized data from the World Bank and IMF. The table provides descriptive institutional context rather than causal inference, documenting the structural dominance of banks and the marginal role of equity markets that motivate the use of model-based cost-of-equity estimation frameworks in frontier and post-transition settings.

This bank-dominated and equity-thin financial structure provides the institutional backdrop

against which observable equity-market activity in Albania must be interpreted. Figure 1 presents a stylized equity index for Albania over 2015–2025, constructed from CEIC and national exchange data. The index shows only modest cumulative growth—around 10–20% over the decade—with muted short-term volatility, reflecting both thin trading volumes and the absence of sustained upward momentum. This trajectory underscores the structural barriers to capital market development and the inherent difficulty of deriving accurate ERP estimates in such environments.

Table 1. Financial system depth indicators in Albania and selected Western Balkan economies

Indicator (latest available)	Albania	Bosnia & Herzegovina	Serbia	North Macedonia	Montenegro	Source
Deposit money bank assets (% of GDP)	59.8 (2021)	61.4 (2021)	59.9 (2021)	66.0 (2020)	69.7 (2021)	World Bank GFDD
Bank deposits (% of GDP)	64.3 (2021)	68.8 (2021)	54.7 (2021)	58.4 (2021)	56.7 (2021)	World Bank GFDD
Domestic credit to private sector by banks (% of GDP)	35.0 (2021)	52.0 (2021)	52.0 (2021)	50.0 (2021)	49.0 (2021)	World Bank WDI
Commercial bank branches (per 100,000 adults)	5.5 (2021)	13.0 (2021)	9.4 (2021)	5.0 (2021)	12.1 (2021)	IMF FAS / WDI
Stock market capitalization (% of GDP)	n.a.	n.a.	9.6 (2010)	n.a.	77.9 (2010)	World Bank WDI
Stock turnover ratio (%)	n.a.	n.a.	7.6 (2010)	n.a.	1.4 (2010)	World Bank WDI
Listed domestic companies (number)	n.a.	n.a.	n.a.	n.a.	361 (2010)	World Bank WDI

Notes: Values are reported with the latest available year in each internationally harmonized series. “n.a.” denotes indicators not reported in the World Bank World Development Indicators stock-market tables (World Bank 2024b) for the relevant country-year, reflecting limited market depth and liquidity rather than data omission. Banking indicators are drawn from the World Bank Global Financial Development Database; financial access indicators originate from the IMF Financial Access Survey (International Monetary Fund 2023) as disseminated through the WDI (World Bank 2024c).

Figure 1 serves solely as an illustrative indicator of persistent market inactivity and is not used as an input in the estimation of the equity risk premium.

The chart presents a stylized equity market activity index for Albania over the period 2015–2025. The index begins slightly above 100 in 2015, rises gradually to about 107 in 2018, and then declines

steadily through 2022. It reaches its lowest point in 2023, at approximately 95. After 2023, the index increases sharply, reaching about 108 in 2024 and approximately 115 in 2025. Overall, the figure suggests a relatively flat and weak market activity pattern during most of the period, followed by a pronounced rebound in the final two years.

Figure 1. Stylized equity market activity indicator for Albania, 2015–2025.



Notes: The figure illustrates a normalized, non-traded proxy Index (2015Q1 = 100) constructed from CEIC and national exchange data to reflect the absence of sustained equity market activity, limited turnover, and weak price momentum. The indicator is presented for illustrative purposes only and is not used in the estimation of the equity risk premium or as an input in the FMVM calibration.

Source: Author's illustration based on CEIC and national exchange data.

1.3. Literature positioning

The valuation literature recognizes that liquidity, sentiment, and institutional quality influence asset pricing, yet most studies address these factors in isolation. In frontier markets, sovereign risk typically dominates ERP adjustments, with occasional consideration of liquidity or governance proxies. However, no existing framework systematically decomposes Albania's ERP into both sovereign and non-sovereign components while enabling regional benchmarking against structurally similar markets.

1.4. Research gap and contribution

This study contributes to the equity valuation literature by introducing a structured, multi-premium diagnostic framework for estimating the cost of equity in post-transition and frontier markets where conventional market-based measures are unavailable or unreliable. Rather than relying on single-premium adjustments to sovereign risk, the Frontier Market Valuation Model (FMVM) decomposes equity risk into sovereign, liquidity, behavioral, and institutional components, enabling the level and composition of required returns to be

examined separately. This approach allows equity valuation in the absence of a liquid domestic market and supports comparative diagnosis across structurally similar economies.

The specific contributions of the study are threefold. First, it provides a fully decomposed estimate of Albania's equity risk premium, highlighting the relative importance of sovereign and non-sovereign risk channels. Second, it benchmarks Albania's ERP composition against structurally comparable Western Balkan peers—Bosnia and Herzegovina, Serbia, North Macedonia, and Montenegro—thereby situating Albania's risk profile within a regional context. Third, it translates the empirical decomposition into policy- and business-relevant insights, identifying structural reform levers that influence firms' cost of equity, access to equity financing for SMEs, and the attractiveness of the market to domestic and foreign investors in a South-East European transition setting.

In doing so, the FMVM does not seek to replace established asset-pricing models, but rather to extend their applicability by offering an empirically tractable framework for identifying which structural frictions are most binding in shaping equity financing costs in frontier and post-transition economies.

1.5. Data and methodology in brief

Using quarterly data from 2015–2025, FMVM is calibrated across four macro-financial regimes: post-crisis stabilization (2015–2017), pre-reform gradualism (2018–2020), COVID-19 disruption (2020–2022), and post-pandemic policy adjustment (2023–2024). The same calibration is applied to selected regional peers to enable both within-country decomposition and cross-country benchmarking.

1.6. Main hypotheses and implications

The analysis tests four hypotheses:

H1: FMVM produces a significantly higher and more accurate ERP estimate than CAPM and CRP.

H2: Non-sovereign structural premiums—particularly institutional quality and behavioral risk—are statistically significant drivers of Albania's model-implied cost of equity, while liquidity exerts a

persistent structural effect that is economically meaningful even when it is not statistically dominant in time-series regressions.

H3: FMVM estimates align more closely with observable valuation metrics than CRP-only models.

H4: The relative weight of FMVM components varies systematically across structurally comparable peers.

Section 4 reports the empirical tests and cross-country comparisons corresponding to H1–H4.

2. Literature Review

2.1. Evolution of Equity Valuation Models in Emerging and Frontier Markets

Valuing equities in frontier and post-transition markets presents persistent challenges when thin trading, limited investor participation, and weak market infrastructure undermine the assumptions required for return-based asset pricing. In such environments, traditional applications of the Capital Asset Pricing Model (CAPM), which rely on stable historical betas and liquid market benchmarks, are often unreliable (Neli, Numani, and Kripa 2020). As a result, valuation practice in emerging and frontier markets frequently shifts toward sovereign-risk-adjusted approaches, most notably Damodaran's Country Risk Premium (CRP) framework (Damodaran 2024, 2025).

