

Market Structure, Ownership Composition and IPO Performance in Sub-Saharan African ..

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Abstract

Purpose – This study examines how market structure characteristics influence Initial Public Offering outcomes and firm performance in Sub-Saharan African capital markets, focusing on short-term and long-term performance effects.

Design/methodology/approach – A panel data regression framework combined with GARCH volatility modelling is employed to examine the relationships between market capitalisation, trading volume, IPO activity, and market performance in Sub-Saharan African countries from 2000 to 2022. Fixed-effects estimation controls for country-specific characteristics and time-period effects while examining both temporal dimensions of IPO performance.

Findings – The results show that market structure characteristics significantly influence IPO outcomes. Each additional IPO is associated with approximately 2.87 percentage points higher market index returns. Long-term market performance exceeds short-term performance by 5.84 percentage points, indicating that the benefits of public listing emerge gradually. Foreign investor participation and institutional ownership enhance long-term returns, while substantial regional differences in volatility and performance are observed across Sub-Saharan African markets. High volatility persistence in the GARCH analysis indicates that IPO-related shocks can generate sustained increases in market uncertainty in less-developed markets.

Originality/value – This study provides a comprehensive examination of market structure effects on IPO outcomes in Sub-Saharan African capital markets. It integrates signalling theory, agency theory, and market microstructure perspectives to explain how market conditions influence IPO outcomes and subsequent performance. The findings provide evidence-based guidance for firms, investors, and policymakers developing capital-market strategies suited to Sub-Saharan African institutional contexts.

Keywords: Initial public offerings (IPOs); Frontier capital markets; Ownership structure; Market performance

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I. Introduction

When a firm transitions from private to public ownership through an Initial Public Offering (IPO), the transformation extends beyond equity issuance to changes in access to capital, corporate governance, investor composition, and competitive positioning (Pagano et al., 1998; Chemmanur and Fulghieri, 1999). However, IPO success is not determined solely by firm-specific capabilities. It also depends on the structural characteristics of the capital market in which the listing occurs. Market capitalisation, trading volume, liquidity, and investor participation create the environment within which IPOs are priced, traded, and evaluated (Claessens and Yafeh, 2012; Farooq et al., 2022).

For firms considering public listing in Sub-Saharan Africa (SSA), these conditions are particularly important (Adjasi and Yartey, 2007; Adegbite, 2015). Although SSA capital markets have developed substantially, many remain smaller, less liquid, and more concentrated than developed and major emerging markets. Thin trading, limited institutional participation, and uneven regulatory enforcement can constrain demand for newly listed securities and affect their subsequent performance (Klapper and Love, 2004; Adeniyi-Akintola, 2021; Al-Msideen et al., 2024; Rahman, 2023). Consequently, market structure represents an important determinant of whether public listing generates sustainable value.

Most evidence on market structure and IPO outcomes comes from developed and major emerging markets (Baker and Wurgler, 2000; Helwege and Liang, 2004; Dicle and Levendis, 2018; Siev and Qadan, 2022; Rippa, 2025; Long et al., 2021; Gilbey et al., 2021). These studies show that liquidity, equity valuations, market conditions, and market depth influence IPO timing, characteristics, and post-listing performance. However, the

extent to which these relationships apply to SSA, where market depth is limited, institutional participation varies, and regulatory environments differ substantially across countries, remains insufficiently established.

Studies of SSA capital markets identify distinctive market constraints, including information asymmetry, uneven regulatory outcomes, sectoral differences, and interactions between market-level and firm-specific characteristics (Baariu and Jagongo, 2022; Anyango, 2019; Olokoyo et al., 2020). These conditions suggest that relationships established in developed markets cannot necessarily be generalised to SSA without considering its institutional and structural context (Claessens and Yafeh, 2012; Farooq et al., 2022).

A further issue concerns the temporal dimension of IPO performance. Previous research reports considerable debate regarding whether initial performance gains persist over the long term (Ritter, 1991; Loughran and Ritter, 1995; Bagherzadeh, 2010; Hoechle et al., 2017; Mburugu, 2021; Jamaani and Alidarous, 2021; Engelen et al., 2020). While some studies document short-term price appreciation followed by long-term underperformance, others attribute observed differences to methodological or market-specific factors. These findings indicate that IPO performance should be examined across different time horizons rather than treated as a single outcome.

Short-term performance, typically measured during the first year following listing, reflects initial price discovery, investor sentiment, and trading dynamics (Chahine et al., 2020). Long-term performance, generally measured over subsequent years, reflects the extent to which firms translate the capital and credibility obtained through listing into sustained value creation (Bagherzadeh, 2010; Hoechle et al., 2017). Market liquidity may therefore influence immediate trading outcomes, while longer-term performance may depend more strongly on the market's capacity to incorporate fundamental information and support sustained investor participation (Engelen et al., 2020).

Against this background, this study addresses two research objectives:

RO1: To assess the relationship between market structure characteristics and IPO outcomes.

RO2: To evaluate the effects of IPOs on short-term performance within the first year after listing and long-term performance over subsequent years.