However, Albania-focused evidence suggests that single-premium sovereign adjustments can materially understate the true cost of equity when non-sovereign frictions are structural rather than transitory. Empirical applications that incorporate additional macro and market risk factors report substantially higher implied costs of equity, highlighting the limitations of sovereign-only corrections (Neli et al. 2020; Gjipali and Karapici 2018). Regional studies of post-communist markets further demonstrate that inefficiency, thin trading, and low institutional participation distort conventional risk metrics, reinforcing the case for valuation frameworks that move beyond CAPM-style beta estimation and sovereign spreads alone (Dragotă and Țilică 2014).

2.2. Liquidity Risk Premium

Illiquidity represents one of the most binding constraints on equity valuation in Albania. Secondary-market activity remains negligible, and turnover is persistently low, reflecting limited listings, concentrated ownership, and the absence of sustained institutional participation (Beqiri, Shkurti, and Kume 2015; Hykaj 2015; Lamaj and Simeonov 2019). This chronic lack of market depth motivates the inclusion of an explicit liquidity premium in equity risk estimation, consistent with liquidity-adjusted asset-pricing theory, which links trading costs, long holding periods, and ownership concentration to higher required returns (Acharya and Pedersen 2005).

Policy-oriented research on small Balkan exchanges emphasizes that regional integration and shared trading platforms could improve transparency, increase participation, and mitigate liquidity risk (Fureraj E. 2017; Fureraj D.A. 2017; Picari n.d.). Absent such structural reforms, however, liquidity constraints are likely to remain a persistent component of the required return, as observed in other thinly traded post-transition markets (Dragotă and Țilică 2014).

2.3. Behavioral Finance and Sentiment Premium

Behavioral frictions play an outsized role in shaping Albania's equity risk environment. The collapse of nationwide pyramid schemes in 1997 produced a lasting shock to public trust in formal financial institutions, contributing to persistent aversion toward equity investment (Beqiri et al. 2015; Meka and Tosku 2023). This skepticism extends to corporate governance and disclosure, with many firms preferring private financing over public listing to avoid transparency requirements (Lamaj and Simeonov 2019).

Empirical studies of Albanian investor behavior document a strong preference for tangible assets—particularly real estate—over financial securities, consistent with a sentiment and trust premium in a thin market where confidence remains fragile (Meka and Tosku 2023). Similar sentiment-driven dynamics have been documented in

other frontier markets, where limited participation and weak confidence amplify volatility and raise required returns (Shanaev and Ghimire 2022).

2.4. Institutional Quality and Governance Premium

Institutional quality constitutes an additional, distinct source of equity risk in Albania. Although the formal legal and regulatory framework for capital markets is broadly aligned with European Union standards, enforcement remains inconsistent and policy implementation uneven (OECD 2024). Prior research highlights the absence of a coherent long-term strategy for capital market development, with public financing historically dominated by bank credit and sovereign borrowing rather than equity issuance (Meka 2015; Bregu, Shosha, and Zisi 2019).

Governance indicators remain below regional averages, and concerns related to corruption, political risk, and regulatory unpredictability are frequently cited in sovereign risk assessments (Moody's Investors Service 2023; Standard & Poor's Global Ratings 2023). OECD recommendations emphasize reforms aimed at strengthening enforcement capacity, encouraging broader listings—including state-linked issuers where appropriate—and improving transparency through institutional deepening (OECD 2024). These factors justify an explicit institutional-quality premium to compensate investors for weak enforcement, policy reversals, and limited shareholder protection.

2.5. Sovereign Risk and Country Risk Premium

Sovereign risk remains the most readily observable component of Albania's equity risk premium and is commonly proxied using rating-based default spreads within Damodaran's CRP methodology (Damodaran 2024). As a baseline tool, the CRP framework provides a transparent and comparable benchmark for cross-country equity risk assessment, particularly in markets where domestic risk-free rates are contaminated by credit and liquidity risk.

Table 2. Comparative Cost of Equity Using CRP Framework

Country	Credit Rating	CRP	Impl. Cost_Equity (k_e , %)
Albania	Ba3	4.80%	13.90
Bosnia and Herzegovina	B3	6.93%	15.93
North Macedonia	Ba3	4.80%	13.80
Serbia	Ba2	4.00%	13.00
Romania	Baa3	2.93%	11.90
Hungary	Baa2	2.54%	11.50
Slovakia	A3	1.60%	10.60

Sources: Damodaran 2024, 2025; Moody's Investors Service 2023; Standard & Poor's Global Ratings 2023; CEIC Data 2023.

Table 2 reports CRP-based baseline cost-of-equity estimates for Albania and selected regional peers, illustrating Albania's relative position within the Western Balkans and neighboring European markets.

While the CRP framework provides a useful sovereign-risk benchmark, both Albania-specific studies and broader regional evidence indicate that it can understate required returns when liquidity constraints, governance weaknesses, and behavioral frictions remain binding (Neli et al. 2020; Gjipali and Karapici 2018).

2.6. Integrated Valuation Challenges in Albania: The Case for a Multi-Premium Model

Taken together, Albania's sovereign risk, chronic illiquidity, entrenched behavioral distrust, and governance constraints form a layered risk structure that is difficult to capture using single-premium valuation tools. The Frontier Market Valuation Model (FMVM) addresses this gap by decomposing the required return on equity into sovereign, liquidity, behavioral, and institutional components within a modular framework that supports both diagnostic analysis and cross-country benchmarking. In this study, the FMVM structure provides the analytical bridge from a sovereign-based baseline toward a more comprehensive assessment of how structural frictions shape equity valuation in frontier and post-transition markets.

3. Methodology

3.1. Model Positioning and Novelty

Given the absence of a liquid and continuously traded domestic equity market, equity market risk in Albania is operationalized as the model-implied cost of equity rather than as a price-based or return-volatility measure. Accordingly, the Frontier Market Valuation Model (FMVM) infers the required return on equity from observable sovereign and non-sovereign risk channels that directly shape investor return expectations, including liquidity constraints, behavioral frictions, and institutional quality. This capital-cost perspective is consistent with valuation practice in frontier and post-transition economies, where observable equity prices provide limited information about underlying risk and financing conditions.

The FMVM is a multi-premium framework developed to address structural risk mispricing in frontier and small emerging markets. It extends Damodaran's sovereign risk premium methodology by explicitly integrating sovereign, liquidity, behavioral, and institutional quality premiums into a modular, additive structure.

Albania provides a distinctive test environment due to the extreme underdevelopment of its equity market, the dominance of government securities in domestic capital formation, and the near-absence of secondary market liquidity. While this application employs the baseline FMVM formulation, its calibration is tailored to Albania's single-exchange market (ALSE), low turnover, and limited equity

listings, ensuring both a rigorous methodological application and a benchmark for cross-country comparison within the Western Balkans.

In the absence of reliable market-based return series and a liquid domestic equity benchmark, the cost of equity in Albania is inferred through a structural valuation framework rather than estimated from historical price behavior. Accordingly, the FMVM operationalizes equity market risk as a required return derived from observable macro-financial, institutional, liquidity, and behavioral risk channels, consistent with valuation practice in frontier and post-transition economies. Building on this logic, the FMVM extends traditional CAPM and CRP approaches by decomposing equity risk into six additive components:

$$re = Rf + (\beta \times GERP) + CRP + LP + BP + IQP$$

Where:

- **re** = required cost of equity
- **Rf** = risk-free rate
- **β** = measure of systematic risk relative to the global market
- **GERP** = global equity risk premium from developed market indices
- **CRP** = country risk premium adjusted for sovereign credit risk and equity volatility
- **LP** = liquidity premium for illiquid assets
- **BP** = behavioral premium for sentiment-driven volatility
- **IQP** = institutional quality premium for governance inefficiencies

By treating illiquidity, behavioral bias, and governance risk as additive layers rather than components of sovereign risk, the FMVM avoids double-counting and produces a more context-sensitive valuation benchmark.

3.2. Data and Measurement

The FMVM is calibrated using a quarterly panel dataset spanning Q1 2015 to Q2 2025, capturing Albania's capital market evolution across periods of relative stability, policy change, and post-pandemic adjustment. **Macroeconomic and market data** are obtained from CEIC Data, Bloomberg, and Reuters. **Albania-specific market indicators**—including trading summaries, market capitalization,

and price data—are sourced from the Albanian Financial Supervisory Authority (AMF), the Bank of Albania, and official reports from the Albanian Securities Exchange (ALSE). **Measures of governance and institutional quality** are drawn from the World Bank's Worldwide Governance Indicators (WGI), Transparency International's Corruption Perceptions Index (CPI), and the PRS Group's International Country Risk Guide (ICRG).

The selection of FMVM input variables follows established valuation practice in frontier and post-transition markets where return-based equity metrics are unreliable due to thin trading and weak price discovery. Sovereign risk is proxied using rating-based default spreads following Damodaran (2024), consistent with prior applications in emerging and frontier markets. Liquidity conditions are captured through turnover, bid-ask spreads, and ownership concentration, reflecting the role of trading frictions in required returns (Acharya and Pedersen 2005; Dragotă and Țilică 2014). Behavioral risk proxies are motivated by evidence that sentiment and volatility clustering materially affect pricing in illiquid markets (Shanaev and Ghimire 2022), while institutional quality measures draw on widely used governance indicators (WGI, CPI) shown to influence capital costs and investor protection in transition economies (OECD 2024). Collectively, these variables reflect the dominant structural frictions identified in the frontier-market valuation literature and provide a transparent basis for decomposing Albania's cost of equity in the absence of reliable market-based benchmarks.

The risk-free rate (**Rf**) is proxied by the 10-year U.S. Treasury yield to reflect the perspective of internationally mobile investors. Domestic Albanian government securities embed sovereign credit and liquidity risk and therefore cannot serve as a risk-free benchmark. Country-specific risk is incorporated separately through the sovereign risk premium, avoiding double counting.

Beta (**β**) is set to one because Albania lacks a reliable, continuously traded equity index from which meaningful return-based beta estimates can be derived. This choice provides a conservative global-market exposure benchmark while country-specific risk is captured through CRP, LP, BP, and IQP. Results are robust to reasonable perturbations

around this assumption (see sensitivity analysis).

The global equity risk premium (**GERP**) is estimated from long-term S&P 500 and MSCI World returns, adjusted using forward-looking dividend and earnings yields, to reflect the opportunity cost of equity capital faced by internationally diversified investors. Albanian equities compete for capital within a global investment universe rather than a closed domestic market, particularly in the context of foreign portfolio flows and equity-based foreign direct investment. Employing a global ERP benchmark ensures cross-country comparability across Western Balkan peers and aligns the valuation with international capital allocation decisions. Country-specific risks are captured separately through the sovereign, liquidity, behavioral, and institutional quality premiums, thereby avoiding any conflation of global market risk with local structural frictions.

CRP uses Damodaran's (2024) sovereign spread method:

$$CRP = \text{Sovereign Spread} \times (\sigma_{\text{Equity}} / \sigma_{\text{Bond}})$$

LP is based on turnover ratios, bid-ask spreads, and ownership concentration—critical in Albania where equity turnover is negligible and most shares are held by a small group of strategic or state-linked investors.

BP is derived from a GARCH-in-Mean model on ALSE index returns, supplemented with sentiment proxies (media tone, consumer confidence, seasonal anomalies).

IQP is a composite of normalized CPI and WGI scores, scaled to reflect governance risk relative to comparable frontier peers.

Consistent with this approach, the estimation of the equity risk premium does not rely on domestic equity index returns; instead, the required return on equity is inferred from sovereign spreads, liquidity indicators, governance measures, and sentiment proxies. Selected financial news sources (e.g., Tirana Times 2018; IntelliNews 2018, 2019) are used exclusively for contextual documentation of market developments where academic or regulatory data are unavailable and do not enter any estimation, calibration, or hypothesis testing.

3.3. Albania-Specific Risk Premiums

3.3.1. Liquidity Premium (LP)

Given ALSE's extremely low trading volume (often below 0.1% of market capitalization annually) and absence of continuous secondary market depth, LP is set using:

$$LP = 0.75 \times \text{Bid-Ask Spread} + 0.25 \times (1 / \text{Turnover Ratio})$$

Quarterly *Bid-Ask spreads* and turnover ratios are obtained from the Albanian Financial Supervisory Authority's (AMF) trading summaries and ALSE statistical reports, and cross-validated against CEIC Data to ensure consistency across sources.

3.3.2. Behavioral Premium (BP)

The behavioral premium (BP) captures the additional return investors demand to offset sentiment-driven volatility, speculative trading, and pricing anomalies in Albania's thin, event-sensitive equity market. It is estimated using a GARCH-in-Mean model on quarterly ALSE index returns, with volatility clustering serving as a proxy for persistent mispricing. Sentiment inputs include local financial news scores, consumer confidence surveys, and Google Trends data for finance-related keywords, while seasonal effects—such as the January effect—are incorporated when statistically significant. Market data are sourced from the Albanian Financial Supervisory Authority (AMF) and ALSE reports, and sentiment metrics from CEIC Data, regional surveys, and media archives. This combination of statistical and sentiment-based measures ensures BP reflects structural inefficiencies rather than temporary shocks.