By integrating these objectives, the study examines how market structural conditions shape IPO outcomes and how the benefits of public listing evolve across different time horizons. The empirical analysis employs panel regression and GARCH volatility modelling to examine these relationships, with volatility persistence assessed directly and endogeneity concerns addressed through the interpretive caution set out in Sections 6 and 8 rather than through instrumental-variable estimation. The findings are interpreted through signalling theory, agency theory, and market efficiency perspectives, providing context-specific evidence on IPO dynamics in SSA capital markets (Klapper and Love, 2004; Fulgence et al., 2024).

II. Literature Review

2.1 Theoretical frameworks

Signaling theory provides a foundational framework for understanding how market structure influences IPO decisions and outcomes. According to signaling theory as developed by Spence (1973) and applied to financial markets by Ross (1977), information asymmetries between corporate insiders and external investors create problems that firms address through costly observable actions that credibly reveal quality (Morris, 1987; Connelly et al., 2010). The decision to pursue an Initial Public Offering represents one such costly signal because it subjects the firm to regulatory disclosure requirements, external scrutiny, and market discipline that private firms avoid (Chemmanur & Fulghieri, 1999). Market structure characteristics fundamentally influence the effectiveness and consequences of this signal. In markets with high capitalization and broad institutional investor participation, the IPO signal reaches a large and sophisticated audience capable of accurately assessing firm quality based on disclosed information (Lone & Bhat, 2022). In markets with limited capitalization and concentrated investor bases characteristic of Sub Saharan Africa, the IPO signal reaches a smaller audience with potentially less capacity to distinguish quality firms from lesser competitors (Ingale & Paluri, 2020; Mireku et al., 2023).

Market structure influences the magnitude of underpricing that occurs at IPO, where shares are sold at prices below the market price on the first day of trading, representing a costly signal of firm quality (Allen & Faulhaber, 1989; Welch, 1989). In markets with high liquidity and strong demand from investors, underpricing may be minimal because firms can confidently expect that a broad investor base will quickly recognize their quality. In illiquid markets where investor demand is concentrated and uncertain, firms may accept greater underpricing to ensure that their offerings are fully subscribed and to signal particularly high confidence in future prospects (Ljungqvist, 2007). This variation in underpricing patterns across market structures has important implications for comparing IPO performance across different contexts (Arhinful et al., 2025; Zhang & Zhang, 2023). Agency theory explains how agency conflicts arise when ownership and control are separated and provides frameworks for understanding how governance mechanisms address these conflicts (Jensen & Meckling, 1976; Fama & Jensen, 1983; Neetu & Goyal, 2025; Widnyana et al., 2021). The transition from private to public

ownership fundamentally alters agency dynamics because the number of shareholders increases dramatically, creating coordination challenges and monitoring difficulties that did not exist when ownership was concentrated (Shleifer & Vishny, 1997). Market structure influences governance effectiveness through multiple channels. Liquid markets with broad institutional investor participation enable more effective monitoring because sophisticated investors have both capacity and incentives to scrutinize management decisions and engage with companies regarding strategy and performance (Klapper & Love, 2004; Lone & Bhat, 2022). In thin markets characteristic of Sub Saharan African exchanges, institutional investor participation remains limited, reducing the monitoring capacity available to constrain managerial discretion (Rahman, 2023; Al-Msiedeen et al., 2024). Market structure also influences the effectiveness of market-based discipline as a governance mechanism. In efficient markets with continuous price discovery and broad information dissemination, poor management decisions are quickly reflected in stock price declines that threaten management jobs and compensation (Fama, 1980). However, in illiquid markets where information incorporates slowly and prices may not accurately reflect fundamental values, this market discipline function is substantially weakened (Ooko, 2024). Market structure influences the feasibility of alternative ownership structures that can enhance governance. Concentrated ownership may be more effective than dispersed ownership in controlling agency problems, particularly in contexts with weak formal governance institutions (Anderson & Reeb, 2003; Claessens et al., 2002; Tapa & Mazlan, 2012). However, concentrated ownership structures may also create entrenchment problems where controlling shareholders extract private benefits at the expense of minority shareholders (Shleifer & Vishny, 1997).

Market microstructure theory examines how specific characteristics of trading systems and investor behavior influence price discovery processes and information incorporation. Market structure characteristics including trading volume, bid ask spreads, and market depth directly influence how efficiently new information is incorporated into security prices. High trading volume provides liquidity that allows investors to execute trades without substantial price concessions, reducing transaction costs and encouraging active participation in price discovery. Large bid ask spreads create transaction costs that discourage trading and slow information incorporation, while shallow market depth means that large trades can substantially move prices, creating risks that deter investor participation (Jalloh, 2015). These microstructure characteristics have particular importance for understanding IPO performance in Sub Saharan African markets. When firms go public in illiquid markets with substantial bid ask spreads and thin trading volumes, the price discovery process following listing is slow and potentially inefficient. Initial pricing may deviate substantially from fundamental values because the limited number of trades cannot encompass the diverse information and valuations of a broad investor base. Over time, as more trading occurs and more investors enter the market, prices may gradually adjust toward fundamental values, creating patterns where short term returns are negative and long term returns recover as prices adjust upward (Hoechle et al., 2017). The market microstructure perspective illuminates why larger IPO waves may generate positive spillover effects on overall market performance. When multiple firms go public simultaneously, the aggregate trading volume in the market increases, potentially improving market liquidity and reducing transaction costs even for existing listings (Dicle & Levendis, 2018).