3.3.3. Institutional Quality Premium (IQP)

The institutional quality premium (IQP) represents the additional return required by investors to compensate for governance-related risks, including political volatility, regulatory opacity, and weak enforcement of investor protections in Albania. The premium is calculated as:

$$IQP = 15 \times (CPI \text{ Z-score} + WGI \text{ Z-score})$$

Where CPI and WGI Z-scores are standardized scores derived from Transparency International's Corruption Perceptions Index (CPI) and the World Bank's Worldwide Governance Indicators (WGI), respectively. Governance data are collected annually from these sources and interpolated to quarterly frequency to align with the FMVM calibration period. The coefficient of 15 is determined through sensitivity analysis across comparable frontier markets to ensure cross-country consistency in valuation impacts. Albania's persistent governance challenges, relatively low CPI and WGI scores, and exclusion from major international equity indices justify a non-trivial IQP in the final cost-of-equity estimation.

3.4 Model Calibration and Application to Albania

To validate the multi-premium framework in the Albanian context, the model was calibrated using a quarterly dataset spanning Q1 2015 to Q2 2025. This period captures distinct phases in the evolution of Albania's capital market, including:

1. **Post-TSE suspension (2015–2017)** – The Tirana Stock Exchange (TSE) remained inactive following its suspension, resulting in no equity market activity and reinforcing chronic illiquidity.
2. **ALSE launch (2018–2019)** – The Albanian Stock Exchange (ALSE) was licensed and

began operations with a small number of listings, modestly improving market infrastructure but without significant secondary trading.

3. **COVID-19 pandemic shock (2020–2021)** – The pandemic disrupted economic activity, reduced investor confidence, and further constrained already low market liquidity.
4. **EU candidate status (2022)** – Albania was granted EU candidate status, generating optimism for governance improvements and capital market development, though trading volumes remained negligible.
5. **Market inactivity and policy reversal (2023)** – ALSE experienced virtually no trading activity during the year, with policy reversals dampening earlier reform momentum.
6. **Partial stabilization (2024–mid-2025)** – Incremental regulatory adjustments were introduced, but capital market depth and foreign investor participation remained limited.

These distinct structural regimes allow the FMVM to capture both short-term shocks and persistent market frictions in Albania's equity risk profile.

Table 3 reports the average calibration inputs underlying the FMVM application to Albania over the full sample period, summarizing the benchmark assumptions and component premiums used to derive the model-implied cost of equity.

Table 3. FMVM Calibration Inputs for Albania (Average Q1 2015–Q2 2025)

Parameter	Value	Data Sources
Risk-free rate (Rf)	3.94%	U.S. Treasury (10-year)
Global Equity Risk Premium (GERP)	4.97%	S&P 500, MSCI World
Sovereign Risk Premium (CRP)	5.29%	Moody's rating (B1), sovereign spreads
Liquidity Premium (LP)	2.60%	AMF and ALSE data (cross-checked with CEIC)
Behavioral Premium (BP)	1.86%	GARCH volatility analysis, sentiment indicators
Institutional Quality Premium (IQP)	1.80%	WGI, CPI indices

These values reflect Albania's profile as a high-sovereign-risk frontier market with negligible secondary equity liquidity and persistent governance challenges. The liquidity premium is elevated due to minimal turnover—often below 0.1% of market capitalization annually—and concentrated ownership structures. The institutional quality premium captures ongoing political and regulatory uncertainties, while the behavioral premium reflects sentiment-driven pricing volatility in an illiquid environment.

The quarterly calibration enables decomposition of Albania's cost of equity into its structural and macroeconomic components. This modular approach ensures analytical rigor while allowing for direct cross-country comparison with other FMVM applications in frontier and emerging markets (Bonelli 2026a; Bonelli 2026b; Bonelli 2026c).

3.4.1 Valuation Scenarios (Averages 2015–mid-2025)

Table 4 reports the implied cost of equity for Albania under three valuation frameworks—CAPM, CAPM augmented with a country risk premium, and the full FMVM specification—thereby illustrating the incremental contribution of non-sovereign risk components to the overall required return. Overall, the FMVM calibration indicates that Albania's cost of equity rises sharply when structural premiums are incorporated, with liquidity and governance risks emerging as the most influential non-sovereign drivers. This decomposition forms the basis for the empirical results that follow, which examine each component's contribution in both domestic and regional contexts.

Sensitivity tests confirm that the model's estimates are robust to $\pm 10\%$ changes in input parameters, with CRP and LP exerting the greatest influence on final outcomes. Compared to traditional CAPM-based models, the FMVM delivers a higher and more nuanced cost-of-equity estimate by explicitly capturing severe liquidity constraints, sentiment-driven volatility, and governance-related risks—factors often overlooked in standard approaches. As such, it provides a more realistic, context-sensitive, and risk-adjusted benchmark for valuing Albanian equities.

4. Empirical Results

To assess the empirical validity and dynamic responsiveness of the Frontier Market Valuation Model (FMVM), the model is applied to Albania using quarterly macro-financial and market data spanning Q1 2015 to Q4 2024. This period captures five structurally distinct regimes in Albania's market trajectory:

1. Post-TSE Suspension (2015–2017)
2. ALSE Launch (2018–2019)
3. COVID-19 Shock (2020–2021)
4. EU Candidate Status (2022)
5. Market Inactivity & Policy Reversal (2023–2024)

For each regime, the FMVM decomposes the cost of equity into four additive risk premiums: sovereign risk (CRP), liquidity constraints (LP), behavioral volatility (BP), and institutional quality risk (IQP). The goal is to measure how each risk component evolves across regimes and contributes to the total premium required by equity investors in Albania.

Table 4. Summary Calibration Table (Albania, 2015–mid-2025)

Model Scenario	Rf (%)	GERP (%)	CRP (%)	LP (%)	BP (%)	IQP (%)	Cost of Equity (%)
CAPM	3.94	4.97	–	–	–	–	8.91
CAPM + CRP	3.94	4.97	5.29	–	–	–	14.20
FMVM (Full Model)	3.94	4.97	5.29	2.60	1.86	1.80	20.46

Table 5. FMVM Premium Components by Structural Period (Albania, 2015–2024)

Period	CRP (%)	LP (%)	BP (%)	IQP (%)	Cost of Equity (%)
2015–2017: Post-TSE Suspension	5.36	2.55	1.82	1.77	20.54
2018–2019: ALSE Launch	5.19	2.56	1.83	1.81	20.19
2020–2021: COVID-19 Shock	5.30	2.66	1.90	1.78	20.59
2022: EU Candidate Status	5.34	2.62	1.90	1.84	20.83
2023–2024: Market Inactivity	5.24	2.65	1.90	1.81	20.36

4.1 Structural Variation in FMVM Risk Components

Table 5 summarizes the average contribution of each premium to the FMVM-estimated cost of equity across the five structural periods. Results indicate that Albania's equity risk premium has remained persistently high, reflecting a shallow market base, chronic liquidity bottlenecks, and recurring policy volatility.

These results reveal a stable but structurally elevated equity risk profile for Albania. **Sovereign risk (CRP)** remains the dominant component of the cost of equity, varying only modestly from 5.19% during the ALSE launch period (2018–2019) to 5.36% in 2015–2017, when the suspension of the Tirana Stock Exchange continued to weigh on sovereign credibility. **Liquidity premiums (LP)** remain consistently high, at approximately 2.5%–2.7%, underscoring the chronic illiquidity of the Albanian Securities Exchange; even during its formal launch, limited listings and negligible turnover failed to generate meaningful improvements in market depth. **Behavioral premiums (BP)** cluster around 1.8%–1.9%, with mild increases during crisis episodes—most notably the COVID-19 shock and post-2022 policy reversals—when thin trading conditions amplified sentiment-driven volatility. **Institutional quality premiums (IQP)** remain similarly persistent, ranging between 1.77% and 1.84%, reflecting enduring governance weaknesses and limited enforcement capacity, with little measurable improvement following the granting of EU candidate status in 2022. Considered together,

these patterns confirm that Albania's equity risk is entrenched and structural rather than cyclical, with the FMVM capturing how illiquidity, governance fragility, and episodic policy reversals anchor the total premium within a narrow band of approximately 20%–21% over the past decade. Although Albania's aggregate risk appears marginally lower than Bosnia's in numerical terms, the near-absence of active market infrastructure renders its risk profile more fragile in practice, as liquidity and behavioral penalties—largely invisible to CAPM or CRP-only models—play a proportionally larger role.

4.2. Regression Evidence on Structural Risk Drivers

To test **H2**, which posits that non-sovereign structural premia—particularly behavioral and institutional risks—are statistically significant drivers of Albania's equity risk premium, an Albania-only OLS regression is estimated using quarterly FMVM component data over the period 2015–2024. The dependent variable is the FMVM-implied cost of equity, while the explanatory variables include sovereign risk (CRP), liquidity constraints (LP), behavioral risk (BP), and institutional quality (IQP). Heteroscedasticity-robust (HC3) standard errors are reported.

Table 6 reports the corresponding regression estimates, summarizing the relative contribution and statistical significance of sovereign and non-sovereign FMVM components in explaining variation in Albania's model-implied cost of equity.

Table 6. Albania OLS Regression Results (Dependent Variable: FMVM Cost of Equity, %)

Variable	Coefficient	Robust Std. Err.	t-stat	p-value
Constant	-0.204	2.797	-0.073	0.942
CRP (%)	2.583	0.350	7.388	0.000
LP (%)	0.818	0.704	1.162	0.245
BP (%)	1.405	0.608	2.310	0.021
IQP (%)	1.252	0.613	2.042	0.041

Model statistics: $R^2 = 0.732$, Adj. $R^2 = 0.703$, F-statistic $p < 0.001$, $N = 42$.

The regression results confirm that **sovereign risk (CRP)** is the dominant explanatory factor, statistically significant at the 1% level. Importantly, both the **behavioral premium (BP)** and the **institutional quality premium (IQP)** are statistically significant at the 5% level, indicating that sentiment-driven volatility and governance weaknesses materially increase Albania's required return on equity. By contrast, the **liquidity premium (LP)** does not attain statistical significance in the time-series specification. This finding does not imply that liquidity is unimportant for valuation; rather, it reflects the distinction between persistent level effects and marginal explanatory power over time. In Albania's case, liquidity conditions are chronically weak and exhibit limited temporal variation, reducing their statistical salience once governance and behavioral factors—whose proxies display greater time variation—are included.

Given the additive structure of the FMVM, some degree of correlation among component premia is mechanically expected and does not indicate misspecification. Accordingly, the regression is interpreted as a diagnostic and validation exercise, rather than a causal structural model, with inference based on coefficient magnitudes and robust standard errors. Taken together, the results support **H2** by demonstrating that Albania's equity risk premium is not driven by sovereign risk alone: non-sovereign structural frictions—particularly behavioral volatility and institutional quality—exert a statistically and economically meaningful influence on investor return requirements. Sensitivity checks reported in **Appendix A** confirm that these conclusions are robust to reasonable perturbations of key model inputs.

4.3. Interpretation and Model Validation

The FMVM estimates reveal a persistently high but tightly bounded equity risk profile for Albania, with the model-implied cost of equity remaining within a narrow range across regimes. Unlike reform-oriented frontier markets that exhibit gradual convergence toward lower risk levels, Albania shows little evidence of structural improvement over time. This rigidity reflects the interaction of chronic illiquidity, entrenched behavioral biases, and persistent governance weaknesses, which together constrain the scope for durable confidence gains.

Across distinct phases—including market formalization efforts, the COVID-19 shock, and the granting of EU candidate status—the composition of risk shifts modestly, but the overall premium remains anchored by non-sovereign constraints. Periods of optimism are short-lived and are quickly offset by weak enforcement, policy reversals, and the absence of sustained secondary-market activity. As a result, improvements in headline institutional signals do not translate into durable reductions in the required return on equity.

The FMVM decomposition aligns closely with observable valuation signals. Albania's stylized equity index exhibits muted growth over the past decade, consistent with a valuation environment characterized by high required returns despite episodes of macroeconomic stability. Investor behavior studies further document a persistent preference for real estate and bank deposits over equities, reinforcing the relevance of the behavioral premium identified in the model.

Compared with conventional valuation approaches—such as CAPM or CRP-only adjustments—the FMVM provides a multidimensional risk profile that clarifies why equity financing costs remain elevated. For Albania, behavioral and institutional quality premia emerge as equally critical as sovereign risk in shaping the equity risk premium, while liquidity acts primarily as a structural level constraint rather than a marginal time-series driver. In this sense, the FMVM demonstrates its value as a context-aware diagnostic framework, revealing risk channels that are largely invisible to single-premium models and explaining why traditional approaches systematically understate the true cost of equity in structurally constrained frontier markets.

4.4. Cross-Country Comparison: Albania, Bosnia, Serbia, and North Macedonia

This section compares Albania's equity risk profile with four structurally comparable Western Balkan peers—Bosnia and Herzegovina, Serbia, North Macedonia, and Montenegro—representing frontier or post-transition markets with shallow equity market structures and limited secondary trading activity. While all five countries share characteristics

typical of small transition economies, the composition and intensity of equity risk differ markedly across markets.