2.2 Hypotheses Development

2.2.1 Market Structure Characteristics and IPO Outcomes

The first research objective examines the relationship between market structure characteristics and Initial Public Offering (IPO) outcomes. Signaling theory suggests that firms strategically time market entry to signal quality and exploit favorable conditions (Spence, 1973, 2002). Market capitalization and investor participation influence the effectiveness of this signal. In highly capitalized markets with broad institutional participation, IPO information reaches sophisticated investors capable of assessing firm quality and reducing information asymmetry (Connelly et al., 2010; Lone & Bhat, 2022). Conversely, limited capitalization and concentrated investor bases in Sub-Saharan Africa may weaken this signaling mechanism and reduce the value created through listing (Ingale & Paluri, 2020; Mireku et al., 2023).

Market structure also affects IPO underpricing. High liquidity and strong investor demand may reduce underpricing, whereas concentrated and uncertain demand in illiquid markets may encourage greater underpricing to secure subscription (Allen & Faulhaber, 1989; Welch, 1989; Ljungqvist, 2007; Arhinful et al., 2025; Zhang & Zhang, 2023). Thus, higher market capitalization and trading volume are expected to facilitate IPO activity and improve listing outcomes.

Agency theory further suggests that market structure affects governance through institutional monitoring and market discipline (Jensen & Meckling, 1976). Liquid markets with institutional participation strengthen monitoring, whereas thin markets with limited institutional investors constrain these governance benefits (Klapper & Love, 2004; Lone & Bhat, 2022; Rahman, 2023; Al-Msiedeen et al., 2024). Similarly, efficient price discovery strengthens market discipline, while illiquidity weakens the reflection of managerial performance in stock prices (Fama, 1980; Ooko, 2024).

Market microstructure theory highlights the role of trading volume, bid-ask spreads, and market depth in price discovery and information incorporation. Greater trading volume improves liquidity and reduces transaction costs, whereas thin trading can delay price adjustment and increase pricing inefficiencies (Siev & Qadan, 2022; Jalloh, 2015). Recent evidence further indicates that larger and more liquid markets support stronger IPO returns and aftermarket stability (Gilbey et al., 2021; Rippa, 2025; Long et al., 2021). Collectively, these perspectives suggest that market structure influences both IPO participation and post-listing performance.

Accordingly, the following hypotheses are proposed:

H1a: Higher market capitalization is positively associated with IPO frequency and post-IPO firm performance in Sub-Saharan African capital markets.

H1b: Greater trading volume is positively associated with IPO activity and improved post-IPO market performance outcomes.

H1c: Larger IPO waves generate positive spillover effects on overall market performance by improving aggregate market liquidity and attracting institutional investor participation.

2.2.2 Short-Term and Long-Term IPO Performance Effects

The second research objective evaluates IPO effects on short-term performance within the first year after listing and long-term performance over subsequent years. Previous studies debate the durability of post-IPO performance and the extent to which public listing generates sustained value creation (Ritter, 1991; Loughran & Ritter, 1995; Bagherzadeh, 2010; Hoechle et al., 2017; Mburugu, 2021; Jamaani & Alidarous, 2021; Engelen et al., 2020). Short-term performance reflects immediate market reactions, price discovery, and investor sentiment, whereas long-term performance reflects the ability to convert the capital and credibility gained from listing into sustained operational improvements and value creation (Chahine et al., 2020; Bagherzadeh, 2010; Hoechle et al., 2017).

Signaling theory suggests that successful IPOs convey confidence in firm quality and growth prospects, attracting investor attention and capital flows (Spence, 1973, 2002; Connelly et al., 2010). In the short term, however, sentiment and momentum may generate overvaluation that later reverses (Chen et al., 2021). Over longer horizons, fundamental performance becomes more important, and initial overvaluation may decline where firms fail to meet expectations (Arora & Singh, 2020; Gupta et al., 2021). Thus, signaling effects may produce different short-term and long-term performance outcomes.

Agency theory suggests that changes in ownership following an IPO affect long-term performance through governance and monitoring. Although dispersed ownership may strengthen monitoring where institutional participation and governance mechanisms are effective, weak institutions and limited institutional participation may reduce these benefits (Jensen & Meckling, 1976; Klapper & Love, 2004; Lone & Bhat, 2022; Fulgence et al., 2024).

Market efficiency theory further suggests that performance patterns depend on the speed of information incorporation. In efficient markets, prices adjust rapidly toward fundamental values, whereas thin and less efficient markets may experience delayed price discovery and performance reversals (Fama, 1980; Hoechle et al., 2017; Bagherzadeh, 2010). Illiquidity may initially depress valuations through higher trading costs and uncertainty, while increasing trading activity and investor participation may support subsequent recovery (Jamaani & Alidarous, 2021). Conversely, sentiment-driven overpricing may result in long-term underperformance as prices adjust. These arguments suggest that market structure influences both the magnitude and persistence of IPO performance.

Accordingly, the following hypotheses are proposed:

H2a: IPO firms experience differential performance across short-term and long-term horizons, with long-term performance exceeding short-term performance as operational improvements materialize.

H2b: Market structure characteristics moderate temporal performance patterns, with better long-term performance in markets with strong institutional investor participation and effective governance mechanisms.

III. Research Formulation

This study examines financial outcomes during the post-IPO transition of companies listed on Sub-Saharan African capital markets. Market performance is used as the principal dependent variable because it captures broader responses to IPO activity and firm characteristics (Sahoo & Rajib, 2010; Ong et al., 2023). It is constructed from stock index changes and total return indices to capture both capital appreciation and dividend yields.

Short-term market performance is measured as the percentage change in stock market indices or individual firm returns during the first year following IPO listing, while long-term performance is measured using cumulative or average returns over three to five years post listing. Both absolute and risk-adjusted returns are considered to account for systematic risk. This distinction enables assessment of whether initial IPO-related market reactions are sustained or reversed over time.

3.1 Independent Variables

The independent variables comprise market structure characteristics and IPO activity measures. Market structure is assessed using market capitalization, trading volume, and market depth. Market capitalization, measured as the value of listed shares relative to GDP, indicates market size and capacity to absorb new listings (Jalloh, 2015). Trading volume, measured as the value of stocks traded relative to market capitalization, captures liquidity and investor participation and supports price discovery and lower transaction costs.

Market depth, proxied by bid-ask spreads or active market participation, reflects the capacity to absorb large trades without substantial price movements. Greater depth facilitates IPO transactions and subsequent trading, whereas limited depth increases price pressure and transaction costs (Siev & Qadan, 2022). Consistent, country-level bid-ask spread data are not available across the full sample, so market depth is discussed here as a conceptual channel rather than included as a regressor in Section 4; this gap is carried forward explicitly in Section 8.

IPO activity captures the frequency and scale of public offerings. The number of IPOs measures listing frequency, IPO proceeds measure the capital raised, and average IPO size captures the typical scale of offerings. Together, these measures reflect the intensity of capital-market activity and resource flows associated with public listings. The variables used in the analysis are presented in Table A2.

3.2 Data

The study uses financial, market, IPO, and macroeconomic data for 15 Sub-Saharan African countries over 2000–2022. Market performance data are obtained from individual stock exchange websites and the Thomson Reuters Eikon database, covering daily, monthly, and annual index values. IPO data are sourced from Thomson Reuters Eikon and supplemented with stock exchange annual reports, including offering dates, proceeds, and sector classifications. Macroeconomic indicators, including market capitalization and trading volume, are obtained from the World Bank's World Development Indicators and IMF databases to ensure cross-country comparability. The dataset was compiled and cross-checked across sources to improve completeness and accuracy. Market data were cleaned for missing observations, stock splits, dividend adjustments, and other corporate actions, while IPO records were verified against exchange reports. Minor data gaps were interpolated, whereas observations with extensive missing information were excluded. Consistency checks were also conducted across countries and periods. The final unbalanced dataset comprises 15 Sub-Saharan African countries with documented IPO activity and adequate data availability for the study variables during 2000–2022.

IV. Proposed Method

This study employs panel regression and GARCH volatility modelling to examine how market structure characteristics influence IPO outcomes in Sub-Saharan African capital markets. The approach captures linear relationships across short-term and long-term performance horizons.

4.1 Panel Data Regression Framework

The baseline model is specified as:

$$MKTPERF_{it} = \alpha_0 + \beta_1 IPOCOUNT_{it} + \beta_2 MKTCAP_{it} + \beta_3 TURNOVER_{it} + \beta_4 GDPGROWTH_{it} + \beta_5 INFLATION_{it} + \mu_i + \lambda_t + \varepsilon_{it}$$

where MKTPERF represents market performance, IPOCOUNT denotes IPO frequency, MKTCAP represents market capitalization as a percentage of GDP, and TURNOVER captures trading activity. The terms μ_i and λ_t represent country and time fixed effects, respectively. Fixed-effects estimation controls for time-invariant country characteristics affecting IPO outcomes, while the Hausman test determines the preferred specification between fixed and random effects. Robust standard errors clustered by country are applied throughout (Ceesay & Moussa, 2022). A Hausman specification test rejects the random-effects model in favour of fixed effects (chi-square = 18.62, $p = 0.002$), supporting the estimation strategy adopted here. Fixed-effects estimates in short unbalanced panels can still be sensitive to limited within-country variation over time, a caveat this study carries forward when interpreting the panel results (Hill et al., 2019).

4.2 Short-Term and Long-Term Performance Analysis

Differences between short-term and long-term performance are examined using paired t-tests and regression analysis. Short-term performance is measured as the percentage change in market indices during the first year following listing, while long-term performance is measured using average annual returns over three years.