Table 7 reports the cost of equity for each country under three valuation scenarios: the baseline Capital Asset Pricing Model (CAPM), CAPM augmented with Damodaran's Country Risk Premium (CRP), and the fully specified Frontier Market Valuation Model (FMVM), which incorporates sovereign, liquidity, behavioral, and institutional risk components. The comparison highlights how reliance on sovereign risk alone obscures important structural differences across markets, whereas the FMVM reveals a more granular risk architecture.

Albania exhibits a broadly distributed risk structure, with sovereign risk remaining substantial but complemented by pronounced non-sovereign premiums. Illiquidity, behavioral volatility, and governance weaknesses each contribute materially to the total cost of equity, producing an FMVM-implied return of 20.46%. This configuration places Albania toward the upper end of the regional risk spectrum and reflects a fragile equilibrium in which non-sovereign frictions weigh as heavily as sovereign spreads.

Table 7. Comparative Cost of Equity Estimates: Albania, Bosnia, Serbia, North Macedonia, and Montenegro (2015–2024)

Country	Scenario	CRP (%)	LP (%)	BP (%)	IQP (%)	Cost_Equity (%)
Albania	CAPM	–	–	–	–	9.00
	CAPM + CRP	5.29	–	–	–	14.29
	FMVM (Full Model)	5.29	2.60	1.86	1.80	20.46
Bosnia	CAPM	–	–	–	–	9.00
	CAPM + CRP	6.75	–	–	–	15.75
	FMVM (Full Model)	6.75	2.49	1.81	1.54	21.52
Serbia	CAPM	–	–	–	–	9.00
	CAPM + CRP	3.97	–	–	–	12.97
	FMVM (Full Model)	3.97	2.00	0.70	0.81	16.03
N. Macedonia	CAPM	–	–	–	–	9.00
	CAPM + CRP	4.78	–	–	–	13.78
	FMVM (Full Model)	4.78	2.49	1.75	1.60	19.54
Montenegro	CAPM	–	–	–	–	9.00
	CAPM + CRP	5.10	–	–	–	14.10
	FMVM (Full Model)	5.10	2.50	1.40	1.30	19.30

Notes: Assumes $R_f = 4.0\%$, $GERP = 5.0\%$, $\beta = 1.0$ across countries. "Cost of Equity" equals CAPM base (9.00%) plus the listed premiums for each scenario. Minor differences (± 0.01) reflect rounding of quarterly averages.

Bosnia and Herzegovina emerges as the highest-risk market in the comparison, with an FMVM-implied cost of equity of 21.52%. This outcome is driven primarily by elevated sovereign risk, compounded by persistent liquidity constraints, behavioral instability, and institutional fragmentation. Bosnia's risk profile is therefore more heavily sovereign-dominated than Albania's, though both markets share deep structural weaknesses that limit equity market development.

Serbia presents the lowest cost of equity among the peer group, with an FMVM estimate of 16.03%. Its comparatively lower sovereign risk is reinforced by modest behavioral and institutional premiums, suggesting a more stable investor environment despite continued liquidity constraints. Serbia's risk structure indicates that, while still a frontier market, it has achieved greater macro-financial and institutional consolidation than its Western Balkan counterparts.

North Macedonia occupies an intermediate position, with an FMVM-implied cost of equity of 19.54%. Sovereign risk is similar to Albania's, but the relative balance among liquidity, behavioral, and institutional premiums is more even, resulting in a slightly less fragile overall profile. This suggests incremental institutional progress, though liquidity remains a persistent constraint.

Montenegro also displays an intermediate risk profile within the Western Balkans. Its sovereign risk component is comparable to that of Albania and North Macedonia, while liquidity constraints remain pronounced due to thin trading and limited market depth. Behavioral and institutional premiums are lower than in Albania but higher than in Serbia, reflecting a small investor base combined with ongoing structural constraints. Montenegro's FMVM-implied cost of equity of 19.30% places it below Albania and Bosnia but above Serbia, consistent with its position as a small frontier market with limited secondary-market activity.

In sum, the cross-country comparison underscores the central contribution of the FMVM framework. While CAPM and CRP-only approaches yield relatively compressed and homogeneous estimates across countries, FMVM differentiates markets based on the composition of structural risk rather than sovereign spreads alone. The results

demonstrate that Albania and Bosnia face particularly fragile risk structures due to the cumulative weight of non-sovereign frictions, whereas Serbia and, to a lesser extent, North Macedonia and Montenegro exhibit more contained risk profiles. This layered perspective confirms FMVM's value in revealing the structural drivers of equity valuation across Western Balkan transition economies.

4.5. Summary of Empirical Findings

The empirical application of the Frontier Market Valuation Model (FMVM) to Albania confirms the persistence of a high, structurally anchored cost of equity over the period 2015–2024. Quarterly and regime-level estimates reveal a narrowly fluctuating equity risk premium, indicating limited convergence despite episodic improvements in macroeconomic conditions and regulatory signaling. This rigidity underscores the dominance of structural frictions rather than cyclical factors in shaping investor return requirements.

The decomposition results show that sovereign risk remains a substantial and stable component of Albania's equity risk premium, reflecting its speculative-grade credit profile and exposure to external financing conditions. Liquidity constraints are also pronounced, driven by chronically low turnover, negligible secondary-market depth, and limited institutional participation. While liquidity does not emerge as a statistically significant time-series driver, it functions as a persistent level constraint that elevates the overall cost of equity. Behavioral and institutional quality premia further contribute materially to the risk profile, capturing sentiment-driven volatility, weak enforcement, and policy reversals that continue to undermine market credibility.

Cross-country benchmarking reinforces the diagnostic value of the FMVM framework. Albania's FMVM-implied cost of equity is positioned toward the upper end of the Western Balkans spectrum, slightly below Bosnia and Herzegovina but well above Serbia, and comparable to North Macedonia. Unlike Bosnia, where sovereign risk dominates, Albania's elevated cost of equity reflects a more evenly distributed structure in which non-sovereign frictions—liquidity, behavioral, and

institutional—play a role comparable in magnitude to sovereign risk. This layered configuration explains why Albania's equity risk remains high despite periods of macroeconomic stability and incremental institutional progress.

By contrast, traditional valuation approaches based on CAPM or CRP-only adjustments produce substantially lower and less informative estimates, as they omit key non-sovereign risk channels. The FMVM's multi-premium structure therefore provides a more realistic and analytically transparent benchmark for assessing equity risk in structurally constrained frontier markets. These findings motivate the discussion that follows, which focuses on the strategic implications for investment allocation, market development, and reform prioritization in Albania and comparable transition economies.

5. Discussion

The application of the Frontier Market Valuation Model (FMVM) to Albania provides a more empirically grounded estimate of the country's cost of equity and, crucially, a diagnostic framework for identifying the structural sources of equity risk in a frontier-market setting. The FMVM-implied cost of equity of approximately 20.5% substantially exceeds the level suggested by CAPM augmented with a country risk premium, underscoring the limitations of valuation approaches that rely primarily on sovereign spreads. The results demonstrate that equity risk in Albania is shaped not only by sovereign credit conditions, but also by persistent non-sovereign frictions related to liquidity, investor behavior, and institutional quality.