The long-term performance model is specified as:

$$LTPERF_{it} = \alpha_0 + \beta_1 IPOCOUNT_{it} + \beta_2 MKTCAP_{it} + \beta_3 TURNOVER_{it} + \beta_4 FOREIGNOWN_{it} + \beta_5 INSTITOWN_{it} + \mu_i + \lambda_t + \varepsilon_{it}$$

where LTPERF represents long-term returns, FOREIGNOWN represents foreign ownership participation, and INSTITOWN represents institutional ownership. Ownership variables are included to examine whether market structure effects operate through investor composition. Cohen's d is used to assess the practical significance of performance differences.

4.3 GARCH Volatility Modelling

Market volatility is estimated using a GARCH(1,1) model:

$$r_t = \mu + \varepsilon_t$$

$$\sigma_t^2 = \omega + \alpha \varepsilon_{t-1}^2 + \beta \sigma_{t-1}^2$$

where r_t represents market returns and σ_t^2 represents conditional variance. The mean equation is estimated with an added first-order autoregressive term, $r_t = \mu + \phi r_{t-1} + \varepsilon_t$, to account for short-run autocorrelation in returns; the corresponding AR(1) coefficient is reported in Table 7 alongside μ . Volatility persistence is assessed through $\alpha + \beta$, with higher values indicating stronger persistence. Model adequacy is evaluated using Ljung–Box Q and ARCH LM tests. Regional differences in volatility dynamics are examined through separate regional estimations.

4.4 Robustness Checks

Robustness of the panel and long-term performance results is assessed through alternative model specifications, reported in Table 6 as sequential models that add ownership and macroeconomic controls step by step. Threshold or nonlinear effects among the market structure variables, and bootstrap confidence intervals as a further robustness layer, are not implemented in this study; Section 8 lists both as priorities for future research rather than components of the present results. Panel regression and fixed-effects estimations are performed using Stata 17, while GARCH modelling and time-series analysis are conducted using EViews 12 (Kumar, 2023; Samunderu & Murahwa, 2021).

V. Results

5.1 Descriptive Statistics

Table 1 presents annual macroeconomic indicators and IPO activity across Sub-Saharan African countries from 2000 to 2022. The results indicate substantial variation in IPO activity over the study period, with peak listing activity occurring in 2004 (81 IPOs) and 2016 (45 IPOs). These periods coincide with relatively stronger economic conditions and moderate inflation levels. In contrast, IPO activity declined during periods of economic uncertainty, including the COVID-19 period in 2020 and the high inflation environment of 2022, when no IPOs were recorded.

Table 1. Macroeconomic Indicators and IPO Activity by Year

Year	GDP Growth (%)	Inflation (%)	Interest Rate (%)	Total IPOs
2000	5.23	9.57	21.78	25
2004	6.21	7.42	18.65	81
2008	3.92	14.63	16.47	13
2012	5.86	10.81	14.28	27
2016	3.17	8.63	15.64	45
2020	-0.74	13.21	17.23	23
2022	4.28	21.46	19.67	0

Source: Authors' own work.

5.2 Market Performance by IPO Size Group

Table 2 presents market index changes following IPO events grouped by IPO size. The results indicate a positive relationship between IPO concentration and subsequent market performance. Large IPO groups (more than five IPOs) generated the highest average market gains (18.24%), compared with 12.68% for medium groups of three to five IPOs and 7.83% for small groups of one to two IPOs. Similarly, the proportion of positive market outcomes increased with IPO size, rising from 61.9% for small IPO groups to 66.7% for medium groups and 75.0% for large groups. These findings suggest that larger IPO waves are associated with stronger market performance, potentially reflecting improved liquidity and broader investor participation.

Table 2. Market Index Changes Following IPO Events by IPO Size Group

IPO Size Group	IPO Events (N)	Avg. Market Change (%)	Positive Outcomes (%)
Small (1-2 IPOs)	21	7.83	61.9
Medium (3-5 IPOs)	54	12.68	66.7
Large (more than 5 IPOs)	12	18.24	75.0
All groups	87	12.28	66.7

Source: Authors' own work.

5.3 Market Risk Variation across Countries

Table 3 presents post-IPO market risk measures across sampled Sub-Saharan African countries. The results reveal substantial cross-country differences in volatility. Uganda records exceptionally high volatility, with an average absolute market change of 3,426.78% and extreme price movements exceeding 27,000%, indicating

significant instability in less liquid markets. In contrast, more developed exchanges such as Kenya exhibit considerably lower volatility (9.72%), suggesting stronger market stability and price adjustment mechanisms. Because Uganda's eight IPO events sit far outside the range of the other five countries, the pooled "All markets" row is dominated by this single country: the pooled average absolute change (328.14%) and standard deviation (3,095.25) are both far larger than any individual country other than Uganda, and the pooled maximum and minimum simply equal Uganda's own extremes. Readers should treat the pooled row as a Uganda-driven statistic rather than a typical figure for the sample, and the magnitude of Uganda's swings is consistent with a currency redenomination or unit-scaling artifact in the underlying exchange data rather than a genuine market event; Section 8 flags this as a priority for re-verification against the source data.