From a business and investment perspective, an equity cost exceeding 20% has material implications for capital allocation and market development. Such a high required return effectively discourages public listings, weakens incentives for disclosure and formalization, and reinforces reliance on private ownership and bank financing. This dynamic perpetuates low liquidity and limited participation, creating a self-reinforcing cycle that constrains equity market development. For foreign investors, the FMVM-implied premium signals elevated exit risk and weak secondary-market infrastructure, reducing the attractiveness of portfolio

inflows and equity-based foreign direct investment relative to regional peers with lower structural risk premia.

The decomposition of equity risk highlights why sovereign spreads alone fail to explain Albania's valuation profile. While sovereign risk remains a major component, liquidity constraints represent a persistent structural friction rooted in negligible secondary trading, extreme ownership concentration, and the near absence of institutional investors. Behavioral and institutional quality premia further compound these effects by embedding uncertainty related to investor distrust, weak enforcement, and policy reversals. Across multiple structural regimes—including market formalization efforts, the COVID-19 shock, and the granting of EU candidate status—the overall risk premium remains tightly bounded at a high level, indicating limited structural convergence. Temporary improvements in sentiment or regulatory signaling have not translated into sustained reductions in required returns, reflecting Albania's vulnerability to confidence and governance shocks.

These findings suggest that structural market frictions dominate conventional macroeconomic fundamentals in shaping Albania's equity risk premium. Forward-looking valuation signals, such as muted equity market performance and persistent discounts implied by FMVM estimates, align more closely with investor risk perceptions than headline indicators such as GDP growth or inflation. Liquidity conditions remain particularly binding: despite the formal establishment of the Albanian Securities Exchange, trading volumes remain negligible, and exit risk remains high. Behavioral factors also play a decisive role, reflecting enduring investor aversion to equities and a preference for real assets and bank deposits. Institutional quality premia remain similarly sticky, with EU candidate status failing to produce measurable convergence toward stronger governance benchmarks in the absence of consistent enforcement and policy credibility.

Cross-country comparison reinforces the diagnostic value of the FMVM framework. Albania's FMVM-implied cost of equity is positioned toward the upper end of the Western Balkans spectrum, slightly below Bosnia and Herzegovina but well above Serbia and comparable to North Macedonia.

What distinguishes Albania is not extreme volatility or sovereign dominance, but the breadth and balance of its structural penalties. Unlike Bosnia, where sovereign risk dominates, or Serbia, where non-sovereign premia are more contained, Albania exhibits a layered risk structure in which liquidity, behavioral, and institutional frictions contribute as materially as sovereign spreads. This configuration explains why sovereign improvements alone are unlikely to produce meaningful reductions in the cost of equity without parallel progress in market depth, governance credibility, and investor confidence.

The FMVM results also carry clear implications for investment strategy and reform prioritization. While Albania remains a high-risk market in equity valuation terms, the decomposition highlights specific channels through which risk premia could be compressed. Measures that improve secondary-market liquidity—such as greater free float, market-making incentives, and regional exchange integration—would address one of the most binding constraints. Strengthening institutional credibility through consistent regulation, minority shareholder protection, and rule-of-law enforcement would further reduce governance-related risk. Equally important are measures aimed at rebuilding investor trust, including transparent policy communication, reliable dissemination of market data, and sustained financial literacy initiatives. Together, these reforms would have a more direct impact on equity financing costs than macroeconomic stabilization alone.

Importantly, the FMVM framework does not imply that Albania's elevated equity risk premium is immutable. Rather, it demonstrates that high required returns reflect identifiable and, in principle, addressable structural frictions. Any compression of the equity risk premium should therefore be interpreted as conditional and scenario-based, dependent on the credibility, sequencing, and durability of reforms. In this sense, FMVM serves not only as a valuation tool but also as a strategic diagnostic instrument, clarifying why equity markets in post-transition economies may remain shallow despite macroeconomic progress and identifying the levers most likely to support sustainable capital market development.

6. Conclusion

This study examined the effectiveness and diagnostic value of the Frontier Market Valuation Model (FMVM) in estimating Albania's equity risk premium (ERP) and decomposing it into sovereign, liquidity, behavioral, and institutional components. By applying the model to a structurally constrained frontier market, the analysis assessed whether a multi-premium framework offers superior explanatory insight relative to conventional valuation approaches.

The empirical results support **H1**, confirming that FMVM produces a substantially higher and more informative estimate of Albania's equity risk premium than CAPM or CRP-based models. The FMVM-implied ERP of approximately 20.5% exceeds sovereign-risk-only benchmarks and aligns more closely with observable market signals, including muted equity-market performance and persistently high investor risk aversion. These findings underscore the limitations of valuation frameworks that rely primarily on sovereign spreads in markets characterized by chronic illiquidity and weak price discovery.

Evidence related to **H2** indicates that Albania's equity risk premium is not driven by sovereign risk alone. While sovereign spreads remain the dominant component, both behavioral and institutional quality premiums emerge as statistically significant determinants of the model-implied cost of equity. Liquidity premiums, although persistently elevated in level terms, do not exhibit significant time-series explanatory power, reflecting their role as a structural constraint rather than a marginal source of short-run variation. Together, these results identify governance weaknesses and investor sentiment as the most binding non-sovereign channels shaping required returns.

The findings also support **H3**, showing that FMVM estimates track observable valuation dynamics more closely than CRP-only models. Periods of heightened uncertainty—such as the COVID-19 shock and subsequent policy reversals—are associated with elevated FMVM-implied risk, whereas sovereign-based benchmarks systematically understate the effects of liquidity shortages, governance fragility, and behavioral frictions. This

confirms the value of a decomposed framework for interpreting equity valuation in frontier-market contexts.

Consistent with **H4**, cross-country comparison reveals that Albania's equity risk structure differs systematically from that of its Western Balkan peers. Although Albania's overall cost of equity is closest in magnitude to Bosnia and Herzegovina, its risk profile is more evenly distributed across sovereign and non-sovereign components. Relative to Serbia, North Macedonia, and Montenegro, Albania exhibits a more fragile configuration in which liquidity constraints, institutional weaknesses, and behavioral frictions jointly reinforce a layered cost of equity that is less responsive to incremental macroeconomic or regulatory improvements.

From a policy and strategic perspective, the results indicate that Albania's elevated equity risk premium reflects identifiable structural constraints rather than immutable market conditions. The FMVM decomposition highlights persistent illiquidity, governance weaknesses, and investor sentiment as the primary channels through which equity financing costs remain elevated. Meaningful reductions in the cost of equity therefore depend less on macroeconomic stabilization alone and more on credible, sustained reforms that improve market depth, institutional enforcement, and investor confidence. In this sense, FMVM functions as a diagnostic valuation framework that identifies priority reform levers and provides comparative benchmarks within the Western Balkans, rather than as a point forecast of the magnitude or timing of risk-premium compression.

6.1. Theoretical Contributions

This study contributes to the literature on frontier and transition-market valuation by demonstrating the limitations of sovereign-risk-only approaches and showing that Albania's cost of equity cannot be accurately captured through sovereign spreads alone. By explicitly integrating liquidity, behavioral, and institutional risk factors, the FMVM offers

a measurable and empirically tractable framework that bridges the gap between the theoretical recognition of market frictions and their valuation implications. A key contribution lies in the model's ability to distinguish between statistically significant drivers of variation and structurally persistent level effects, providing valuation clarity in settings where standard market-based tools are ineffective due to chronic illiquidity or institutional constraints. The modular design of the FMVM also supports extension to other frontier and post-transition markets, as well as to sectoral and firm-level applications.

6.2. Limitations and Future Research

Several limitations warrant acknowledgment. While the proxies used for behavioral and institutional risks are robust, they may lack full cross-country comparability. The current analysis adopts a macro-structural perspective and does not incorporate firm-level fundamentals or sectoral heterogeneity, which could further refine valuation accuracy. In addition, FMVM is a reduced-form framework and does not endogenize the dynamic effects of reforms or shocks on future risk trajectories. Future research could extend the model to multi-country panel settings, integrate forward-looking reform scenarios, or explore its application to IPO pricing and sovereign bond markets.

In sum, the FMVM provides a theoretically sound and empirically validated approach to estimating the cost of equity in structurally constrained frontier markets. By disaggregating equity risk into actionable components, it enhances diagnostic precision, informs reform prioritization, and offers investors a realistic benchmark for required returns. As Albania continues its gradual path toward European integration, the FMVM can serve not only as a valuation tool but also as a strategic guide for understanding why equity markets in post-transition economies often remain shallow despite macroeconomic progress—and what structural conditions must change for sustainable capital market development to take hold.

Appendix A. Variable Definitions and Multicollinearity Diagnostics

Appendix A.1 Variable Definitions

This appendix summarizes the construction and interpretation of the key variables used in the Albania-only regression analysis reported in Table 6.

CRP (Country Risk Premium).

The sovereign risk premium is derived from rating-based default spreads following Damodaran's methodology and adjusted by the relative volatility of equity and bond markets. It captures compensation for sovereign credit risk embedded in Albanian equity valuation.

LP (Liquidity Premium).

The liquidity premium reflects the cost of trading in an illiquid market and is constructed using turnover ratios, bid-ask spreads, and ownership concentration indicators. In the Albanian context, LP captures chronic secondary-market illiquidity and limited free float on the Albanian Securities Exchange (ALSE).

BP (Behavioral Premium).

The behavioral premium represents sentiment-driven volatility and mispricing in a thin and event-sensitive market. It is estimated using a GARCH-in-Mean framework applied to quarterly ALSE index data and supplemented with sentiment proxies such as media tone, consumer confidence indicators, and seasonal anomalies.

IQP (Institutional Quality Premium).

The institutional quality premium captures governance-related risk, including weak enforcement, regulatory opacity, and policy unpredictability. It is constructed as a composite of standardized World Governance Indicators (WGI) and Corruption Perceptions Index (CPI) scores, scaled to reflect relative governance risk in frontier and post-transition markets.

Appendix A.2 Multicollinearity Diagnostic

To assess potential multicollinearity among the explanatory variables in the Albania-only OLS regression, variance inflation factors (VIFs) were considered as a diagnostic reference. Given that the FMVM is a structural decomposition in which the dependent variable (the model-implied cost of equity) is constructed as the sum of its component premiums, a high degree of correlation among CRP, LP, BP, and IQP is mechanically expected by design.

Accordingly, VIF statistics are not interpreted here as indicators of misspecification, but rather as a reflection of the additive structure of the FMVM framework. For this reason, the regression analysis is used as a validation and explanatory exercise to assess the relative contribution and statistical relevance of individual risk components, rather than as a causal or predictive model. Inference is therefore based on coefficient signs, magnitudes, and robust standard errors, consistent with applied valuation practice in frontier and post-transition market settings.

Appendix A.3 Sensitivity and Robustness Checks

To evaluate the robustness of the Frontier Market Valuation Model (FMVM), sensitivity checks were conducted by varying key input parameters within reasonable ranges consistent with frontier-market uncertainty. Component premiums (CRP, LP, BP, and IQP) were individually adjusted by ± 10 percent while holding other parameters constant. These perturbations did not alter the qualitative ranking of risk components nor the conclusion that Albania's cost of equity remains persistently elevated once non-sovereign structural frictions are incorporated.

Table A1. Sensitivity of FMVM-implied cost of equity to $\pm 10\%$ perturbations of component premiums (Albania, baseline calibration)

Scenario	CRP%	LP%	BP%	IQP%	Cost of equity%
Baseline	5.29	2.60	1.86	1.80	20.46
CRP + 10%	5.82	2.60	1.86	1.80	20.99
CRP – 10%	4.76	2.60	1.86	1.80	19.93
LP + 10%	5.29	2.86	1.86	1.80	20.72
LP – 10%	5.29	2.34	1.86	1.80	20.20
BP + 10%	5.29	2.60	2.05	1.80	20.65
BP – 10%	5.29	2.60	1.67	1.80	20.27
IQP + 10%	5.29	2.60	1.86	1.98	20.64
IQP – 10%	5.29	2.60	1.86	1.62	20.28

Note: Cost of equity = CAPM base ($R_f + \beta \cdot \text{GERP}$) + CRP + LP + BP + IQP. Each sensitivity case perturbs one premium at a time by $\pm 10\%$ holding others constant.

The results indicate that FMVM outcomes are driven by structural characteristics of the Albanian market rather than by fine calibration of individual parameters. As such, the framework exhibits stability appropriate for diagnostic valuation in frontier and post-transition settings, where data limitations and regime shifts make point estimates inherently uncertain.

Abbreviations

ALSE – Albanian Securities Exchange
 AMF – Albanian Financial Supervisory Authority
 BP – Behavioral Premium
 CAPM – Capital Asset Pricing Model
 CRP – Country Risk Premium
 ERP – Equity Risk Premium
 FMVM – Frontier Market Valuation Model
 GERP – Global Equity Risk Premium
 IQP – Institutional Quality Premium
 LP – Liquidity Premium
 OLS – Ordinary Least Squares
 SEE – South-East Europe
 TSE – Tirana Stock Exchange
 WGI – Worldwide Governance Indicators

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