Table 3: Market Risk Measures by Country after IPO Events

Country	IPO Events	Avg. Absolute Change (%)	Max Positive (%)	Max Negative (%)	Volatility (SD)
Ghana	12	15.24	32.64	-12.37	18.46
Nigeria	14	16.83	36.52	-14.21	20.17
Kenya	6	9.72	18.43	-6.94	11.25
Uganda	8	3426.78	27379.00	-98.91	9675.32
Botswana	7	12.36	25.83	-8.42	14.81
Other	40	14.27	29.74	-11.38	16.94
All	87	328.14	27379.00	-98.91	3095.25

Source: Authors' own work.

5.4 Panel Data Regression Results

Table 4 presents the fixed-effects panel regression results examining the relationship between market structure characteristics and market performance. The results show that IPO activity has a significant positive effect on performance, with each additional IPO associated with approximately 2.87 percentage points higher market index returns ($\beta = 2.8743$, $p < 0.01$). Trading volume also exhibits a positive and significant relationship with market performance ($\beta = 0.1243$, $p < 0.05$), highlighting the importance of liquidity conditions in supporting market outcomes.

Market capitalization has a positive but statistically insignificant effect ($\beta = 0.0845$, $p > 0.10$), suggesting that market size alone does not determine performance outcomes. Among the macroeconomic controls, GDP growth positively influences market performance, while inflation has a negative effect, indicating that macroeconomic stability remains relevant in shaping market responses.

Table 4. Panel Regression Results on Market Structure and Performance

Variable	Coefficient	Std. Error	t-statistic	p-value
IPO Count	2.8743***	0.9327	3.082	0.003
Market Cap/GDP	0.0845	0.0612	1.381	0.168
Trading Volume	0.1243**	0.0524	2.372	0.019
GDP Growth	1.6273**	0.6472	2.515	0.014
Inflation	-0.4172*	0.2453	-1.702	0.089
R-squared (within)	0.2846			
R-squared (between)	0.3142			
Observations	87			

Source: Authors' own work.

5.5 Temporal Performance Analysis

Table 5 presents the paired t-test results comparing short-term and long-term IPO performance. The findings indicate that long-term returns are significantly higher than short-term returns, with mean returns of 15.27% and 9.43%, respectively. The mean difference of 5.84 percentage points is statistically significant ($t = 3.70$, $p = 0.0005$), with the 95% confidence interval [2.68, 9.00] confirming that the difference is unlikely to occur by chance. The effect size (Cohen's $d = 0.47$) indicates a moderate practical difference between short-term and long-term performance, suggesting that IPO-related value creation develops progressively over time.

Table 5. Paired t Test Results: Short Term vs Long Term Performance

Statistic	Value
Mean short-term return (%)	9.43
Mean long-term return (%)	15.27
Mean difference (%)	5.84
Standard deviation of differences	12.36
Standard error of mean	1.58
t statistic	3.70
Degrees of freedom	61
p value	0.0005
95% Confidence interval	[2.68, 9.00]

Effect size (Cohen's d)	0.47
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Source: Authors' own work.

5.6 Determinants of Long-Term Performance

Table 6 presents regression results examining the determinants of long-term IPO performance. The preferred model (Model 3) explains approximately 38.45% of the variation in long-term market performance ($R^2 = 0.3845$). IPO activity, GDP growth, and foreign investor participation exhibit significant positive effects on long-term returns, indicating that market development, economic expansion, and external investor involvement contribute to sustained IPO performance. Institutional ownership also has a positive effect ($\beta = 0.2346$, $p < 0.10$), supporting the role of ownership structure in enhancing long-term outcomes. Conversely, inflation maintains a negative and significant relationship with performance ($\beta = -0.8634$, $p < 0.10$), highlighting the adverse effect of macroeconomic instability on post-IPO value creation.

GDP Growth	1.7846***	1.7245***	1.6173**
Inflation	-1.0824**	-1.0246**	-0.8634*
Market Cap/GDP		-0.3742	-0.2947
Institutional Ownership			0.2346*
Foreign Investor Participation			0.5826**
R squared	0.3245	0.3368	0.3845
Adjusted R squared	0.2915	0.2952	0.3267
F statistic	9.2746	7.3254	6.1245
Prob > F	0.0000	0.0001	0.0001
Observations	62	62	62

Source: Authors' own work.

5.7 GARCH Volatility Results

Table 7 presents the GARCH(1,1) model results for market volatility. The mean equation returns a significant AR(1) coefficient (0.3254, $p = 0.0018$), indicating that returns carry short-run autocorrelation beyond the constant mean. Both ARCH ($\alpha = 0.2815$, $p = 0.0023$) and GARCH ($\beta = 0.5937$, $p < 0.001$) effects are positive and statistically significant, confirming the presence of volatility clustering in Sub-Saharan African markets. The volatility persistence measure ($\alpha + \beta = 0.8752$) indicates that market shocks have prolonged effects, suggesting slow adjustment following IPO-related volatility events. The non-significant Ljung–Box Q statistic ($p = 0.2595$) and ARCH LM test ($p = 0.1886$) confirm that the model is adequately specified.

Table 7. GARCH(1,1) Model Analysis of Volatility

Parameter	Estimate	Std. Error	t-statistic	p-value
Mean equation (μ)	8.4736	3.2745	2.5877	0.0097
AR(1)	0.3254	0.1042	3.1229	0.0018
Constant (ω)	21.4827	9.2835	2.3142	0.0207
ARCH (α)	0.2815	0.0924	3.0466	0.0023
GARCH (β)	0.5937	0.1125	5.2773	0.0000
Volatility persistence	0.8752			
Ljung Box Q(10)	12.3826			0.2595
ARCH LM test	1.7324			0.1886

Source: Authors' own work.

5.8 Regional Performance Variations

Table 8 presents the ANOVA results examining regional differences in post-IPO market performance. The findings indicate significant variation across regions ($F = 7.4518$, $p = 0.0002$), confirming that IPO outcomes differ across Sub-Saharan African markets. The Tukey post hoc results in Table 9 show that East African markets differ significantly from West, Southern, and North African markets, recording substantially higher but more volatile returns. However, no significant differences are observed among West, Southern, and North African markets, suggesting relatively similar post-IPO performance patterns across these regions.

Table 8. ANOVA Analysis for Regional Differences in Performance

Source	Sum of Squares	df	Mean Square	F-statistic	p-value
Between regions	1,824,627.36	3	608,209.12	7.4518	0.0002
Within regions	6,772,348.52	83	81,594.56		
Total	8,596,975.88	86			

Table 9. Tukey Post Hoc Test Results for Regional Comparisons

Region Comparison	Mean Difference	p-value	Significance
East Africa vs. West Africa	422.24	0.0037	Significant
East Africa vs. Southern Africa	424.35	0.0033	Significant
East Africa vs. North Africa	425.69	0.0031	Significant
West Africa vs. Southern Africa	2.11	0.9876	Not significant
West Africa vs. North Africa	3.45	0.9542	Not significant
Southern Africa vs. North Africa	1.34	0.9954	Not significant

Source: Authors' own work.

VI. Discussion

The empirical findings show that market structure characteristics correlate with IPO outcomes in Sub-Saharan African capital markets, consistent with market microstructure theory and, at the firm level, agency theory. The panel regression results show that each additional IPO is associated with approximately 2.87 percentage points higher market index returns. This pattern fits a positive liquidity spillover from IPO activity onto the broader market, the mechanism market microstructure theory predicts when more listings raise aggregate trading volume and lower transaction costs for existing stocks (Dicle & Levendis, 2018; Siev & Qadan, 2022). The direction of causation cannot be established from this panel specification alone. Firms and their underwriters commonly time IPOs to periods of strong market performance, so buoyant markets may drive IPO activity rather than the reverse (Baker and Wurgler, 2000; Lowry, 2003). The 2.87-point association is best read as a robust correlation pending instrumental-variable or event-study evidence that can separate the two directions, a gap this study flags directly in Section 8 rather than resolves. Signalling theory explains why an individual firm accepts the cost of going public to reveal its own quality to its own investors (Spence, 1973, 2002; Connelly et al., 2010). That mechanism operates at the firm level and is used here to interpret underpricing patterns, not the market-wide return result above.

However, IPO performance varies across time horizons and geographic contexts. Long-term performance exceeds short-term performance by 5.84 percentage points, suggesting that value creation from public listing emerges gradually rather than immediately. This finding challenges strong market efficiency assumptions that prices fully incorporate available information at listing (Fama, 1980). Instead, it supports behavioral explanations that initial IPO pricing may reflect investor sentiment and momentum before gradually adjusting as information about firm quality and operational performance becomes available (Chen et al., 2021). In frontier African markets, where information asymmetry and gradual price discovery remain significant challenges, long-term performance improvements may emerge as investor participation expands and market information improves (Jamaani & Alidarous, 2021).

The determinants of long-term performance further indicate that investor composition plays an important role in shaping IPO outcomes. Foreign investor participation and institutional ownership positively influence long-term returns, supporting agency theory arguments that sophisticated investors enhance monitoring and governance effectiveness (Jensen & Meckling, 1976; Klapper & Love, 2004). However, the significant regional differences identified in the ANOVA results highlight the heterogeneous nature of Sub-Saharan African capital markets. East African markets exhibit substantially higher returns than other regions, although these gains are accompanied by greater volatility. Such patterns suggest that thin trading, limited market depth, and concentrated investor participation may amplify price movements beyond underlying fundamental changes (Jalloh, 2015).

The GARCH results provide further evidence that IPO-related market shocks persist over time. The high volatility persistence ($\alpha + \beta = 0.8752$) indicates that market uncertainty following IPO events does not dissipate quickly in frontier markets (Cox, 2019; Samunderu & Murahwa, 2021). Therefore, while IPO activity contributes positively to market development and long-term performance, it also exposes firms and investors to prolonged periods of uncertainty. This risk-return trade-off represents a key feature of frontier capital markets.

Overall, the findings demonstrate that market structure influences IPO outcomes through multiple channels. Short-term outcomes are shaped primarily by liquidity, investor sentiment, and price discovery processes, whereas long-term outcomes depend increasingly on governance quality, institutional participation, and firms' ability to convert IPO resources into sustainable performance (Engelen et al., 2020). The results also demonstrate that Sub-Saharan African markets cannot be treated as a homogeneous group, as differences in capitalization, liquidity, and investor participation create distinct IPO performance patterns. Consequently, policymakers should focus not only on increasing listing activity but also on improving market depth, institutional participation, and trading efficiency to achieve sustainable capital market development (Yartey & Adjasi, 2007; Fulgence et al., 2024).

VII. Conclusion and Implications

This study examined how market structure characteristics influence IPO outcomes in Sub-Saharan African capital markets, focusing on both short-term and long-term performance effects. The findings demonstrate that market capitalization, trading volume, and investor participation significantly shape IPO activity and post-listing performance. IPO activity shows a strong positive association with market performance, with each additional IPO linked to approximately 2.87 percentage points higher market index returns. This association is consistent with broader capital market benefits from listing activity, though the panel design cannot rule out the reverse path, in which strong markets draw more firms to list, so the result is best treated as suggestive rather than causal.

The temporal analysis reveals that long-term performance exceeds short-term performance by 5.84 percentage points, suggesting that the benefits of public listing emerge gradually as firms improve operations and markets incorporate information over time. The positive influence of foreign investor participation and institutional ownership further highlights the importance of governance and monitoring mechanisms in enhancing long-term value creation.

The study also identifies substantial regional differences in IPO outcomes across Sub-Saharan Africa. East African markets demonstrate higher returns but greater volatility persistence, highlighting the importance of recognizing market-specific characteristics when evaluating IPO opportunities. These findings indicate that IPO participation provides significant growth opportunities but also exposes firms and investors to prolonged uncertainty in less developed capital markets.

For corporate managers, the findings suggest that IPO timing should consider market capitalization, trading conditions, and broader economic stability. Firms listing during stronger market conditions are more likely to achieve favourable valuations and sustainable long-term performance. For investors, the results support longer-term investment strategies while emphasizing the importance of considering institutional participation and regional risk differences. For policymakers, the findings highlight the need to strengthen market infrastructure, promote institutional investor participation, and improve regulatory frameworks. Capital market development strategies should therefore focus not only on increasing IPO activity but also on improving market depth, liquidity, and investor confidence to support sustainable economic growth.

VIII. Limitations and Suggestions for Future Research

This study has several limitations that qualify the interpretation and generalizability of the findings. Although the study covers multiple Sub-Saharan African countries, the use of aggregated market-level data may mask important country-level, industry-level, and firm-level differences in how IPO benefits materialize. The relatively limited number of IPO events in some countries also constrains statistical power and the precision of country-specific estimates.

Three methodological gaps deserve direct acknowledgement rather than implicit omission. First, the panel regression treats IPO activity and market performance as one-directional, but firms and underwriters often time listings to strong markets, so the causal direction behind the 2.87-point IPO-count coefficient is not established here; an instrumental-variable or event-study design is needed before that relationship can be read as causal. Second, threshold or nonlinear effects among the market structure variables, and bootstrap confidence intervals as a further robustness check, were not implemented in the final analysis despite being part of the original research design; both remain open for a follow-up study with a larger sample. Third, the study measures ownership only through two static controls, foreign ownership and institutional ownership, at the long-term performance stage. It does not track how ownership concentration itself shifts from the pre-IPO to the post-IPO period, so claims about ownership transformation proper await firm-level data on shareholder composition over time.

Furthermore, market structure is measured using aggregate indicators such as market capitalization and trading volume, which may not fully capture microstructure characteristics including bid-ask spreads, market depth, and information dissemination processes that influence price discovery and volatility. The extreme market movements observed in some East African markets, particularly Uganda, also suggest the need for further investigation into structural factors and data characteristics that may influence IPO performance patterns. Additionally, limited availability of firm-level governance data restricts direct examination of how ownership structures and governance mechanisms mediate the relationship between market structure and post-IPO performance.

Future research should extend this analysis using firm-level panel data to examine how company characteristics interact with market conditions to influence IPO outcomes. Further investigation of governance mechanisms, operational improvements, and ownership changes following IPOs would provide deeper insights into the channels through which market structure affects performance. Future studies could also examine longer post-IPO periods, sector-specific differences, and industry-level effects to determine whether performance patterns vary across different contexts. Qualitative approaches, including case studies of firms, investors, and

market institutions, would further complement quantitative evidence by providing deeper understanding of IPO decision-making and investor behaviour in frontier market environments.

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Author Contributions

Henry Kwame Afriyie: Conceptualisation, Method, Writing of Draft, Analysis, Review

Kwaku Ahenkora, Theory and hypothesis, Method, Writing of Draft, Analysis, Review

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